



DESING AND DEVELOPEMENT OF VIDEOGAMES DEGREE

- Technical Report of the Degree final Project -

Graphic Adventure videogame using Fuzzy Logic algorithms to set the path of the story

Manuel MONZONÍS FRANCH

Supervised by

Luis Amable GARCÍA FERNÁNDEZ

July 1, 2019

Abstract

The objective in this technical proposal is to present a Final degree project that consists on the creation of a post apocalyptic graphic adventure with alternative endings and events based on the player choices. The events and endings will not only be ordered by player choices but by a Fuzzy logic that will take on account the player actions. This project will be on 3D with an isometric view view and will be developed on Unity3D[2].

Contents

1	Technical proposal	5
1.1	Key Words	5
1.2	Summary	5
1.3	Introduction	5
1.4	Related Subjects	6
1.5	Objectives	6
1.6	Task planning	6
1.7	Tools	6
1.8	Expected results	7
2	Game Design Document	8
2.1	Main Features	8
2.2	State of the art	8
2.3	Gameplay	8
2.3.1	Controls	9
2.3.2	The Playable Character	9
2.3.3	Other Characters	9
2.3.4	Playable Level	10
2.4	Art and Graphics	10
2.4.1	Art Style	10
2.4.2	Menus	10
2.4.3	Gameplay	10
3	Narrative Design	12
3.1	Synopsis	12
3.2	Characters	12
4	Art and animations	14

4.1	Models and Textures	14
4.2	Animations	16
4.3	Game World	16
5	Technical Specifications	17
5.1	System requirements and performance	17
5.2	Repository	17
5.3	Fuzzy Logic	18
5.4	Dialog system	23
5.5	NPCs AI	24
5.6	Day/Night cycle	24
5.7	Reactions and Conditions	25
5.8	Custom Editors in Unity	25
6	Results Achieved	27
6.1	Accomplished tasks and real timing	27
7	Conclusions	28
A	Script	29
A.1	Summary	29
A.2	Character 1: Harris	29
A.3	Character 2: Amy	35
A.4	Character 3: Mir	41
A.5	Character 4: Tomy	47
A.6	Ending A	52
A.7	Ending B	52
A.8	Ending C	53
A.9	Ending D	53

List of Figures

1	A Fir Tree modeled with blender and texturized with Substance painter . . .	14
2	A bed modeled with blender and texturized with Substance painter	14
3	A street light modeled with blender and texturized with Substance painter .	15
4	A pocket watch modeled with blender and texturized with Substance painter	15
5	Some shrooms watch modeled with blender and texturized with Substance painter	16
6	The main character modeled with blender and texturized with Substance painter	16
7	The scenario of the project as it is seen in the game	17
8	Visual representation of the Linguistic variable "object"	20
9	Visual representation of the Linguistic Variable "time"	20
10	Visual representation of the Linguistic Variable which will be the output . .	20
11	Code example of a Fuzzy Set in the project	22
12	Code example of a Fuzzy Set resolution in the project	22
13	An example of a Fungus Flowchart in the project	24
14	An example of a Serializable object editor in the project	26
15	An example of a custom editor in the project	27

1 Technical proposal

1.1 Key Words

Alternative endings, graphic adventure, time loop, decision trees

1.2 Summary

The objective in this technical proposal is to present a Final degree project that consists on the creation of a post apocalyptic graphic adventure with alternative endings and events based on the player choices. The events and endings will not only be ordered by player choices but by a Fuzzy logic that will take on account the player actions. This project will be on 3D with an isometric view and will be developed on Unity3D[2].

1.3 Introduction

In the environment of modern game the tendency of making branched paths in the narrative is on the rise, a good example of this would be "Zero Escape: Virtue's Last Reward"[7], or the games from game studios "Telltale Games"[4], like "The Wolf Among Us"[5]. This form of narrative is starting to be applied to different genres of games with more or less success. However the way to tell a story on those games falls short when taking on account the actions of the player. This project proposes a changing narrative. The video game will have an ending system based on time, depending on the objects the player possesses and time the player interacts with the NPC as well as how much dialog the player has seen. Each NPC will feature its own Dialog Tree and the actions taken by the player and its decisions on the Dialog Tree will reflect on the story. Some of the paths on the Dialog Tree will be managed by a Fuzzy Logic AI (Artificial Intelligence).

What this project proposes is a way of creating branching paths. The actions taken at each time by the player will be taken on account in a similar way to "The Legend of Zelda: Majora's Mask"[8]. In that game, certain actions can only be solved at an specific time of the game. All these kind of events will run on a game clock. All the events will run in a 12 minutes cycle. 4 minutes of game simulate an entire day, each day will consist of day and night and the NPC will adapt their timetable to the time of the game.

The project is a game on the style of graphic adventures with an isometric view. The player will interact with the NPC and objects in the scenery. The game will use the Unity plug-in Fungus[3] for the Dialog system.

The objective of the game is to cooperate with the NPC in order to find the player's sister, who has disappeared, and the NPCs own information regarding to her disappearance. If the player is unable to find him within schedule it will be game over and the player gets the worst ending.

1.4 Related Subjects

- Game Engines -VJ12227
- Hypermedia narrative and analysis of video games -VJ1218
- Video game concept design -VJ1222
- Artificial Intelligence -VJ1231
- 3D Design -VJ1216
- Algorithms and Data Structures - VJ1215

1.5 Objectives

To design and implement a video game that fulfills the following characteristics:

- A branched path narrative driven by player choices.
- An isometric view with 3d low-poly models.

1.6 Task planning

- Technical proposal creation - 4h
- Formation on Fungus and the different ways of branching narrative -16h
- Plan and design a night-day cycle -16h
- Character modeling -24h
- Environmental modeling -36h
- Game narrative development -40h
- Implementation of game characters, their routine and combat AI -28h
- Implementation of Fuzzy Logic for the narrative system -20h
- Implementation of the dialog system and events driven by the player actions -24h
- Finalize the actions and endings of the game -20h
- Testing -12h
- Project memory creation -30h

1.7 Tools

- Unity3D, used in the implementation and production of the game
- Fungus, used to create the narrative of the video game on Unity3d
- Blender [1], used to create the 3d models in the game

1.8 Expected results

Obtain a video game with at least the following results:

- An scenario
- 4 able to interact NPCs
- 4 different ending
- 12 minutes of game play divided y 3 cycles of day & night

2 Game Design Document

2.1 Main Features

This project will have the following features:

- A branched path narrative with multiple endings driven by player actions.
- A small 3D world seen from an isometric camera.
- A Fuzzy Logic system that determines the path of the story based on the player's actions.
- NPCs the player can talk to that follow a specific schedule in a day and night cycle.

2.2 State of the art

As explained above, this game features a kind of AI that determines the path of the story that can be followed by the player. The use of this kind of feature isn't a common practice with games. Though there are a few games that notably use AI in a purpose similar to this project, like "80 Days"[\[10\]](#), there is none that use the Technique of Fuzzy Logic in the same way.

Although the use of not only Fuzzy Logic, but other AI techniques are largely extended inside the industry, the use of this techniques and Fuzzy Logic in particular is used as a way to control NPCs (or Non Playable Characters from now on) behavior rather than using it for narrative purposes.

2.3 Gameplay

This game plays like a Graphic Adventure game, at the start of the game the player wakes up in a village occupied by 4 characters that live in there and the player must interact and talk with them to unveil the story. The player will be able to interact with some objects in the scenery to inspect them and sometimes pick up objects.

The game features a night and day cycle and the NPCs follow that cycle. During the day the NPC follows a specific schedule until night falls. During night the NPCs will be unavailable as they will be sleeping. Rather than just follow a story until it finishes this game plays a bit different, the game is on a timer. In the day and night cycle of the game there will be only 3 days to the player to complete their quest, regardless of how much the player has interacted with the scenery or NPCs the game will reach a conclusion in that time and the player will see an ending (not interacting with anything obviously will get the worst ending). The player then must talk with NPCs and interact with the scenery in order to gather information and reach a good ending. This endings will not be entirely on the hands of the player to get, since the Fuzzy Logic AI plays a strong role in deciding and complicating the things a little bit for the player.

The NPCs will follow a path through the scenery while doing their chores and you can interact with them anytime. Interacting with any NPC or object in the game will pause the timer to lift a bit of the pressure caused by that timer. the dialog that the player can get from any NPC will change as the time progresses. The dialog will be shown using a tool called Fungus, a Unity Plugin that allows to display dialog in a simple way.

The Game will feature a small inventory system to save and display some objects that will be important to the function of the Fuzzy Logic and the player will be able to display it and hide it any time. Since the game runs on a clock the day and hour of the run will be displayed on screen, that way the player can always know how much time left they have until the game reaches its end. The clock will run constantly even on night time and the player cannot go to sleep.

2.3.1 Controls

Most of the game is controlled with the mouse. left-clicking on any surface will make the player move in that direction, and clicking on an interactable object or an NPC will make the player character go to them and then interact. The camera will always follow the player character, but it can be rotated with keys Q and E. The mouse wheel can be used to zoom in and out the camera. By pressing the Space key the player can show or hide the inventory.

2.3.2 The Playable Character

The main (and playable) character in this game is a traveler and package deliverer that arrived to the outskirts of the village with her sister and got caught by a toxic cloud in the forest. She is then rescued by the villagers and works to go back on her trail to find her sister by talking to the villagers to get some information, about themselves, her sister or the situation in particular.

2.3.3 Other Characters

Besides the main character and her sister there are 4 other characters (NPCs) that play a role in the story. Each of them wanders around the village doing their chores and can be talk to. They are the following:

- **Harris:** Harris was a bartender and a medicine student before the world became a wasteland. He knew the other villagers when wandering through the wasteland and decided to become their doctor as he had more chances of surviving in group. He doesn't seem to get really along with the rest, but he tries to tolerate them for practical reasons. He's the one to treat the main (player) character after they find her.
- **Amy:** Amy has a real passion for plants and nature and has worked as a herbologist for a long time. She likes to play along with plants, and knows all of their properties, she is a kind of a good nutritionist also. Sometimes she likes to try and make potions

out of witchcraft books which she used to sell for a little bit of money. Her brother Tomy is also a villager with whom she has a weird relationship.

- Mir: Mir is an artist, she studied fine arts at college and is good with different art styles and handicrafts. She always struggled to get money for her work as it is pretty difficult to work as an artist. She mostly does repair stuff in the village to help out as the others aren't the most suit up for that kind of work. She knew Tomy in uni and became friends of short, when they had to start looking for shelter she was the one to find out the place they use as a village now.
- Tomy: Tomy acts like he's the boss around the village, although he really isn't. He studied engineering at college as he always liked machines and clockworks. He is sort of obnoxious to everyone new he meets out of caution, as he would say. He's known for trying to get benefit from anyone he can as he sees their situation as extreme. However, both Amy a Mir, who knew him for a long time know harming anyone isn't really in his nature. He's mostly all talk.

2.3.4 Playable Level

The playable level will be a village inside of a large dome were the NPCs live to protect themselves from the toxic waste outside in the woods. The 3d level will not feature a map to get around. The village is formed of 2 buildings that are used as housing by the villagers, the dome that envelopes them, and the woods outside.

2.4 Art and Graphics

2.4.1 Art Style

This game is made using 3D models, mostly Low Poly. The textures used for the 3D models will be colorful and cartoon, mostly using plain and bright colors, similar how the game Animal Crossing [6] uses them. Animal Crossing [6] is the most significant referent, both in the shape of the models and characters and texture color, to this game.

2.4.2 Menus

The game will feature a main menu that will allow the player to:

- New game: This options allows the player to start a new game (all progress will be lost)
- Exit

2.4.3 Gameplay

During the game there will be 2 indicators to signal the state of the game to the player:

- Timer: A display that will always show the date and hour of the game in used time, starting from the beginning of the game (Ex: 2d 14h).
- Inventory: With an input the player can display the inventory to see what objects they have stored.

3 Narrative Design

3.1 Synopsis

The synopsis of the story of this project goes as follows: The main character of this game is Pris (which the player controls) and she lives in a world poisoned by radioactive waste. Her job is to make contacts with settlements for her partners in her settlement by acting as a sort of mailman along with her sister. During their travels they end up losing conscience in a forest filled with radioactive waste. After that Pris wakes up in a small dome (where the game takes place) with her sister disappeared. The objective of Pris from there on is to find her sister and leave the place in time to go back home and possibly finish her job, but she has to stay 3 full days in the dome until the radiation starts to fade. Therefore Pris will have to talk with the other characters who live there to figure out the situation of her sister and decide whether to go back home without her and the package they were carrying or to find her sister staying in the site or not.

Since the ramification of the story makes way for a lot of paths and dialog to cover it was decided to keep it a bit simple, focusing on the feature of the Fuzzy Logic and trying not to overextend the narrative which would make a lot harder for the Fuzzy Logic to work due to the amount of variables that must be taken on account. As well to adjust the timelines of each ramification to make sense with the story that's presented. In the end the game features 4 different endings achievable through talking with different characters as well as 16 different paths, 4 for each character in the game that are managed with the Fuzzy Logic. In the annex below is the whole script with ramifications and split in blocks (of conversations) as well as the 4 endings.

3.2 Characters

In this project there are 4 NPC characters that play a role in the story, they are the NPCs that roam the game world, each has its own traits and we're going to describe them a little bit below:

- **Harris:** Harris is a medicine student that worked as a barman before the whole world became radioactive. Harris got entangled with the rest of the group after that, and since he had all this medic training he served as a good asset to the rest. He's not ill willed by nature, but he can come off the wrong way. His relationship with the rest of the group is complicated, since he is the medic he gets the job of treating everyone and feels disregarded by the rest. He's specially at odds with Tomy, since he likes to boss around him a lot. Harris treats everyone that comes from the outside of the dome, but Tomy, who sees an opportunity in all this situation often holds to ransom whoever gets in the dome, sometimes they get someone out to avoid drawing too much attention. Harris isn't really happy about it, but has gotten too deep into the mess to get out and decides is best to just do his job and keep a blind eye to Tomy's doing, that doesn't do too good for him though.
- **Amy:** Amy is a Biology student become herbologist, she used to have a shop before the radiation where she sold all kinds of herbs, offered herbal solutions, nutrition

advice, and also liked to practice some home witchcraft. Amy was always sort of drawn to occult things and liked toying with them, its not that she fully believes in them, but their practices serves as a hobby to her. To her there's a deeply interesting thing about the proceedings of witchcraft and its inner workings and the whole concept amuses her. She's highly energetic and likes to mess around with people a bit, she also opens up to people quickly, a trait that she values a lot, after all, what's life without friends? She works as the manager of the food and resources inside the dome, seeing nothing gets lost and all the items are in good condition. Tomy is her younger brother, although they could get along better and Amy has a lot of clashes with him about his business in the dome, she feels she should stand by him while she has him controlled.

- Tomy: Tomy was an engineer before the radiation and liked to toy a lot with machines and little toys. After the radiation he started changing form a quirky guy with an interest with mechanisms to a more "stoic" type that rejected most interaction with other people. He started to think he could only trust a few people, those being his sister and his best friend Mir and thought they should avoid other people. When they found the dome and started living there a lot of people would come in and he felt bad with them. He wasn't ill willed at first and helped everyone he could, but that started not to suit him. In the end he decided to start taking profit from them in any way he could. He still had some humanity left though, he didn't want to harm anyone in any way if he could avoid it, he used mostly psychological "warfare" to get what he wanted from them and still does now. The others don't look up to him for it and he knows, but he's too hot headed now to change his ways but makes sure to consult them to make sure he doesn't go too far. He still sees himself as a good person after all, and wants stay that way, as delusional as it may be.
- Mir: Mir is an Art student that became friends with Amy and Tomy before the radiation. All her life drawing, sculpting and doing artistic work for others while being under payed and payed with "exposure" has left her tired with the world at large. She's in a state where she just wants to be alone and handle herself in her solitude. If she could be alone forever she probably would, in those regards probably the radiation was a blessing to her, as now she can mostly relax in the dome while doing some woodwork and repairs now and then. She's obviously aware of Tomy's business and while most of the time she isn't bothered by it because of her tranquil life, some other times likes to boycott him, as she doesn't want him abusing of others for his profit. In the end she still finds him his friend, but as time passes she gets more disgusted with him. She was the one that found the dome and suggested starting a life there.
- Pris: Pris is the main character of the game, she didn't have a work before the radiation, she started working out of high school and continued to do so until one of her contracts ended, while looking for a new job suddenly she didn't need a new one anymore. She took care of her sister most of her life and feels really attached to her. She started working as a package deliverer for the site they lived in so she could stay there with her sister, though her sister wanted to go with her anywhere. She's skilled and resourceful and chooses to avoid violence at all costs but won't hesitate to protect her sister.



Figure 1: A Fir Tree modeled with blender and texturized with Substance painter

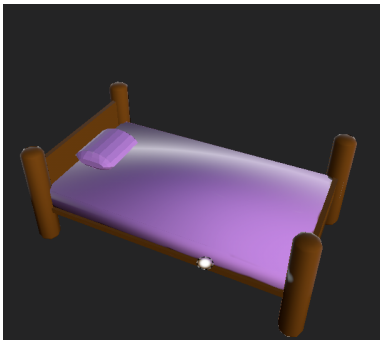


Figure 2: A bed modeled with blender and texturized with Substance painter

4 Art and animations

4.1 Models and Textures

A fair share of 3D models have been designed for the construction of this project to represent the characters, buildings, inventory objects and other details and "atrezzo", these are some examples:

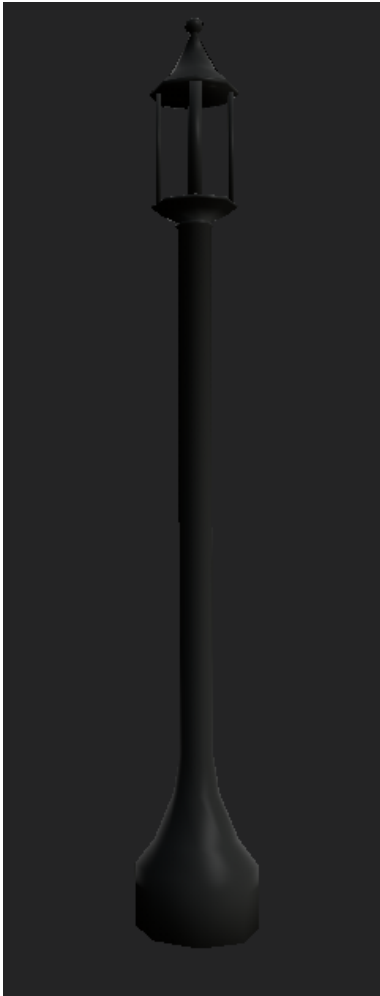


Figure 3: A street light modeled with blender and texturized with Substance painter

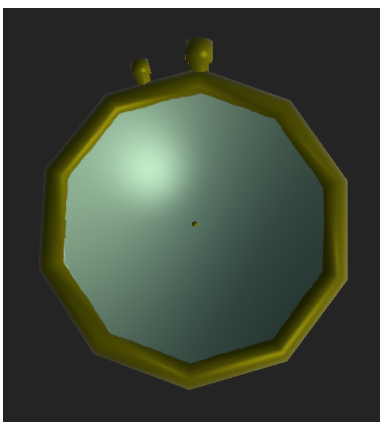


Figure 4: A pocket watch modeled with blender and texturized with Substance painter



Figure 5: Some shrooms watch modeled with blender and texturized with Substance painter



Figure 6: The main character modeled with blender and texturized with Substance painter

4.2 Animations

Most of the animations used in this project are used to represent the characters (both NPCs and the player) actions. All this animations represent humanoid movement and are made using the tool Mixamo [9], which is a tool that allows to create faster animations in humanoid models in an easier way.

4.3 Game World

After all the assets have been created and properly textured, they are placed in the Unity project, on top of a terrain. With this we can simulate the Game world within the project. Using the "Occlusion Culling" tool provided by Unity we can avoid render objects that are hidden by other objects in the scene, that way the game can run more smoothly with more objects on screen. This method is used by setting the objects to be affected by this tool as "Occluder static" in their properties. Unity also uses by itself a technique called "Frustum Culling" which avoids rendering anything that is outside the view of the camera. You can see the game world as seen in the game in Figure 7.

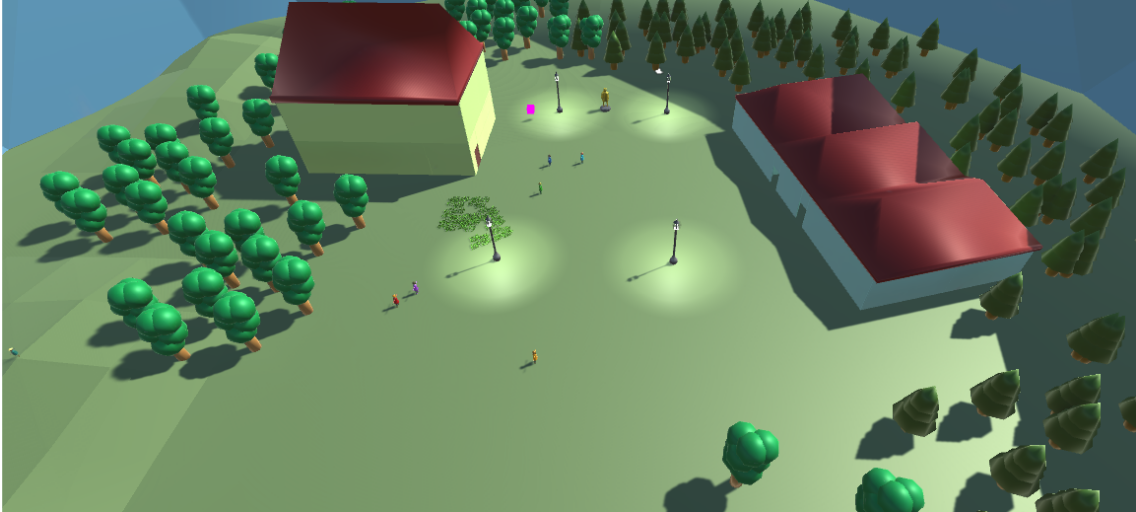


Figure 7: The scenario of the project as it is seen in the game

5 Technical Specifications

5.1 System requirements and performance

This project has been developed with a computer with this components:

- CPU: I5-4690 3.50 GHz
- Graphics card : NVIDIA GTX 960 4GB VRAM
- RAM 8Gb DDRM4
- Hard Drive: SSD 120GB - HDD 2TB
- OS: Windows 10

On this computer, the game runs smoothly and with a consistent frame rate without having to make any special configuration.

5.2 Repository

All the game assets can be found in this Google Drive folder, the repository used during the development has been the Collaborate cloud provided by Unity Services incorporated in the engine itself.

<https://drive.google.com/open?id=1E3FU0H7NsztXRJA6ektUns7LQQxdFRLD>

5.3 Fuzzy Logic

This project will feature a Fuzzy Logic system control that will manage the paths in the story that the player can get in a play-through. In this section we will disclose how the Fuzzy Logic works, how we use it in this project and why.

We will start by defining what a Fuzzy Logic is: Fuzzy Logic is a technique of Artificial Intelligence that allows to take decisions. The key feature of this type of AI is its capacity to handle imprecision. We should now start to define the inner workings of that imprecision, how it works and how it is translated into a program.

We need to define the concepts of uncertainty and imprecision; uncertainty as opposed to certainty is something we are not sure of. We don't know for sure if something is going to happen and therefore we represent that uncertainty as a probability. Imprecision is when we are presented with a problem which is difficult to evaluate and has a diffuse answer. As such, these two concepts combine to create a problem we need to solve, how do we know what to do in an uncertain and imprecise situation? That's why we use Diffuse or Fuzzy Logic, which is made to solve problems that the common Boolean logic could not solve with the right precision.

The difference between Boolean logic and Fuzzy logic is the use of Diffuse Sets and Belonging degrees. In the standard Boolean logic a value is true or false and cannot be anything else. Fuzzy Logic uses Diffuses Sets, instead of representing the problem as a function of true or false we represent it as a function with different Belonging degrees. It is not just true or false, but its' represented as a function. In the x axis we have the value that we need to evaluate to find our answer, and on the y axis we have a value between 0 (false) and 1 (true), and it is those values that the Fuzzy Logic needs to evaluate to produce a response to the input.

These functions are called Functions of belonging, they can be represented and different type of functions, with different curves. But the treatment is always the same, in need to evaluate a value of the function we will get a percentage, like 0,6, that tells us that tells us that value is 60% true and 40% false. But that's not all, to explain better how these functions work we need to define their areas, their truth values and linguistic variables.

A Function of belonging is defined by 3 main parts: the height, the support, and the core.

Height

The height is the maximum degree of belonging obtainable. This value tends to be 1 to better be represented as a percentage.

Support

The support represents the set of truth values that are greater than 0 and can be represented as a percentage of true and false (such as 30% true and 70% false i.e).

Core

The core is the set of values which their degree of belonging equal to 1 and therefore are 100% true.

A linguistic variable is a term we use to define what we are studying on the x axis. If we need to evaluate temperature in Celsius degrees for example the linguistic variable will be the term temperature. A linguistic value or truth value are the terms comprised inside the linguistic variable which defines in which state they are. Following the previous example, the linguistic values for temperature could be: cold, warm and hot. Each value is overlapped with the others of the same linguistic variable in the function so we can analyze to which value an input belongs.

When two values overlap and we need to decide into which value a standard falls we start using fuzzy logic operators. In the ordinary Boolean logic we have OR, AND and negation operators, this operators are also used in fuzzy logic, but work a little bit differently. First the negation operator defines the Fuzzy Set that isn't that particular value on some degree of belonging. For example, "not hot" is all the places in the set that are not 100% hot. Then the OR and AND or union and intersection: Given two Fuzzy Values we can apply these operators to check certain sets, OR gets turned into a MAX operation, where you get all the max values of the two sets. AND on the other hand gets turned into a MIN operation, where you get the minimum values of the place the two sets collide. Upon these operators we can build Fuzzy Rules to make decisions.

In Boolean logic we only need to evaluate if a condition is true or false to act, but that's not the case with the rules of Fuzzy Logic. In a Fuzzy logic instead of using numeric values we use the Fuzzy Values to create a condition in the sense of: "x linguistic variable IS x* linguistic value". "x" being i.e temperature and "x*" being cold, so the term "IS" being an operator of equality. In a Fuzzy Logic we can define different linguistic variables to evaluate, such as Light, temperature, weather, etc. With 3 linguistic variables we can make conditions of the sort of "IF (linguistic variable a IS linguistic value a* AND linguistic variable b IS linguistic value b*) THEN linguistic variable c IS c*". The rules on how the Fuzzy system acts in each case are set by us detailing what should be the decision with the intersection of different linguistic values in the different variables.

But all that sounds a little bit like strict rules quite in the vein of Boolean Logic, that's why for a Fuzzy System we use the phases of Fuzzification and Defuzzification. We need to establish in a Fuzzy condition how true that condition is given the Truth Values that we are analyzing, as these values point to percentages of belonging to a value. Given two Truth Values for two different Truth variables with degrees of belonging of 75% and 25% we will need to Fuzzify those values to get a Truth statement .

Fuzzification consists in applying certain rules to our sets, first we reduce the height of the Fuzzy Set for each of our possible rules to the percentage of belonging such as 25% as stated above. Then we proceed to reduce the width of the resulting height to the width of the Core. We apply these operations for each rule that is a bit true in our set of rules. Once we got all the pyramids that define the results of those rules we put them together and Defuzzicate them.

Now we need to take a decision based on those values, a precise numeric decision.

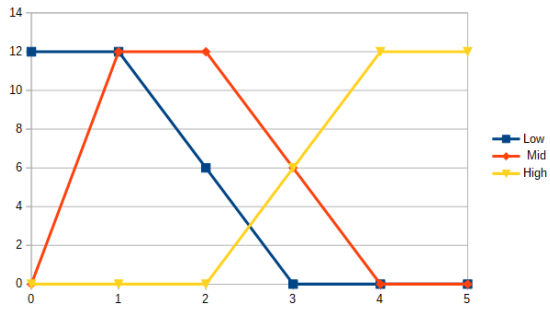


Figure 8: Visual representation of the Linguistic variable "object"

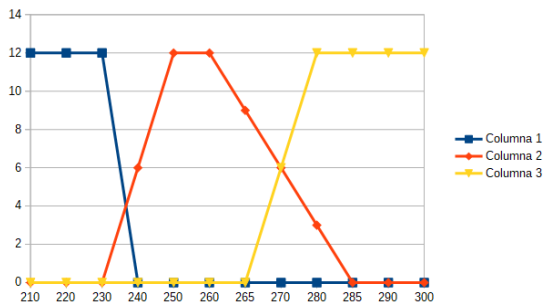


Figure 9: Visual representation of the Linguistic Variable "time"

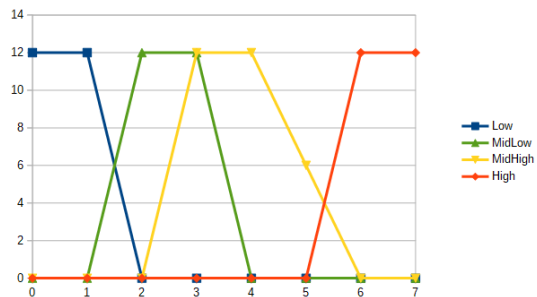


Figure 10: Visual representation of the Linguistic Variable which will be the output

In order to do that we need to defuzzicate the set. There are several types of Defuzzification, two of them are as Median Defuzzification and Barycenter Defuzzification. Median Defuzzification consists in calculate the median of the highest value and apply the resulting Truth Value as a result. Barycenter Defuzzification consists on obtaining the barycenter of the obtained form by decomposing the form into a series of simpler forms to and do a mathematical operation that will get us the exact point. And as with the Median Defuzzification we apply the resulting Truth Value as a result.

That's the end of the process of Fuzzy Logic. We starts with a set of variables that we needed to study and by the end we get an exact value as a result by applying sets of rules and operations that gets us to a more specific answer that the traditional computer logic.

We want to apply this kind of Logic in this project to create a specific kind of narrative one that isn't set on exact conditions but more on a Fuzzy AI for the characters that provides different answers based on the inputs of the player in the game. We think this is an interesting approach to an interesting and not all that explored kind of storytelling that can be more engaging to the player. Fuzzy logic is a technique in A.I. that is well used in video games, however in most games these techniques are applied to create A.I. or controllers to the different mechanic systems in the game rather than in the narrative. There are a few games that have been known for using AI as a resource for their narrative, one example could be 80 Days [10] but it doesn't use Fuzzy Logic as the AI technique for its narrative. So AI being an underused resource for narrative in games and Fuzzy Logic in concrete seemingly never been used in this fashion we've decided it would be an interesting idea to use it in this project.

The way our project will handle this Fuzzy AI and and at which point it will act is by using it in one situation for each character. Fore each character we will have a Flowchart that comprises the Sets of text that character can say to us, these sets can be divided by stages according to the time. At a certain stage the Fuzzy Logic will check for every character the amount of objects currently in possession by the player, the amount of dialog (measured by blocks in the flowchart) read by the player (in total and relevant to that specific character) and the time stamp the player read a specific dialog of that character. Each of this factors will be represented as a Fuzzy Set consistent of 4 linguistic values representing affinity to that character ("low", "mid-low", "mid-high", and "high").

In figure eleven we can observe the code used for the Fuzzy Logic in the project. Linguistic Variables "objetos", "numBlocks" and "tiempoLec" are the input variables to this logic, while "FlowchartValue" is the output variable. For each of these variables, below their initialization we set their Linguistic Values using different types of Fuzzy Sets. After the initialization of all Fuzzy Variables there is the initialization of the Fuzzy Rules of the system, those are the rules that the system will follow to get a result.

In figure twelve we see the method "Resolver" which is invoked to solve the Fuzzy Logic and get the a value that will then be used to determine the path of the story. This method receives the values that we have for each linguistic variable at the moment and enters them into the system and then returns the result to the caller for its use.

```

LinguisticVariable objetos = new LinguisticVariable("Objetos", 0, 50000);
objetos.AddValue(new LinguisticValue("Low", new LeftFuzzySet(0, 50000, 1, 3)));
objetos.AddValue(new LinguisticValue("Mid", new TrapezoidalFuzzySet(0, 50000, 0, 1, 2, 4)));
objetos.AddValue(new LinguisticValue("High", new RightFuzzySet(0, 50000, 2, 4)));

/*LinguisticVariable pos = new LinguisticVariable("posesión", 0, 50000);
pos.AddValue(new LinguisticValue("No", new LeftFuzzySet(0, 50000, 0, 1)));
pos.AddValue(new LinguisticValue("Yes", new RightFuzzySet(0, 50000, 0, 1));*/

LinguisticVariable numBlocks = new LinguisticVariable("Bloques", 0, 50000);
numBlocks.AddValue(new LinguisticValue("Low", new LeftFuzzySet(0, 50000, 2, 3)));
numBlocks.AddValue(new LinguisticValue("Mid", new TrapezoidalFuzzySet(0, 50000, 1, 3, 5, 6)));
numBlocks.AddValue(new LinguisticValue("High", new RightFuzzySet(0, 50000, 4, 6)));

LinguisticVariable tiempoLec = new LinguisticVariable("Tiempo", 0, 50000);
tiempoLec.AddValue(new LinguisticValue("High", new LeftFuzzySet(0, 50000, 230, 240)));
tiempoLec.AddValue(new LinguisticValue("Mid", new TrapezoidalFuzzySet(0, 50000, 220, 250, 260, 285)));
tiempoLec.AddValue(new LinguisticValue("Low", new RightFuzzySet(0, 50000, 265, 280)));

LinguisticVariable FlowchartValue = new LinguisticVariable("Flowchart", 0, 50000);
FlowchartValue.AddValue(new LinguisticValue("Low", new LeftFuzzySet(0, 50000, 1, 2)));
FlowchartValue.AddValue(new LinguisticValue("MidLow", new TrapezoidalFuzzySet(0, 50000, 1, 2, 3, 4)));
FlowchartValue.AddValue(new LinguisticValue("MidHigh", new TrapezoidalFuzzySet(0, 50000, 2, 3, 4, 6)));
FlowchartValue.AddValue(new LinguisticValue("High", new RightFuzzySet(0, 50000, 5, 6)));

systemAmy.addFuzzyRule("IF Bloques IS High THEN Flowchart IS High");
systemAmy.addFuzzyRule("IF Bloques IS Mid AND Tiempo IS High THEN Flowchart IS High"); ;
systemAmy.addFuzzyRule("IF Bloques IS Mid AND Tiempo IS Mid AND Objetos IS High THEN Flowchart IS High");
systemAmy.addFuzzyRule("IF Bloques IS Mid AND Tiempo IS Mid AND Objetos IS Mid Then Flowchart IS MidHigh");
systemAmy.addFuzzyRule("IF Bloques IS Mid AND Tiempo IS Mid AND Objetos IS Low THEN Flowchart IS MidHigh");
systemAmy.addFuzzyRule("IF Bloques IS Mid AND Tiempo IS Low AND Objetos IS Mid THEN Flowchart IS MidLow");
systemAmy.addFuzzyRule("IF Bloques IS Mid AND Tiempo IS Low AND Objetos IS Low THEN Flowchart IS MidLow");
systemAmy.addFuzzyRule("IF Bloques IS Mid AND Tiempo IS Low AND Objetos IS High THEN Flowchart IS MidHigh");
systemAmy.addFuzzyRule("IF Bloques IS Low AND Tiempo IS Low THEN Flowchart IS Low");
systemAmy.addFuzzyRule("IF Bloques IS Low AND Tiempo IS Mid AND Objetos IS High THEN Flowchart IS MidHigh");
systemAmy.addFuzzyRule("IF Bloques IS Low AND Tiempo IS Mid AND Objetos IS Mid THEN Flowchart IS MidLow");
systemAmy.addFuzzyRule("IF Bloques IS Low AND Tiempo IS Mid AND Objetos IS Low THEN Flowchart IS Low");
systemAmy.addFuzzyRule("IF Bloques IS Low AND Tiempo IS High AND Objetos IS Mid THEN Flowchart IS MidLow");
systemAmy.addFuzzyRule("IF Bloques IS Low AND Tiempo IS High AND Objetos IS Low THEN Flowchart IS Low");
systemAmy.addFuzzyRule("IF Bloques IS Low AND Tiempo IS High AND Objetos IS High THEN Flowchart IS MidLow");

```

Figure 11: Code example of a Fuzzy Set in the project

```

public float Resolver(int Objetos, int bloques, float tiempo)
{
    systemAmy.SetInputVariable(objetos, Objetos);
    systemAmy.SetInputVariable(numBlocks, bloques);
    systemAmy.SetInputVariable(tiempoLec, tiempo);
    float result = (float)systemAmy.Solve();
    return result;
}

```

Figure 12: Code example of a Fuzzy Set resolution in the project

To defuzzicate the set we use the Barycenter Defuzzification explained above. Once we have obtained an exact value out of the Fuzzy System we will evaluate it in the dialog flowchart each time we need that information to decide the proper dialog to show as explained in the Dialog system section above. The result of the fuzzy system for each character will only be calculated once for simplicity reasons.

5.4 Dialog system

In order to do the Dialog System of this game I have used the Fungus[3] Plugin for Unity. This Fungus tool allows to display dialog in a quick way without having to create a complex dialog scripting within the project. However, since this game features a branched path narrative driven by time and a Fuzzy Logic there was need to do specific things to make it work.

In order to represent Dialog Fungus works using Flowcharts. You can have several Flowcharts in one project, in this one in particular we're using one Flowchart per Character (NPC) that you can talk. Each NPC therefore has their own Dialog separated from the other NPCs. Fungus sets the text on screen following that flowchart, from start to end taking on account variables here and there to set up the path of the flowchart that it must follow. Since in this project the dialog isn't decided by just talking to each character, but the time of day, we must set up the flowchart in a different way. The way it is set up there's always a Block of the flowchart that works as a bone, the first step that Fungus checks. From there the Flowchart splits into 6 smaller flowcharts, one for each interval of time the game works with to decide the proper Dialog. Fungus then checks the Day and Time variables used in the project to decide which set of blocks of Dialog it should be going to. That way when you talk to any character Fungus will first go to the "bone" Block and then follow to the proper one without the player noticing.

Since for each interval of time the game works with there can be different sets of dialog the game should be displaying we need to do another operation then. Some of this operations are simple, such as checking a Boolean variable to see if a certain object is in the possession of the player. Or just different blocks of texts the player can choose from by clicking on them and then looping. The important operation in all of this, however, is the Fuzzy Logic one. The inner workings of the Fuzzy Logic will be explained below in its own section, however to try to sum it up, each character's flowchart has a point in which it divides into 4 different branches. Which of those branches goes the flowchart to will be decided with Fuzzy Logic. This Logic will take into account the number of objects the player has in possession, whether they do or do not have a certain relevant object to one character, the number of dialog that the player has been able to view beforehand and at which time the player has been able to view a certain dialog for each character (if they did read it). Using Fuzzy Logic we will receive a float number that we can then evaluate in the flowchart to decide where we go from there.

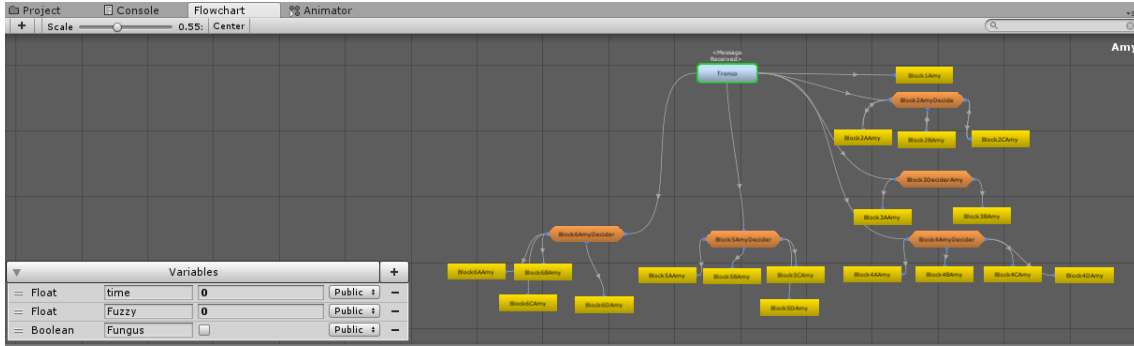


Figure 13: An example of a Fungus Flowchart in the project

5.5 NPCs AI

The behavior of the NPCs in this project is not very complicate, but it goes as follows. Each NPC has an schedule that is created with an Scheduler class. Each NPC has a number of "tasks" within that schedule that are described by time, place and action. With that schedule the AI of the NPC proceeds to fulfill that schedule, it checks the time each task must be performed and sorts it out by time so it is easier to be accessed. The scheduler sets the task that the NPC should be performing at that time and sends them to the position it should be performed and once the character reaches said position it starts playing its corresponding animation.

For this task we use a class structure with ScheduleEvents that are grouped in ScheduleEvent Collections and sorted for the use in the NPCs algorithms. An ScheduleEvent is a SerializedObject that can be created within the class AllSchedules for its use and access by the NPCBehaviour script editor in the scene. This class has the information on time and place the NPC should be in that Event. The NPCBehaviour uses a collection of ScheduleEvents with the class ScheduleEventColection, with the editor the user can input as many ScheduleEvents as they want in that collection selecting from the ones that are already created within the AllSchedules serialized object. After the user has put all their desired ScheduleEvents in the collection the class sorts them out by time to make their access easier.

If by chance the character in question has 2 routes that they can follow depending on the characters actions, the tasks that belong to those ramifications are marked as belonging to that path. Once the scheduler reaches the point to check one of those tasks it contrasts the path of the schedule and the path the character is set up to be doing right now to choose the correct path. This paths are represented as an enumerator in which the path by default is called "A".

5.6 Day/Night cycle

This project features a Day and night cycle in which characters can go to sleep, the actions of the characters are decided by the time of the day and the sun sets and rises. The NPCs behavior following this cycle is explained above in the NPCs AI section so this section is mostly about the illumination that takes place in this cycle. The illumination in this game

comes from a sphere that makes the role of a lamp, or a sun, this "sun" has a light source that illuminates in all directions placed in that sphere. This sphere keeps rotating around the map simulating sunsets and sunrises. This sun has its own script that updates its rotation value respect the center of the World with each update in the game time. It must be noted that since the game can be paused while talking to NPCs the sun will pause at those times as well as all other characters to avoid causing problems to the player.

5.7 Reactions and Conditions

In order to codify the interactions between the player and other objects (or NPCs) in a more organized manner this projects uses a series of classes that let's us dictate in an easy way the reactions that occur when interacting with and object in the game as well as set the Conditions for that Reaction to happen. This is made using the Conditions, ConditionCollection and AllCondition classes. Similar to how the ScheduleEvents scheme works, these classes contain the conditions that need to be fulfilled to react, each interactable can have several condition collections that collect the conditions relevant to that interactable. One condition collection can have several conditions and if all of them are fulfilled the class calls to the reactionCollection that the user has deemed to be fulfilled. This reaction Collection can have several Reactions in it, each reaction can be of a different type depending of the action that needs to be performed. In this project for example we use the PickupItem reaction in order to store items in the inventory and the Fungus Reaction, to start the dialog system. When an item is picked up it also sets the condition for having that object in the inventory to true. These reactions and conditions make use of the Custom Editors in unity that are explained in the next section to make its usage more clean and faster, so instead of having to write several scripts for each interactable we can have classes that manage all that and just select in the editor what we want the interactable to perform.

5.8 Custom Editors in Unity

Unity 3d features a tool that allows the user to modify within certain limits the editor of certain objects on the Inspector. Using this tool the user can make the task of editing the setting of objects on the scene on serialized on the project folders a lot more friendly and faster. This project uses this tool to create the editor settings of a series of different objects and classes, some of which can be serialized, to make the creation of this objects easier.

Editor classes in Unity always come in pair with their target class, a class "ScheduleEventEditor" must always have a target "ScheduleEvent" so it knows the class which it will be modifying its editor. Editor classes must specify that they are of type editor in the header with "[CustomEditor(typeof("classnamehere"))]". These classes can also specify SubEditors, which is a very useful resource that is used in this project. On the header of the editor class the user can specify subEditors of that editor that will be drawn in a subcanvas of the editor. The user must specify both the Editor class they wish to make a subEditor of and its target class as subEditors with the instruction "EditorWithSubEditors<AEditor, A>". An editor class can have various subEditors in it. Furthermore An editor of an object can have several EditorTypes, different editor setups in different spaces

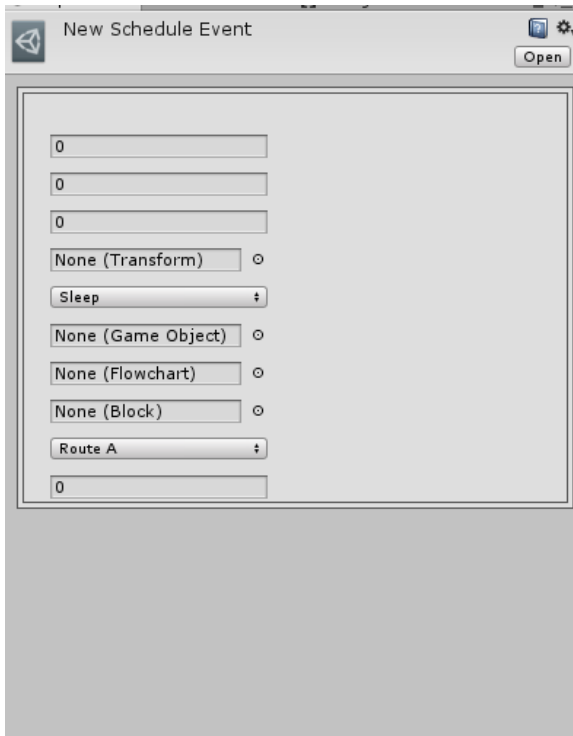


Figure 14: An example of a Serializable object editor in the project

of the Unity Editor. For example, the user can have a Serialized object that is child to another Serialized Object and this same object can be instantiated in a scene hierarchy of the project, this object can have an EditorType for when it is called from the hierarchy, accessed in its parent object editor and itself. This way the user can choose what to show in each case of an object and relate relevant information to what the user needs to edit in those places making the creation process a lot easier.

In the end this project used editors and subEditors for All the Conditions classes, the Reactions classes as well as the ScheduleEvent Classes, that includes the Objects AllScheduleEvents and the Collections that are used for the NPCs behaviour. The use of different types of editors are used for all Serializable type objects, like Conditions and Schedule Events.

Editors are drawn in the InspectorGUI method and the ExpandedGUI (if the user wishes to have an editor that can be expanded). In this method the user can use a series of methods provided by unity in order to draw into the canvas, using indent levels and vertical and horizontal groups to pair the Fields in a manner that the user sees fitting.

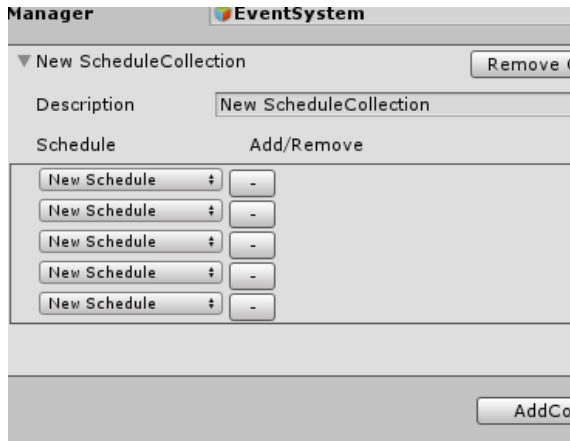


Figure 15: An example of a custom editor in the project

6 Results Achieved

6.1 Accomplished tasks and real timing

At the beginning of the project several objectives were proposed for this project as well as a time expected to get them done, in the end these are the results gotten as well as the approximate time poured into them:

- Technical proposal creation - 4h
- Formation on Fungus and the different ways of branching narrative -30h
- Plan and design a night-day cycle -16h
- Character modeling -16h
- Environmental modeling -36h
- Game narrative development -40h
- Implementation of game characters and their routine -32h
- Implementation of Fuzzy Logic for the narrative system -25h
- Implementation of the dialog system and events driven by the player actions -24h
- Finalize the actions and endings of the game -20h
- Testing -12h
- Project memory creation -30h

7 Conclusions

I think the objectives of this project have been met. While the project was in development I improved some skills in the different areas used in developing the project. Some of these skills include: scripting and AI algorithms, narrative design, 3d modeling and painting, as well as some game design.

The project development was not bump-less and it took longer than expected. However, I think the requirements and initial expected results have been met. The bulk of complications for this project were due to the Fuzzy Logic system and its implementation with the narrative. To make a narrative design that holds together even in the face of narrative branching paths and an AI that manages those branches is a more difficult path than it was originally expected. In the end I think the result was satisfactory, I learned a lot while doing it and how to work around the problems that can spur from branching path narratives.

A Script

A.1 Summary

You and your sister have a package to deliver to another site when you get caught in acidic rain and end up in another village, the people there lock up your sister in another room and make you think she's missing. They will let you go in 4 days so you can go empty handed to the delivery place and have them think you lost the package in some accident while they try to retrieve the object with your sister and force it open.

A.2 Character 1: Harris

- Block 1 Harris:

Pris: ...Hello?

Harris: Oh...hi, so you're awake at last

Pris: Umm, who are you?

Harris : Oh, sorry, that was rude of me, my name is Harris, I serve as a Doctor in this settlement, I'm the one who healed you. We found you lying outside you see, the toxins in the air were spreading through. But you're okay now, great, huh?

Pris: Uh, yeah, thank you, I appreciate it, name's Pris, btw...So this place of yours is uhhh.

Harris: Oh, don't worry about it, it's just a place we found and made ourselves in, seems probably a refuge, they had a dome to protect it from the radiation, you see.

P: Oh, cool, so...can I leave?

H: I wouldn't do it, to be honest, we found you in a huge cloud of radiation, it won't dissipate in a few days, so I suggest you make yourself at home.

P: But I have to deliver something in another settlement. . .

H: What was that?

P:...Nothing, have you seen anyone else outside?

H: No, you alone, were you accompanied?

P: Nah...don't mind that.

H: 'kay, go meet the others, I'm sure they will be happy you're alright.

P: Thanks, bye.

- Block 2A Harris:

Pris: I want to ask you something.

Harris: Go on.

P: How did you all get here? How did you find this place?

H: Mmmm, I guess it's a long story, Mir found it I think some time ago, we were looking for a secure place to stay and build a settlement, Mir went on and found this place so we stay here now, there's not much more to say I think. Maybe ask Mir about it.

P: Okay, you said you wanted to build a settlement but there's only 4 of you here right now, that doesn't sound much like a settlement, does it?

H: Well, we did want to build a settlement, but I guess things never go along, we had a few visitors like you, but none stayed, it's a shame, really, I kinda wanted for this place to be more vivid.

P: Well, you have Mir, Amy and Tomy, that isn't that bad, right?

H:I wonder. . . .

- Block 2B Harris:

P: So you say you don't go along with your partners?

H: Well, that's not it, really, it's just. . . I don't know, it's complicated, okay?

P: Well, I'm all ears, tell me.

H: ...well, what can I say, sometimes I feel like our relationship isn't that of friends but that they just have me here because I went to med school, the only thing I do is treat patients and I rarely feel rewarded, patient after patient and they don't even give me thanks, it's like I'm being used.

P: ...sorry to have been a bother then. . .

H: Oh, damn, sorry, I didn't mean that, you know it's just that I wish they appreciated a bit more my help, sorry.

P: ...No problem.

- Block 2C Harris:

P: So, you mentioned you were in med school? What was your life before, well, you know?

H: Oh, yeah, I did attend med school for like 3 years and I dropped out, I worked as a bartender afterwards until now, that I have to get back to the things I learned in med school it seems.

P: Damn, a bartender? I hadn't pictured you like one.

H: People usually don't want to think that those that healed them can also get them drunk. . . and I don't look like one, let's admit it.

P: That's more like it. So, were you a good bartender?

H: Better than a doctor for sure, I don't want to set myself too high, but I prepared good drinks, I liked that job, and they paid well, what else could you ask for?

P: A good Martini?

H: Huh, so you want to taste my drinks? I think there was a set of bottles somewhere around here, maybe I'll prepare you one later.

P: Great, can't wait.

- Block 3A Harris:

Pris: Hey, I found some booze around the house.

Harris: Oh? Let me see. . . Well, I could prepare something with these, yeah, you interested?

P: Are you joking? Of course I'm interested, I want to see those skills of yours.

H: Well, I could be a bit rusty, just so you know.

P: That's why I'm expecting it!

H: Well, thanks for making fun of me.

P: Haha, don't worry, it's just a drink, there's not much that could go wrong.

H: Yeah, just in case, could you wait till I got it done? Come back later.

P: Oh, really? I can't watch you making it?

H: Nope.

P: ...fine.

- Block 3B Harris:

Pris: You said you were a bartender, right?

Harris: Yep, why? Did you find booze?

Pris: Nope, I was just wondering about something.

Harris: Oh, and what's that?

Pris: Whether I should have done something else with my life or what, maybe I wouldn't be in this situation if...

H: I mean, there's not much you could do to avoid this, right, ending in our shelter.

P: ...maybe? Maybe I shouldn't have become a package deliverer...

H: ...don't think too much about it, there's not much you can do about it now. I mean I wonder about my life decisions all the time, but the world's fucked anyway, so... who cares?

P: ...Thanks, that wasn't helpful at all.

H: Here to help.
- Block 4A Harris:

Pris: Hey, Harris, what's the deal around here?

Harris: Meaning?

P: Well, how do you manage this place? You must do something.

H: Well, If you must know, we sell human parts to whoever wants them.

P: ...Nice joke

H: I don't know what you expect me to tell you, actually, we forage a bit when the clouds are gone, and we trade with whoever might come here sometimes... if they ever find this place, obviously.

P: That's it?

H: Yeah, just leave it there, please.

P: ... Okay?
- Block 4B Harris:

Pris: Hey, Harris, what's the deal around here?

Harris: What?

P: The camp, the people, those things, you know.

H: You could ask them, you know, not just come to me every time.

P: What if I want to ask you?

H: You just want to bother me... we forage stuff mostly to subsist, and we also trade with whoever comes here

P: Oh, can I trade with you then?

H: Do you have anything to trade?

P: Not right now.

H: I don't think there's business to be made here then.

P: Don't you expect something for patching me up though?

H: Don't worry about it.
- Block 4C Harris:

Pris: How's it going, Harris?

H: Nice, I guess, why do you ask?

P: ...Listen, I want to pay you up for helping me, so I think I want to help around a bit with the camp

H: Huh... don't worry about it, there's not much you can do around here now anyway, with the doors closed we can't forage, after they open, then maybe.

P: Do you expect me to stay after the radiation stops?

H: Well, I don't know, why not? At least for awhile, what will you do out there anyway?

P: ...I... don't know, maybe I'll think about it.

H: Well, take your time, the offer will still be up.

- Block 4D Harris:

Pris: How's it going, Harris?

H: Nice, I guess, why do you ask?

P: ...Listen, I want to pay you up for helping me, so I think I want to help around a bit with the camp.

H: Huh... don't worry about it, there's not much you can do around here now anyway, with the doors closed we can't forage, after they open, then maybe.

P: Do you expect me to stay after the radiation stops?

H: Yeah, why not? At least for a while, whta will you do out there anyway?

P: Well, maybe I'll think about it, maybe I have something to so here too.

H: That's the spirit! Anything that can lift some workload off me is welcome, to be honest.

P: ... You're painfully sincere.

H: That's a good thing, right?

P: Yeah, sure.

- Block 5A Harris:

Pris: Hey, umm, Harris?

H: What?

P: You didn't notice anything strange while I was here, did you?

H: What, are you stealing from us or something?

P: I don't mean it that way

H: Well, everything is fairly normal I think, nothing did stand much to me, to be honest.

P: Are you completely sure?

H: Yeah, what should be wrong? You looknig for something?

P: No, I...nevermind.

H: Okay, sure.

- Block 5B Harris;

Pris: Hey, umm, Harris?

H: You want something?

P: Yeah, you didn't notice anything strange while I was here, did you?

H: What, are you stealing form us or something?

P: I don't mean it that way

H: Well, everything is fairly normal I think, nothing did stand much to me, to be honest.

P: ...Are you sure?

H: Yeah, what's wrong?

P: ...I was with my sister before I blacked out, and I'm worried about her, I mean,

she can handle herself, but...

H: ...I didn't see anybody else, sorry, but maybe you'll have more luck out there, when you can go out, of course.

P: ...Yeah, maybe

- Block 5C Harris:

Pris: Harris, I think we need to talk seriously now

H: Wow, were you not serious before?

P: ...Come on

H: Fine, fine, I'm all ears.

P: Did you see anyone besides me around the camp?

H: ...Not that I know

P: Are you being honest?

H: ...Yes

P: Well I would want to know where my sister is, and I find it very unlikely that she did not appear here given how we were traveling together.

H: ...I don't know anything about your sister, I swear.

P: ...Fine

- Block 5D Harris:

Pris: Harris, I think we need to talk seriously now

H: Wow, were you not serious before?

P: ...Come on

H: Fine, fine, I'm all ears.

P: Did you see anyone besides me around the camp?

H: ...I think we found you alone.

P: Come on, tell the truth, I think I earned it.

H: ...There was a girl with you.

P: Where is she?

H: We have her closed in a room, she's alright, don't worry.

P: She's my sister Harris, free her, please.

H: I can't do that and you know it.

P: Why did you lock her in the first place?

H: We use to trade with other camps, and that big package you had seemed to be worth a lot of money, we hoped to get her to talk, and one person is more manageable than two.

P: ...For fucks sake.

H: We're not so good at planning, okay?

P: I can see that, so what do we do? I don't want conflict right now, not in this state at least.

H: ...Let me talk to the others, maybe I can get you an offer that suits you.

P: My sister better be safe.

H: Don't worry about that, she has all her needs covered.

- Block 6A Harris:

Pris: I think the clouds will disappear soon.

H: Yeah, it will not be long till we open the gate, what are you going to do?

P: Leave I guess...

H: Are you sure? You looked like you were looking for something. . .
P: Yeah, my sister, but she can handle herself, I need to get to a place to deliver something, she'll follow shortly after I hope.
H: You seem worried tho.
P: Well, of course, she's my sister, but she can handle herself and I'm in a hurry, sorry for the bother all this time.
H: Don't worry, it was our pleasure, if you can, please come back, maybe we'll have somethin nice for you.
P: Thanks, hope to see you again.

- Block 6B Harris:

Pris: I think the clouds will disappear soon.
H: Yeah, it will not be long till we open the gate, what are you going to do?
P: Leave I guess. . .
H: Are you sure? You looked like you were looking for something. . .
P: Yeah, I lost my sister out there, but maybe she went on without me, maybe she's already at our place, I think it's the thing she would've done.
H: Well, I hope you find here there, really, she must be worried about you.
P: Yeah, I am also worried about her. . .
H: Well, I wish you have a safe travel, and if you want to come back our doors are open, we'll gladly welcome you.
P: Thank you, we'll meet again.

- Block 6C Harris:

Pris: Seems like we will be opening the doors soon.
H: Yeah, it was about time.
P: Yeah, the air was really nasty out there.
H: Have you though about what we talked about?
P: The thing about staying here?
H: Yeah.
P: I don't know, there's stuff I need to do out there. . .
H: But what if your sister was around here? There are other places to hide from the clouds in these woods.
P: Yeah, I thought about it. . .
H: Truth is, we need more people to help us here, it's not that we can't manage on our own, but it feels weird being so few people, and you seem nice enough, so.
P: Do you want to ditch all my things for you?
H: Just until you find your sister, what do you say about it?
P: Fine, it will not be too horrible, I think.
H: That's what i wanted to hear.
P: Well, let's better get to work...

- Block 6D Harris:

Pris: Seems like we will be opening the doors soon.
H: Yeah, it was about time.
P: Yeah, the air was really nasty out there, so, did you talk with the others?
H: Yeah, and we have an offer.
P: Well, i'll hear it.

H: Stay here and work with us.

P: What?

H: Well, were not violent, we just want your package to be able to trade, and you seem nice, I already offered you to stay, right? So we thought we could work together, You help us with the place a little bit and you get back your sister, no attachments, we just want the package anyway.

P: I need that package to get back to my place though.

H: You have seen this place, it's the best place to hide from radiation, and we are well accomodated, you'll be fine with your sister here, life's not too hard, you'll be free to do whta you want, and you have Amy and Mir to intervene. Come on, let's cooperate on this, please?

P: ...IF you set free my sister and let us be... okay, we can handle work, we'll decide if we stay longer afterwards.

H: Great, and umm, sorry about the trouble, you know how this things go...

P: Don't go looking for excuses now...

A.3 Character 2: Amy

- Block 1 Amy:

Pris: Hi, I'm Pris, Harris told me to introduce myself.

Amy: Good morning, I'm Amy, nice to see you're in good health, what do you plan on doing from now?

Pris: Huh?

Amy: Well, you can't leave the site for a while, so what are you gonna do around here? It's not like we've got a lot going around, but...

P: I guess I'll wander around for a bit till I can leave, I still have a lot to travel, so...

A: Well, that's cool I guess, if you need something just come to me, I'll try to help, it's been a while since we had a visitor after all.

P: Okay, will do...btw, have you seen anyone else around here lately?

A: Umm, besides us? No, I haven't seen anyone, is there something you looking for?

P: I guess, I'm starting to get a little bit nervous, but don't mind that. I'm sure it's alright.

A: Okay then, take care.

- Block 2A Amy:

Pris: Got any time? I want to ask you something.

Amy: Sure, whatever you want.

Pris: What are you doing here? Like, what relationship do you all have?

Amy: Relationship? Well, Mir and Tomy met in college and became friends, and Mir is my sister, if you can't tell, as for Harris... I don't know, Mir came back with him one day and we though it was nice to have comeone who knows a bit about medicine, so we stuck with him.

Pris: So Harris is the only one of you that you don't know for long?

Amy: That right, he's nice...most of the time, he mostly gets annoyed when he has to work, but anyway.

Pris: Seems strange you 4 are all alone here.

Amy: Well, we tried to get some people over time, but none stayed so, us 4 it is, I

don't complain tho, it is nice to not have a lot of people bothering you.

Pris: I'll make sure to leave you to it soon enough then.

Amy: Don't say that.

- Block 2B Amy:

Pris: So, how's Mir as a sister, if I may ask?

Amy: How? Mmmm, we've always been kinda close, so there's that, to be honest, we're both kinda different, but we support each other. We have to, I guess, haha.

Pris: Well, in this times...

Amy: It's funny that you ask actually, because I never really thought about it, I don't think that much about my relationship with a sibling and all that, it is like it is, do you have any siblings?

Pris: Uhhh, yeah, remember when I asked you if you found anyone besides me outside? That was my sister. She was with me.

Amy: Oh, hell, sorry to hear about that, I hope she's okay, did you too get along?

Pris: Yeah, she's a bit quirky, but we get really well.

- Block 2C Amy:

Pris: So, what did you do before all this shit went down?

Amy: I consider myself some sort of herbologist, a plant enthusiast, I spent most of my time growing plants, flowers and mushrooms, did terrariums and sold them.

Pris: Wow, does that pay much?

Amy: Well, not really, but I like it so it was never such a bother as long as I can live of it.

Pris: Well, I envy how you can make money of your passion. I couldn't possibly do it.

Amy: Don't fixate yourself too much over it, we always put ourselves too much pressure to get a job and fulfill our dreams or whatever, but happiness never comes that way, it's better to not destroy ourselves over that.

Pris: I guess... you're right.

- Block 3A Amy:

Pris: So, Amy, you said you were a herbologist, right?

Amy: Yep, not a bad one either.

Pris: Well, I thought I'd give you something nice since rare plants are a sight nowadays...

Amy: Great! What did you get me?

Pris: ...A mushroom... are you familiar with them?

Amy: ...A mush... I'm not a mycologist...

Pris: Sorry, it's all I could find, I should have thought before hand.

Amy: Oh, nonono, it's me who's sorry, mushroom's fine, I have a book about them somewhere, I'll find if they're poisonous and I'll cook them if nothing else.

Pris: ...I'm really sorry...

Amy: As I said, don't worry too much about it.

- Block 3B Amy:

Pris: Hey, Amy, I have been thinking to gift you some plant, since you're a herbolo-

gist.

Amy: Oh... that would be great.

Pris: But I didn't find none.

Amy: ...Usually people don't tell other when they got no present for them, you know...

Pris: I mean, they're hard to find.

Amy: Yeah, I shouldn't have gotten excited, It's been years since I got plants that aren't mutated or terribly radiated, it's appalling

Pris: Sorry about that, I wanted to lift your spirits a bit and...

Amy: As I said, don't worry about it, I'm fine as it is, maybe in the future I'll get something nice, who knows.

Pris: Yeah... let's hope.

- Block 4A Amy:

Pris: So, Amy, what do you do here?

Amy: I manage our supplies mostly, and help forage when we can, need to know what's edible, after all.

Pris: Do you have a lot of experience with that?

Amy: Well, I think I manage, I know a lot of plants and stuff, so I mostly know what won't kill you if you eat it.

Pris: So no body has died eating something on your watch?

A: Not that I know! Care to be the first?

P: ...No, thank you

A: I was just jooeking, I wouldn't let you eat something poisonous, I'm not that kind of person.

P: I sure hope not...

- Block 4B Amy:

Pris: So, Amy, what do you do here?

Amy: I manage our supplies mostly, and help forage when we can, need to know what's edible, after all.

Pris: Do you have a lot of experience with that?

Amy: Well, you could say that being a herbologist has it's advantages. I don't know it all though, I recommend you don't eat something that I haven't labeled.

Pris: Oh, yeah, the food was labeled now thta you say it.

A: Yeah, it's easier to recognise what's safe to eat, with all this radiation out there is best to make sure what you're eating.

P: Seems bothersome.

A: Don't blame me for getting sick later then!

P: Yeah, sorry mom.

- Block 4C Amy:

Pris: How are you holding in this place?

Amy: Huh?

P: ..I was just asking what's up.

A: You have a weird way of asking things. I'm doing fine, I just ended classifying our food so you don't end up dying of poison, although sometimes I think that would be a good option.

P: ...Sorry to have bothered you.

A: Don't worry, I meant the other ones, not you, you're safe...for now...

P: Do you enjoy messing with me?

A: Oh boy, do I love it!

- Block 4D Amy:

Pris: How are you holding in this place?

Amy: Huh?

P: ..I was just asking what's up.

A: Sure, I'll answer you oddball. I just ended classifying our food so we know what's edible, don't eat the things with purple labels, I'm trying a new classifying system.

P: Are the purple ones bad?

A: They're the ones I don't know if it's safe to eat yet but that I don't want to throw away.

P: Oh yeah, I know thta feeling, like whe you eat a passed youghurt.

A: Yeah, passed youghurts, yeah, don't go eating those things yet though, it can give you worse things than gastroenteritis.

P: I have a very resilient stomach, you know?

A: Look, I don't want to be burying corpses, so you better do what I say.

P: Fine.

- Block 5A Amy:

Pris: Amy, can I ask you something?

Amy: Sure, why not?

P: What do you think will happen when we open the doors?

A: Uuuuh, what?

P: Well, will I be able to leave, and...would I want to?

A: What is this about? Are you nervous about leaving? Because you don't have to if you don't want, I can deal with the others if you want to stay.

P: It's not... It's more than that, sorry, I need to think.

A: Well, know that you will always have a place here.

- Block 5B Amy:

Pris: Amy, can I ask you something?

Amy: Sure, why not?

P: What do you think will happen when we open the doors?

A: Uuuuh, what?

P: I... I don't know what to do, I was supposed to head home with a package but I don't know what to do now, I'm afraid that I'll leave something behind if I leave.

A: ...Well, I'm not sure that I understand what you're saying, but... You can stay here, that's an option, you know?

P: Can I?

A: Yeah! If you're not sure what to do, why not staying for a while while you figure it out?

P: I, uhh

A: Think about it.

- Block 5C Amy:

Pris: Amy, can we talk?

Amy: Nah, sorry, I lost my ability to communicate with others.

P:The clouds will clear soon. I want to know whta to do then.

A: Okay, why are you phrasing it like I have a say in it?

P: I want you to help me.

A: Okay, how?

P: I'm looking for my sister, and a package she's carrying, and I have to deliver it to our home, but . . .

A: Oh, is she that person you were looking for?

P: Yeah.

A: Well, maybe I can help you out, you know?

P: I just wanted you to give me some advice. . .

A: Nah, I have something better for you, just you wait.

P: What do you mean?

A: Shhh, it's a surprise.

- Block 5D Amy:

Pris: Amy, can we talk?

Amy: Nah, sorry, I lost my ability to communicate with others.

P:The clouds will clear soon. I want to know what to do then.

A: Okay, why are you phrasing it like I have a say in it?

P: I want you to help me.

A: Okay, how?

P: I'm looking for my sister, and a package she's carrying, and I have to deliver it to our home, but . . .

A: Oh, you did mention you were looking for someone. . . hmmmmmm

P: Amy?

A: You know, I was getting a bit tired of this place, maybe we could...yeah, that would be nice.

P: Sorry?

A: I'll talk to Mir, and see what we can do, you don't worry about anything.

P: I'm lost.

A: Just leave it to me!

- Block 6A Amy:

Pris: It's almost time.

A: For what?

P: Opening the doors, duh.

A: Oh, yeah, I forgot

P: How do you forget about something like this?

A: I don't know, I make my life here, I don't really care all that much about the outside.

P: . . . Well, I think I must take a decision now.

A: Like I said, stay here, you can decide later, you can be my assistant, of sorts, I always wanted one of those.

P: Are you serious?

A: Yep, come on, just for a few days, it will be nice.

P: I, uhh, well, I think I have unfinished business here. . . I'll stay.

A: Nice, let's go tag that foood.

P: This will be a huge mistake, I know.

- Block 6B Amy:

Pris: It's almost time.

A: For what?

P: Opening the doors, duh.

A: Oh, yeah, I forgot

P: How do you forget about something like this?

A: I don't know, I make my life here, I don't really care all that much about the outside.

P: Yeah, that sounds like you, but don't you have a little curiosity about the outside?

A: Yeah, kinda, but unless someone suddenly wants to leave with me I don't care that much, I'll leave when I'm ready, and you should too. Forget of that package for a while, just you and me.

P: And your brother, and Harris, and Mir.

A: They can join if they want, come on, stay, it will be fun, better than the outside at least, you can figure out the rest meanwhile.

P: ...Fine, I think I need a little more time, this will do.

A: Yay!

- Block 6C Amy:

Pris: The doors wil open soon, won't they?

Amy: Yeah, they will, isn't that nice?

P: Yeah, what was that thing you were stoked about earlier? The surprise.

A: Huhuhu, you want to know now, don't you?

P: Yes, I do.

A: I know where your sister is, so you can stop worrying about what you're gonna do.

P: My sis. . . Wait, what? You knew where she was all along?

A: Yeah...kinda, Tomy likes to trade with visitors, you know, he though that package would have some goodies, and he needed someone who knows how to open it, soo. . .

P: You knew all along?

A: Yeah, it's not the first time that happens, don't worry, we don't harm anyone, and I made sure she was fine, sometimes you just have to roll with Tomy's bullshit, you know, but no more!

P: I'm gonna have a stroke.

A: Look, it's all fine, you can leave with her, i'll deal with Tomy.

P: Why are you doing this right now?

A: Hmmm, cause I don't like Tomy's behaviour, and I like you.

P: That's it?

A: Yeah, now get ready to leave.

P: I...Thank you Amy.

A: You're very welcome.

- Block 6D Amy:

Pris: The doors wil open soon, won't they?

Amy: Yeah, they will, isn't that nice?
P: Yeah, what was that thing you were stoked about earlier? The surprise.
A: Huhuhu, you want to know now, don't you?
P: Yes, I do.
A: I know where your sister is, so you can stop worrying about what you're gonna do.
P: My sis... Wait, what? You knew where she was all along?
A: Yeah...kinda, Tomy likes to trade with visitors, you know, he thought that package would have some goodies, and he needed someone who knows how to open it, soo...
P: ..you knew all along?
A: Yeah, it's been an ongoing thing for Tomy, we don't like it, but we deal with it, what can I say, oh, but don't worry, we never harm anyone, your sister is fine.
P: Well, she better be.
A: By the way, Mir and I will be going with you two, is that fine?
P: Why?
A: I want vacations from this place, and so does Mir, we had it with Tomy's kidnapping thing, never liked that, really, and you two can really use two more pairs of hands, don't you?
P: Well... you're welcome to come with us, the more the merrier I guess...
A: Great, let's get ready to leave.
P: Yeah, let's go.

A.4 Character 3: Mir

- Block 1 Mir:
Pris: Good morning, I'm Pris.
Mir: Oh, you're the kid we found on the outskirts, I'm Mir. So, how are you, how are you feeling?
Pris: Oh, I'm fine, thank you, I feel my chest a little heavy tho.
M: I guess that's because of the radiation outside, you shouldn't have wandered around the woods with this clouds, it's dangerous.
P: I know, but we had to reach a settlement north by next week.
M: We?
P: Oh, yeah, I was accompanied, but you didn't find anyone else in the forest, right?
M: Right.
P: *Sigh I hope she's okay then, I'm kinda starting to freak out.
M: Well, there's a chance whoever you were with found a place to stay safe from the clouds, just don't worry about it for the moment, you'll find them eventually.
P: Thanks, that's a bit relieving...
M: Just make yourself at home, okay, we'll talk later.
P: See ya.
- Block 2A Mir:
Pris: Got any time for a question?
Mir: I guess, what's up?
Pris: How did you find this place? It looks weird with that dome and all that.
Mir: Some time ago we were looking for a place to stay and I found this, it looks

good enough to get refugee from the clouds, so I thought it would be fitting.

Pris: So you don't know who built that thing?

Mir: I don't know, maybe some research site or something like that, or maybe just a bunker, we didn't find out a lot of stuff about this place, but it serves us right, so who cares?

Pris: I mean, I would be at least a little bit curious.

Mir: It's just a dome that preotects us from the clouds, don't think too much about it.

- Block 2B Mir:

Pris: So, Tomy.

Mir: What about him? Do you want to know how we met?

Pris: Kinda, yeah.

Mir: Well, there's not much story to it, we met when we were in college, he was friends with my girlfriend.

Pris: Oh, so you met through her?

Mir: Yep, she moved out eventually and we ended breaking out, in case you were wondering.

Pris: That's not nice to hear, but you stayed friends with Tomy?

Mir: As you can see, he's not the most elloquent or open person, but I can get beyond that.

- Block 2C Mir:

Pris: So what did you do as a job?

Mir: I was an artist, kinda, at least tried to live of it.

Pris: That must be hard.

Mir: Yep, it's not very well paid unless you'r famous, and it's not very visible, sooo, yeah, it sucked.

Pris: You still draw?

Mir: On my free time, yeah, I draw, make small sculptures, that sort of thing, it's more of a way of passing time, now that I cannot sell them.

Pris: At least you're no longer doing it for exposure.

Mir:

- Block 3A Mir:

Pris: Hey Mir, can I ask you something?

Mir: Yeah, sure, what do you want to know?

Pris: What kind of art did you focus?

Mir: Mmm, everything really, most of what I do is paintings and the sort, but I am also pretty good at sculpting and decorating other objects.

Pris: Wow, that's a lot.

Mir: When you need money, you learn to adapt as an artist, I didn't want to kkep eating noodles all day, you know.

Pris: Yeah. . . Well, I got something for you

Mir: What is it?

Pris: This watch, I found it earlier, it's decorated, I thought you would like it.

Mir: Well, yeah. . . I made it, it was something Tomy found and wanted fixed, I later took it and ecorated a bit since it was rusty and kinda ugly, I thought it would be fun.

Pris: That's nice... and strange?

Mir: Yeah, quite a bit.

- Block 3B Mir:

Pris: Hey Mir, can I ask you something?

Mir: Yeah, sure, what do you want to know?

Pris: What kind of art did you focus?

Mir: Mmm, everything really, most of what I do is paintings and the sort, but I am also pretty good at sculpting and decorating other objects.

Pris: Wow, that's a lot.

Mir: When you need money, you learn to adapt as an artist, I didn't want to kkep eating noodles all day, you know.

Pris: Yeah, I thought of finding some canvas or anything else for you but...

Mir: Oh, don't worry, I still practice my art and there's some pieces of mine around here, I keep myself entertained.

Pris: Oh, alright.

- Block 4A Mir:

Pris: How do we do in this fine day?

M: It's cold, and boring.

P: Yeah, I feel that too, but I was expecting another response.

M: My responses are mine and mine alone.

P: ...What?

M: Nothing, don't mind, do you want something?

P: Yeah, I wanted to know something about this place

M: Hahaha, like what? I don't know much either, I just happened to find it, looks a bit weird though, doesn't it?

P: Yeah, I though it was too much of a place for all of you.

M: Oh, thanks for the kind remarks, miss, anything else?

P: Nah, I'll go wander around.

- Block 4B Mir:

Pris: How do we do in this fine day?

M: It's cold, and boring.

P: Yeah, I feel that too, but I was expecting another response.

M: Well, you should have expected the truth.

P: Ain't that right? Anyway, do you know anything about this place? Looks a little bit too...

M: Weird as fuck, yeah, the dome is really unsettling, isn't it? But I don't know too much, actually, must have been some test site or something, it preserves cold though, maybe they used it as a freezer, haha.

P: Wow, that would be really cool actually.

M: Ha, I know right? Cool, because is a freezer hahahaha.

P: ...Nice pun.

M: Hey, you made it.

P: Yeah, but unintentionally...Argh, I'll see you around.

- Block 4C Mir:

Pris: Hey, how you doing?
 M: Not bad, whta do you want?
 P: Nothing, just know how you holding up.
 M: It's not bad, as you can see, there's nothing much to do here, anyway.
 P: Don't you have anything to do?
 M: Well, I'm not the most skilled sround here, as you can see, I handle myself with a pencil, but other than that...
 P: You're a slacker!
 M: Hey, no, don't say that, I sometimes help repair stuff, that's as much as I can do, sculpting classes paid off for something at least...
 P: I would love to see some of your stuff.
 M: Yeah, well, cash first.
 P: Dang.

- Block 4D Mir:

Pris: Hey, how you doing?
 M: Not bad, whta do you want?
 P: Nothing, just know how you holding up.
 M: It's not bad, as you can see, there's nothing much to do here, anyway.
 P: What about art? you're an artist, right?
 M: Yeah, well, sometimes I fix some stuff and decorate it, that's as much as I can collaborate here.
 P: That's cool, I would love to see your stuff.
 M: It's nothing out of the extraordinary, it's mostly basic stuff.
 P: I'm sure it's good.
 M: Nah, it's not, stop praising me.
 P: Imposter syndrome much?
 M: ...Leave me alone for now.

- Block 5A Mir:

Pris: It looks like the clouds will dissipate soon.
 M: Yeah, it seems so, good for you, right?
 P: Yeah, kinda.
 M: You don't seem so excited. Don't tell me you got attached to this place?
 P: No, it's not that...
 M: Then what is it?
 P: I think there's still things I have to do here.
 M: Huh? Like what?
 P: I lost something and it might be here.
 M: Well, I won't ask you about it, but you can stay as long as you want.
 P: Yeah, thanks.
 M: But you will have to work I guess.
 P: Yeah, I figured that.

- Block 5B Mir:

Pris: It looks like the clouds will dissipate soon.
 M: Yeah, it seems so, good for you, right?

P: Yeah, kinda.
M: You don't seem so excited. Don't tell me you got attached to this place?
P: No, it's not that...
M: Then what is it?
P: I think there's still things I have to do here.
M: Is this about that person you were looking for?
P: Yeah, but I don't know, she might have come back home, I'm not sure.
M: You can stay a little bit more if you want, don't worry too much about it, you'll find her eventually.
P: ...Thanks.

- Block 5C Mir:

Pris: I want to talk to you about something.
M: Yeah? What is it?
P: You will be opening the doors soon and I will be able to leave the dome and go on with my travel, but...
M: But?
P: My sister should still be around here, she was traveling with me, and I am worried, but I don't know what I should do anymore, if I leave I might leave her behind, but I need to go...
M: Is it that important that you leave?
P: Well, not exactly, I was delivering a package, and there will be consequences if I don't deliver it, but... my sister is more important, you know?
M: Well, maybe there's a way to make that decision easier.
P: Yeah?
M: Yeah, I'll tell you later.

- Block 5D Mir:

Pris: I want to talk to you about something.
M: Yeah? What is it?
P: You will be opening the doors soon and I will be able to leave the dome and go on with my travel, but...
M: But?
P: My sister should still be around here, she was traveling with me, and I am worried, but I don't know what I should do anymore, if I leave I might leave her behind, but I need to go...
M: It must be very important if you're so worried.
P: There's a package I need to deliver, my bosses will be angry, but my sister is more important than those jerks.
M: Yeah, fuck bosses, they suck... Tomy is also kind of a bitch sometimes...
P: Wow, I wouldn't have figured.
M: ...You know what? Well fuck those bosses of ours, just you wait.
P: Huh?
M: We'll run, talk to you later.

- Block 6A Mir:

Pris: It is almost time.
M: Yeah, have you decided what you will do?

P: I guess I'll stay, I have to find someone here.
M: Well, If you're okay with that I'll tell Tomy, he'll sure find some job for you to do, he always does.
P: Fine.
M: You don't seem so happy.
P: I would have preferred any other outcome, but... well, this will do, sometimes you gotta make sacrifices.
M: Tell me about it, but I'm sure you'll have a grand time here.
P: I wish. . .

- Block 6B Mir:

Pris: It is almost time.
M: Yeah, have you decided what you will do?
P: I guess I'll stay, I have to find my sister and make sure she's fine.
M: Well, If you're okay with that I'll tell Tomy, he'll sure find some job for you to do, he always does.
P: Fine.
M: You know, I'm sure you'll find her, just give it a little bit more of time, don't worry so much.
P: Well, I'm gonna go crazy is I think more about it to be honest.
M: I guess we'll be seeing ourselves around, we'll be homies.
P: Niiice.

- Block 6C Mir:

Pris: Looks like the sky's clearing.
M: Yep, yep, we'll be opening soon, so you can leave.
P: Yeah, but my sister. . .
M: I told you I'd make that decision easier, didn't I?
P: Yeah, I guess you did.
M: Well, this is it, I'll bring your sister when we open the doors so you can leave with her, just don't tell Tomy anything.
P: Wait, you had my sister?
M: Tomy wanted whatever you got in that package, and your sister to open it, I guess, he's not the most bright or kind of all people, but we gotta deal with him now.
P: . . .
M: Don't worry, Amy and I made sure she's okay, Tomy is all talk anyway, there's no way he would actually hurt anyone.
P: ...Sure, okay, so we can leave? No consequences?
M: Oh, we'll deal with Tomy later, alright, but don't worry, we're not that kind of people.
P: You sure are the kind that kidnaps sisters.
M: Just Tomy, not us.
P: ...Whatever, we'll leave.
M: Let's get ready then.

- Block 6D Mir:

Pris: Looks like the sky's clearing.
M: Yep, yep, we'll be opening soon, so you can leave.

P: Yeah, but my sister. . .
M: Oh, don't worry about her, she's fine.
P: Did you find her?
M: Yeah, the same day we found you, Tomy wanted her to open your package, but fuck him.
P: ...You turn really easy on him, aren't you frineds?
M: Kinda, but he's really bossy and I hate that, so I thought maybe we could go with you instead.
M: You want to go with me and my sister?
P: Me and Amy, yeah, this place is nice, but I want more freedom than doing what Tomy says, so...Oh, sorry about your sister, we have made she's alright.
M: Yeah, I figured, you don't seem like abad person.
P: Thank you! So, shall we preparo our voyage?
M: Lead the way.

A.5 Character 4: Tomy

- Block 1 Tomy:

Pris: Hello, I'm Pris, you?
Tomy: Tomy, how are you feeling, Pris? Everything okay?
Pris: Yeah, I think so, I'm not fully recovered, but I manage.
Tomy: That's good! You can go anywhere you wabt in the settlement, but don't go outside for the time being, okay?
Pris: Yeah, Harris told me there's still a huge cloud outside, but I am in a bit of a hurry, and I have to find someone.
T: Well, I'm sorry to hear that, but if you go outside you are only going to get worse, so you can't, door's closed and we won't open it until the mist disperses, it's better that way.
Pris: I can't convince you otherwise?
T: Afraid not, just wait for a few days, it will be fine then.
P: . . . yeah, okay, thank you. . .
- Block 2A Tomy:

Pris: Can I ask you something?
Tomy: Yeah, why not.
Pris: Are you kind of the boss around here?
Tomy: Well, not exactly.
Pris: So, you just act bossy in forn of new people?
Tomy: If this is about the key, I'm doing it for your safety, and we all agreed to it.
Pris: Did you pressure them?
Tomy: No, I made them come to their senses.
Pris: That spunds like preassuring.
Tomy: This is starting to get annoying.
Pris: Yeah, tell me about it.
- Block 2B Tomy:

Pris: So, if you're not their boss "exactly", how's your relationship with the others?

Tomy: Good, thanks.

Pris: ...

Tomy: ...Well, me and Mir go a way back and we still get along despite everything, same goes for Amy, I think, as for Harris... I like to think of our relationship as professional.

Pris: He isn't your employee though.

Tomy: Just leave me alone with this, please...

- Block 2C Tomy:

Pris: What was your job?

Tomy: Well, I studied engineering because I always liked that kind of stuff, you know, clocks, machinery, I like to know how they work.

Pris: That's cool, so, did you make a living of it?

Tomy: Well, I wasn't employed in anything fancy, I worked in a clockwork shop, I liked to break them apart and build them again, it's fun, I always liked it.

Pris: So you're one of those, huh?

Tomy: One of those?

Pris: The kind that can't get their asses sit and are always looking too much into stuff, I knew someone who was the same.

Tomy: I'm not like that.

Pris: Well, I've got a feeling you are, and I'm rarely wrong, you know.

Tomy:Oh god the patience.

- Block 3A Tomy:

Pris: Heya, Tomy, guess what?

Tomy: What?

Pris: I found the key to the gatessssss

Tomy: No, you didn't

Pris: I'm not bullshitting you

T: Then are you still here?

P: Cuz there's plenty of radiation outside.

T: Big surprise, you won't say I didn't tell you.

P: I thought it wouldn't be that bad.

T: Are you gonna turn in the key now?

P: Nah, I'll keep it, you don't need it anyway, do you?

T: Whatever, just don't lose it.

- Block 3B Tomy:

Pris: Where's the key, Tomy?

Tomy: If you want it why don't you just look for it? I'm not gonna help you with this.

Pris: Come on, I want to go outside.

Tomy: Nah.

Pris: Please?

Tomy: No

P: Pretty please?

T: ...

P: ...kay, fuck you too.

- Block 4A Tomy:

Pris: Nice seeing you.

T: What do you want?

P: To leave, I guess, but also to know what's your deal.

T: My deal?

P: Well, why do you want from me? You wouldn't have saved me if you didn't want something, you don't seem like that kind of person.

T: It's just altruism.

P: Yeah, I don't believe you.

T: Well, there's no other reason, so, unless you have something else to say, enjoy our hospitality.

P: ...

- Block 4B Tomy:

Pris: Nice seeing you.

T: What do you want?

P: To leave, I guess, but also to know what's your deal.

T: My deal?

P: You brought me here and made Harris heal me, why? You don't seem so altruistic.

T: Maybe I am and you just didn't notice.

P: I consider myself a good judge of character, so it's unlikely.

T: Maybe you aren't that good of a judge then.

P: Just tell me why, c'mon.

T: I already did, just for altruism.

- Block 4C Tomy:

Pris: I already did, just for altruism.

T: You're welcome, but why are you bringing this up now?

P: I just thought I should thank you properly, it would be weird if I didn't.

T: Well, thanks for doing so.

P: Can I ask you why did you do it though? Not many people would do this for another person.

T: Because I wanted to help.

P: C'mon really, you can be honest with me.

T: I'm being honest, but this is it, we need to help each other, don't you think?

P: Yeah, but didn't expect you to say that, it's weird coming from you.

T: ...

P: Try to be a little more friendly from time to time, okay?

T: Yeah, thank you.

- Block 4D Tomy:

Pris: Hey, Tomy, thank you for having me here.

T: You're welcome, but why are you bringing this up now?

P: I just thought I should thank you properly, it would be weird if I didn't.

T: Well, thanks for doing so.

P: Can I ask you why did you do it though? Not many people would do this for another person.

T: I, from time to time, like to help people, after all, this is the only site we know with a dome in the area.

P: The dome seems nice, yeah, but that's all? You don't seem so nice to people you just met, why would you want to help them?

T: Being cautious around people you just met is one thing, helping them is another, I can do both, don't you think?

P: ...Alright, I'll leave you alone.

- Block 5A Tomy:

Pris: What's the deal with those doors, they won't budge.

T: Of course not, we're not opening them until the air is cleaner, we don't want the radiation entering here.

P: Well, the clouds seem to start fading out, so...

T: See?, you'll just have to wait a little longer and then go wherever you like.

P: You seem very happy to get rid of me.

T: Not happy, no, I wouldn't have helped you otherwise, but a bit relieved, maybe.

P: Relieved because I am going away?

T: Yeah.

P: Why?

T: Because there will be a thing less in my head to be worried about.

P: Okay, I won't insist.

- Block 5B Tomy:

Pris: What's the deal with those doors, they won't budge.

T: Of course not, we're not opening them until the air is cleaner, we don't want the radiation entering here.

P: Well, the clouds seem to start fading out, so...

T: See?, you'll just have to wait a little longer and then go wherever you like.

P: You seem very happy to get rid of me.

T: Well, maybe I will be, a little bit.

P: ...Thanks for the vote of confidence.

T: You're welcome, but understand that I can't be sad about everyone that leaves this place, there's a lot of people that have come and go, that's just how it is.

P: Okay, thanks, noted.

- Block 5C Tomy:

Pris: It's almost time to open the doors.

T: Yeah, you can finally leave, if you want.

P: Why have such big doors anyway?

T: I don't know, ask whoever built this place.

P: Do I know them?

T: I guess not.

P: ...Then I can't ask them.

T: What a shame... why are you always teasing me?

P: Dunno, you make it fun, since it seems we will not be seeing each other for awhile.

T: ...Isn't that up to you? We could always use a helping hand.

P: Maybe I'll think about it.

- Block 5D Tomy:

Pris: It's almost time to open the doors.

T: Yeah, you can finally leave, if you want.

P: Why have such big doors anyway?

T: Because of the clouds I guess. They get pretty nasty around here.

P: Yeah, I could tell, but still, they seem too big even for that purpose.

T: The people who built this place probably had their reasons, but I don't want to complain, it works for us, after all.

P: Yeah, it seems like a pretty nice place, to be honest, I could live here.

T: Do it then.

P: What? Live here?

T: Yeah, you could help us planting crops and all that, there's probably some good soil in here.

P: ...Didn't expect that you would invite me to live here.

T: Well, sometimes unexpected things happen, give it a thought.

- Block 6A Tomy:

Pris: So, I'm leaving soon, it seems, though to say goodbye to you.

T: That's nice to hear, have a safe trip.

P: Oh, don't worry, I'll have a good trip, and you won't have to see me anymore.

T: Yeah, sure, make sure, if you come back, to bring something nice at least.

P: You want a souvenir? How nice of you.

T: Whatever.

P: Goodbye.

- Block 6B Tomy:

Pris: So, I'm leaving soon, it seems, though to say goodbye to you.

T: That's nice to hear, have a safe trip.

P: Have anything else to say before I leave for good?

T: Take care of yourself, the woods become rough at night, that's all I guess, it was nice having you here.

P: Yeah, I'm sure you think that. . . hey, if a girl shows up after I leave can you tell her I left earlier?

T: No problem, are you expecting someone?

P: Yeah, she's my sister, but I need to get home soon enough, please help her if she gets here.

T: ...Sure, will do.

P: I'm going to prepare for the trip then, see ya.

- Block 6C Tomy:

Pris: So, the air is cleaning up and it would be time to go.

T: Have you given a thought about staying here?

P: Yeah, I have, that's why I came here.

T: And?

P: I guess I'll stay for awhile, I'm free to go whenever I want, don't I?

T: Yeah, you don't owe us anything, just make sure not to drink from the lake in the woods if you go outside, the water is polluted.

P: I'm savvy enough not to drink from any water source that I don't know it's safe, thank you.

T: Hey, just in case, it's not the first time that happens to us.

P: Well, thank you for all, I'll see what to do now.

T: You do you, I'll see you around.

- Block 6D Tomy:

Pris: So, the air is cleaning up and it would be time to go.

T: Have you given a thought about staying here?

P: Yeah, I have, that's why I came here.

T: And?

P: I'll stay, but I want you to answer me something.

T: Sure, why not?

P: Do you know where is my sister? She looks a lot like me.

T: ...Yeah, she came with you... She's fine, don't worry, we just wanted to get what was in your package.

P: Yeah, I figured, whatever, can I see her? I'm only doing this for her safety, just so you know.

T: Yeah, We were going to set her free after we got it anyway, with you by her side it must be easier.

P: Yeah, sure.

T: Umm, you know, I don't use to say this but... I'm sorry, we needed all the resources we could get and... we never had the intention to use violence.

P: I won't forgive you, I'll just do what I must do for my sister, and once that's done, that's it, that's all that matters.

T: It was my idea, don't take it too harsh on the others.

P: Alright, I won't, now, can I see my sister?

T: Yeah, of course.

A.6 Ending A

And so it is that Brie and I took off from that settlement and headed home with Amy and Mir. We kinda became friends with the travel, and continued our lives from then on.

A.7 Ending B

Brie and I left the settlement after that, but I wondered what would happen with Mir and Amy. I took a liking to them... at least we were safe and we can be happy onwards.

A.8 Ending C

I left alone and headed home, I would have a lot of explanations to give and I was hoping to see my sister home somehow, with a bit of luck. I definitely don't want to go back and I don't know if this was the right decision, but, this is what I decided, and will stick with it.

A.9 Ending D

In the end I decided to stay in this settlement, trying to establish friendship with them, Tomy must be the hardest, for sure. But at least I know my sister is here, and by being by her side we can take care of each other, and that's all that matters.

References

- [1] Blender. <https://www.blender.org/>, Accessed Feb 2018.
- [2] Unity 3D. <http://www.unity3d.com>, Accessed: Feb 2016.
- [3] Fungus. <https://fungusgames.com/>, Accessed: Feb 2017.
- [4] Telltale Games. <https://telltale.com/>, Founded: 12 July 2004.
- [5] The wolf among us. <https://telltale.com/series/the-wolf-among-us/>, Published: 11 October 2013.
- [6] Animal crossing. <https://animal-crossing.com/>, Published: 14 April 2001.
- [7] Zero Escape: Virtue's Last Reward. <http://virtueslastreward.com/>, Published: 16 February 2012.
- [8] The Legend of Zelda: Majora's Mask. <http://www.zelda.com/majoras-mask/es/>, Published: 27 April 2000.
- [9] Mixamo. <https://www.mixamo.com/>, Published: 27 March 2014.
- [10] 80 days. <https://www.inklestudios.com/80days/>, Published 31 July 2014.