

NEXT BlueGeneration



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D3.3 Presentation of Beta-version of BlueGeneration Game

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The Next BlueGeneration project aims to address workforce shortages and youth disinterest in the Blue Economy by raising awareness about career opportunities in the sub-sectors of Nautical Tourism, Maritime Transport, Marine Biotechnology, Aquaculture, Shipbuilding/ Ship-repair and Ocean Literacy/ Marine Conservation. It seeks to equip teachers with tools and knowledge to educate students about blue career opportunities, bridging the gap between workforce demand and youth unemployment.

One of the key tools for bridging this gap is a gamified skills self-assessment tool; the BlueGeneration Game. Developed with the sole purpose of disguising a comprehensive personality evaluator, the BlueGeneration Game sets out to gain an in-depth understanding of each student's strengths and competencies in the workplace.

The students will, through a selection of carefully crafted mini-games, be assessed in a number of personal soft-skills that are crucial for the different occupations in the Blue Economy. The final results of these soft skill assessments are then used to filter Blue Economy career options to a personalised and suitable portfolio for each student.

All games have been supervised in their approach and development by a HR psychologist, to ensure an optimal measuring of each soft skill.

Some key features of the BlueGeneration Game:

- 6 mini games
- 22 softs skills tested in total
- Each game lasts about 5 minutes
- Total assessment time of 30 minutes – suitable to be completed within one school lesson

Game Concept:

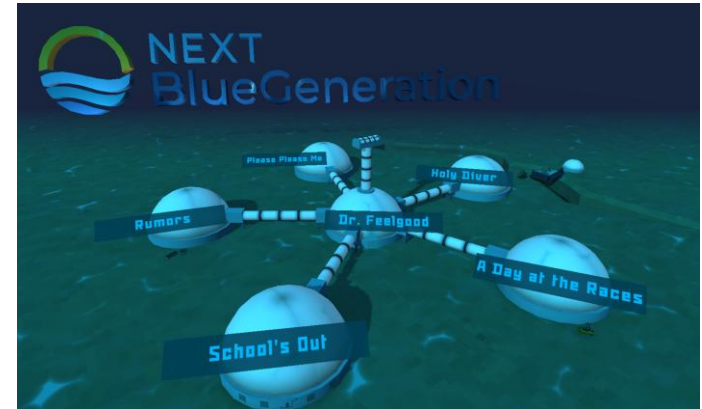
The game takes place in an underwater city named Atlantis. The player will assume the role of an inhabitant of the city; a person who has been chosen by the city “council”, for a performance evaluation across a variety of fields of expertise due to their promising potential.

The player’s objective will be to complete the 6 mini-games with the best possible results.

Through these mini-games, the game will assess each player’s respective strength in the 22 tested soft skills, including:
initiative, leadership, time management, problem solving, resilience, work under pressure, adaptability, flexibility, teamwork, multitasking, following procedures, safety & responsibility, willingness to learn, analytical skills, attention to detail, critical thinking, curiosity, communication, empathy, networking, customer service and ethical awareness.

Determining these soft-skills will ultimately function as a filter and stepping stone in guiding the students towards a profession most suited for each individual within the blue economy.

The game’s intended target audience are teenagers in the age-group of 14 to 19 years.



Visual and Audio Design:

The Next Blue Generation game has been conceptualized in a vibrant and colourful visual style, where a lively palette and clear, crisp lines define the characters, animations and environments.

The user interface has for the sake of usability and user navigation been kept as clean and simple as possible, allowing for an easy overview and understanding of necessary functions.

The audio-design will follow a similar cartoonish theme once implemented.



Technology Stack:

- The Next BlueGeneration game was developed in the Unity game engine.
- It was programmed in the C# (pronounced C-Sharp) programming language.
- The visuals of the game are composed of 3d models and icons which have been created in "Blender" and "Autodesk 3DS Max". Similarly, Adobe Photoshop has been used to create textures for use in-game.
- The game has been developed to run in a web browser such as Google Chrome or Firefox.



Unity



Mini-Game 1 - Dr. Feelgood:

Time Allocated:

5 minutes (300 seconds)

Soft-skills Tested:

Initiative, Leadership, Time Management.



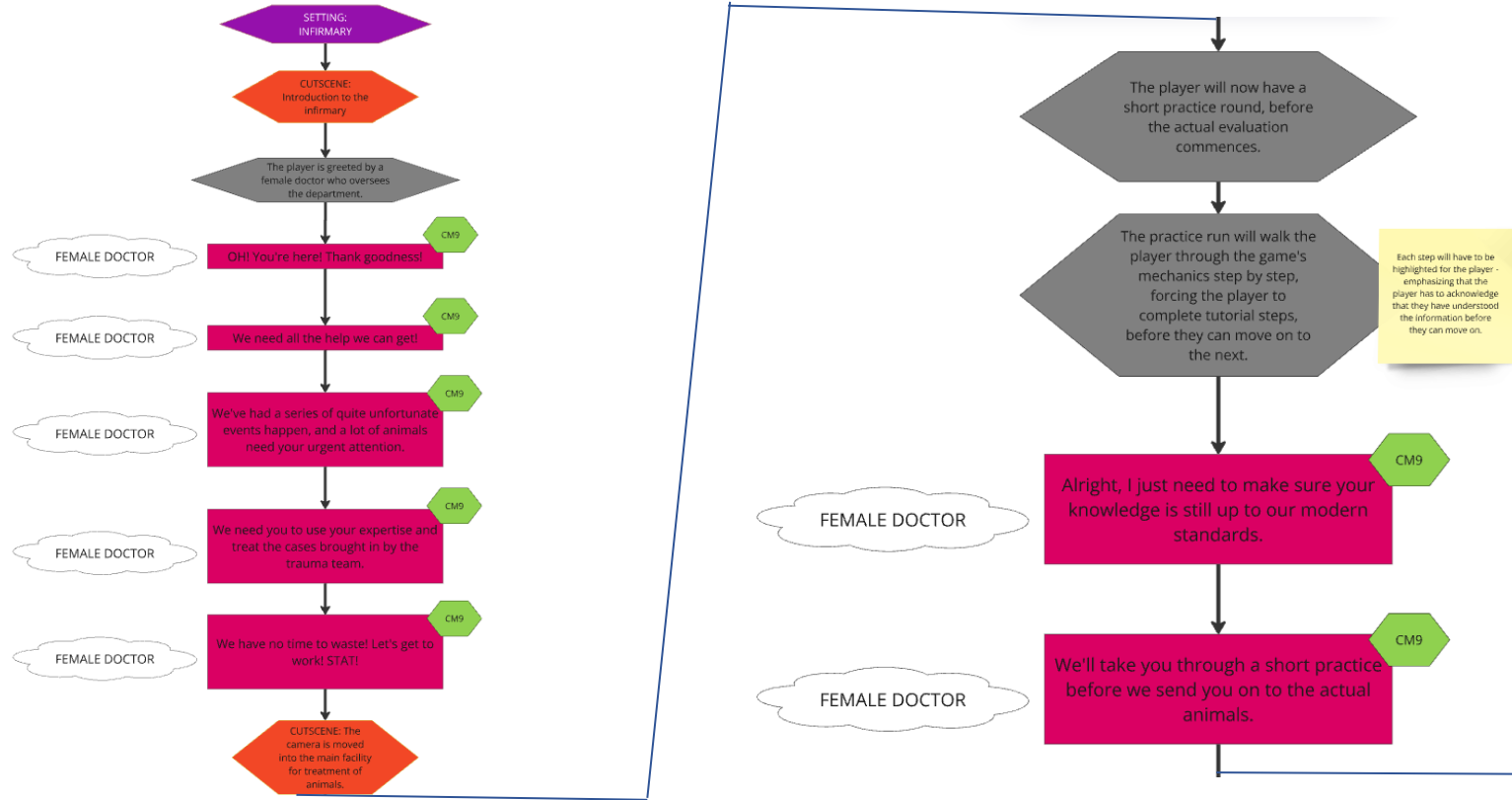
Overview:

The player assumes a leadership role of the local pet-infirmary. This is where the many animals of Atlantis, who have suffered either minor or critical injuries are sent for care and treatment. The players have to manage their decision-making abilities on top of their competences in thinking quickly on their feet to allocate staff correctly and thereby delivering the correct treatment to all cases in the shortest amount of time.

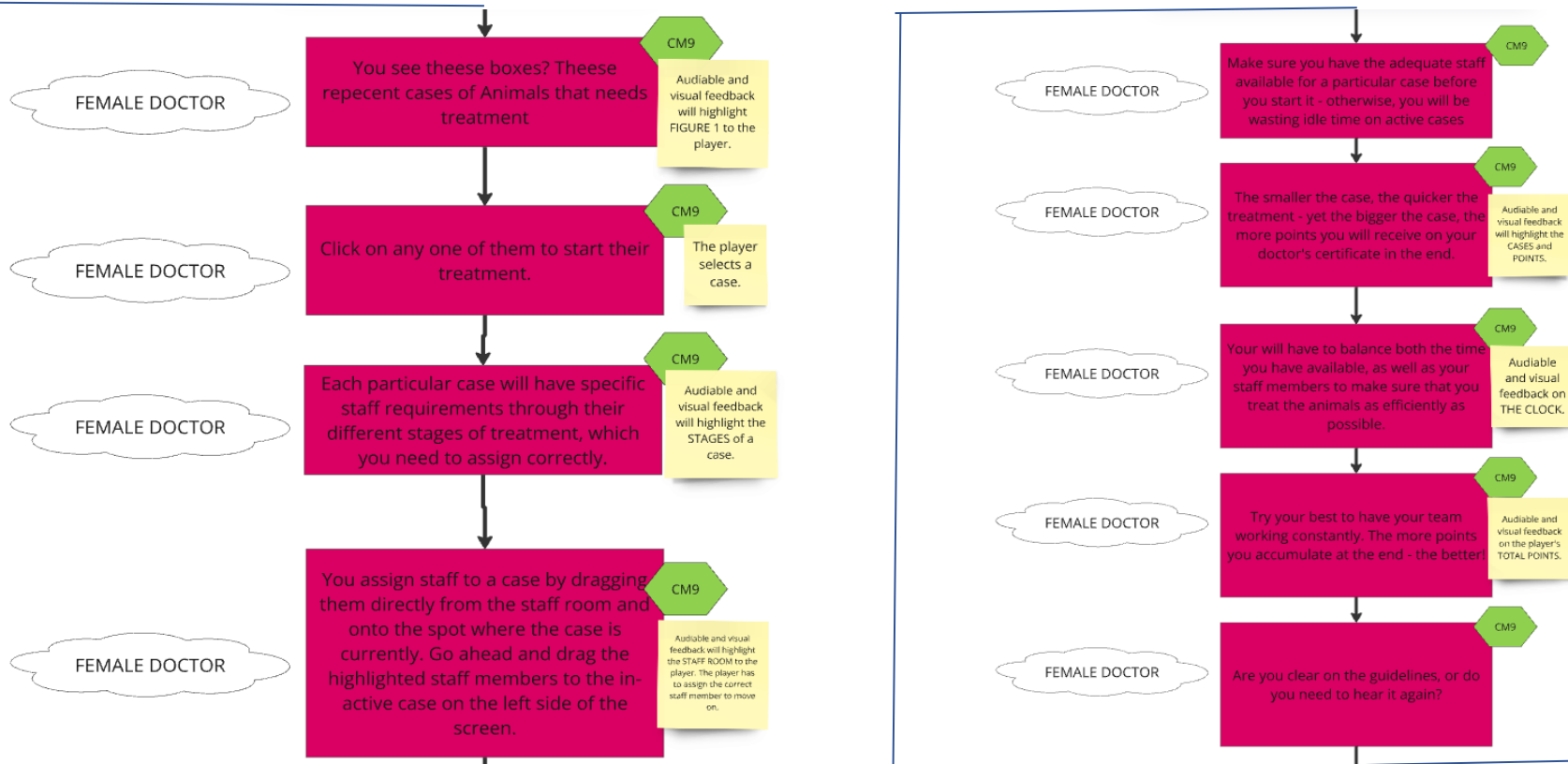
Soft-skill Evaluation:

1. **Initiative:** *Measured by the total amount of "idle"-time a player has on emergency cases. (The lower, the better.)*
2. **Leadership:** *Measured by the total amount of points accumulated through tasks. (The more points, the better.)*
3. **Time Management:** *Measured by the total amount of "idle"-time on general cases. (The lower, the better.)*

Flowchart for Game 1 - Part 1:



Flowchart for Game 1 - Part 2:



Flowchart for Game 1 - Part 3:

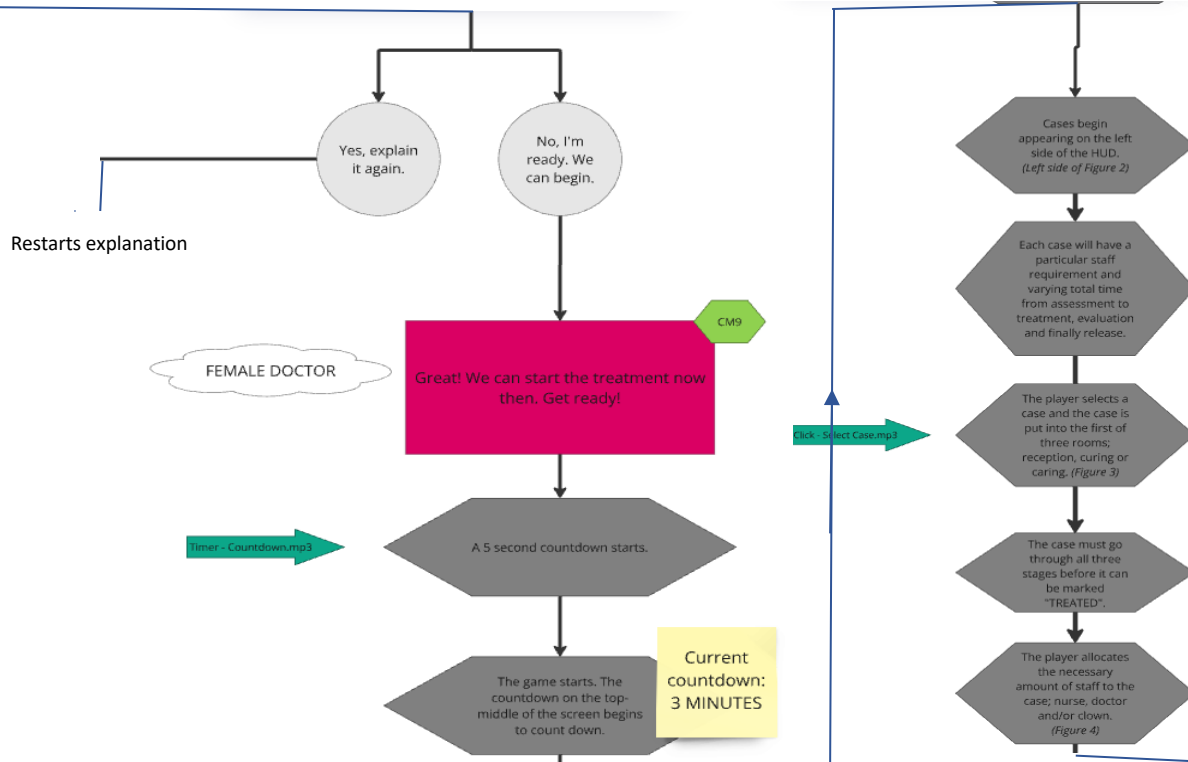


Figure 2 - Concept illustration of the infirmary

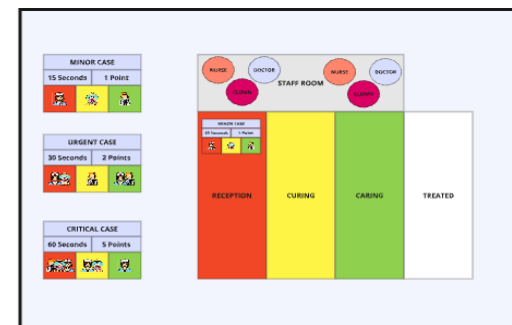


Figure 3 - Case allocation

Flowchart for Game 1 - Part 4:

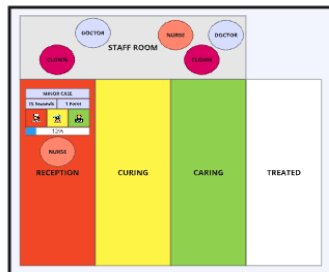
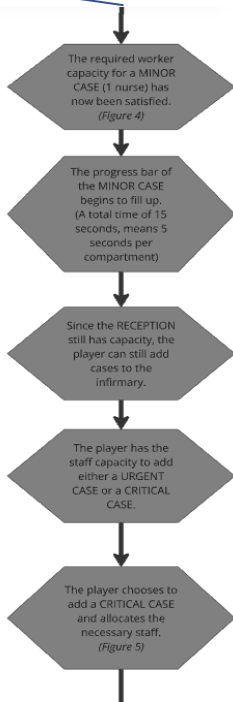


Figure 4 - Staff allocation

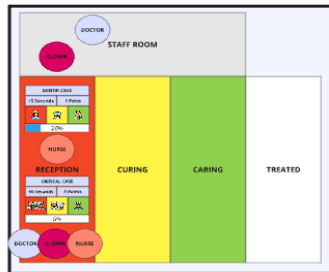


Figure 5 - Further staff and case allocation

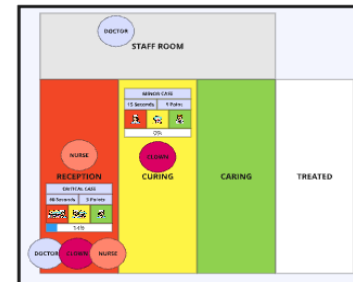
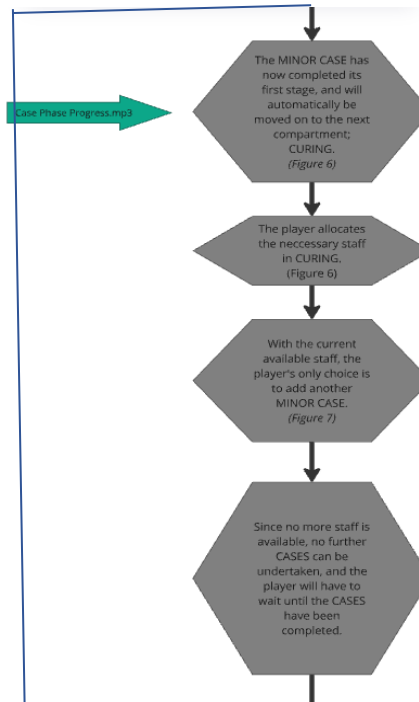


Figure 6 - Case progression + staff allocation

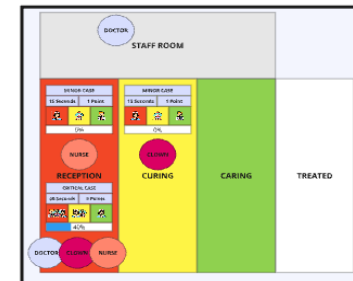


Figure 7 - Minor Case allocation

Flowchart for Game 1 - Part 5:

Both MINOR CASES are now done in their respective compartments and will automatically be moved forward. (Figure 8 + 9)

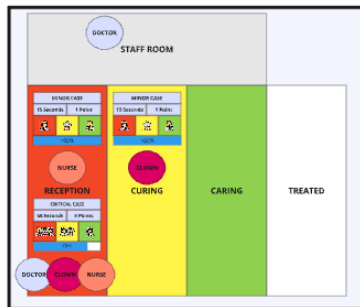


Figure 8 - Case Completion

With the first MINOR CASE having made it to CARING, the player allocates the available DOCTOR from the STAFF ROOM. (Figure 9)

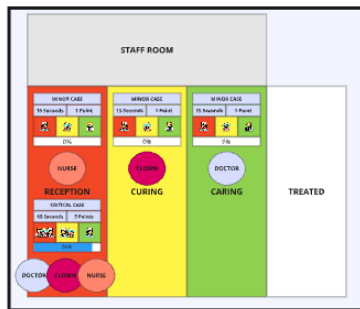


Figure 9 - Case Progression + Staff allocation

Since the NURSE in RECEPTION is now available, another MINOR CASE can be added to the infirmary. (Figure 9)

With the CRITICAL CASE having reached 100%, it has now been moved automatically forward into the CURING compartment, along with the two necessary staff members; NURSE and CLOWN. The DOCTOR has been moved to the STAFF ROOM. (Figure 10)

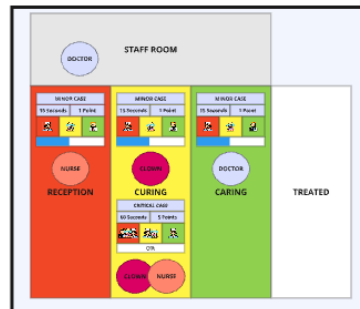


Figure 10 - Case progression + Staff allocation

The first MINOR CASE has now been completed and the player is awarded 1 POINT for its clearance. (Figure 11)

Case Completed.mp3

The player can now choose to use the available NURSE to undertake a new MINOR CASE, or wait until the CLOWN frees up in the CURING department, to instead undertake an URGENT CASE.

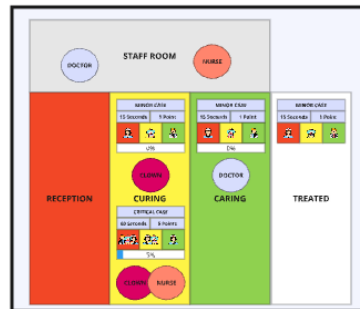
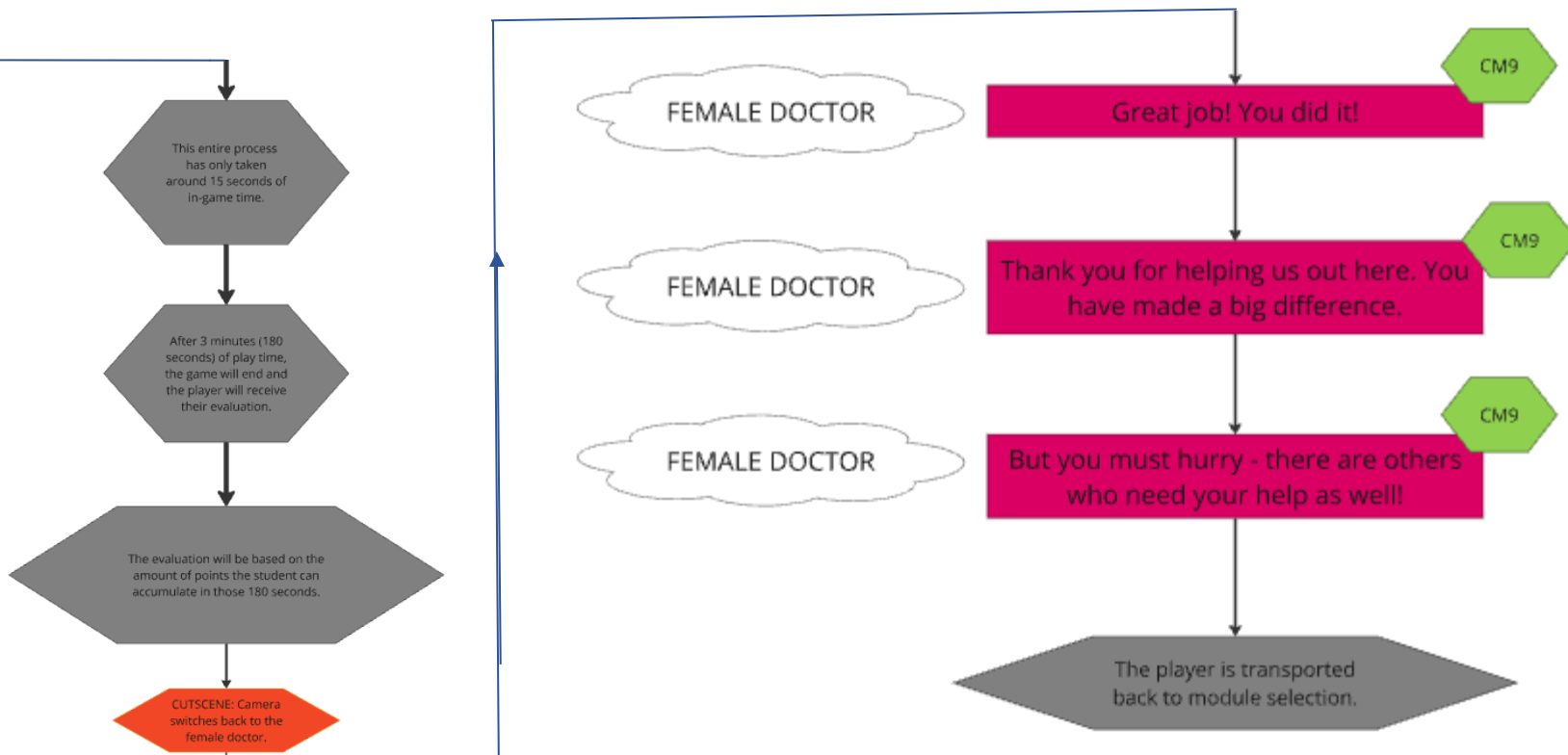


Figure 11 - Point allocation

Flowchart for Game 1 - Part 6:



Mini-Game 2 - Holy Diver:

Time Allocated:

5 minutes (300 seconds)

Soft-skills Tested:

Problem Solving, Resilience, Working under pressure.

Overview:

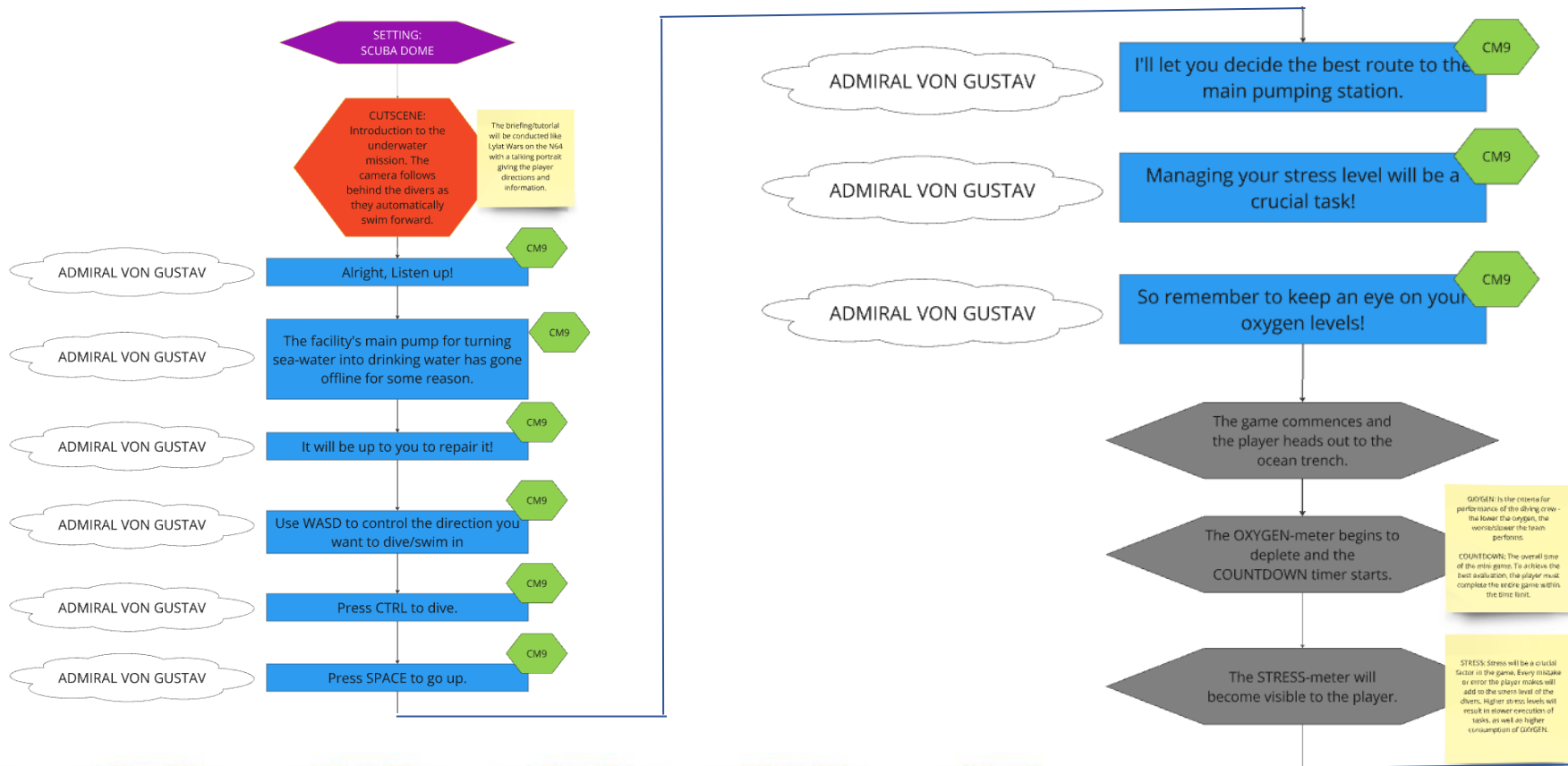
Assuming the role of a diver, the players have to navigate a long maze in a sunken ship and reach the other side of the level, where they will have to solve a puzzle to complete the stage. On their journey through the ship the players have to manage their oxygen supply, solve tube-assembling puzzles in the ship, as well as open locks on door to test their ability to work in stressful conditions.

Soft-skill Evaluation:

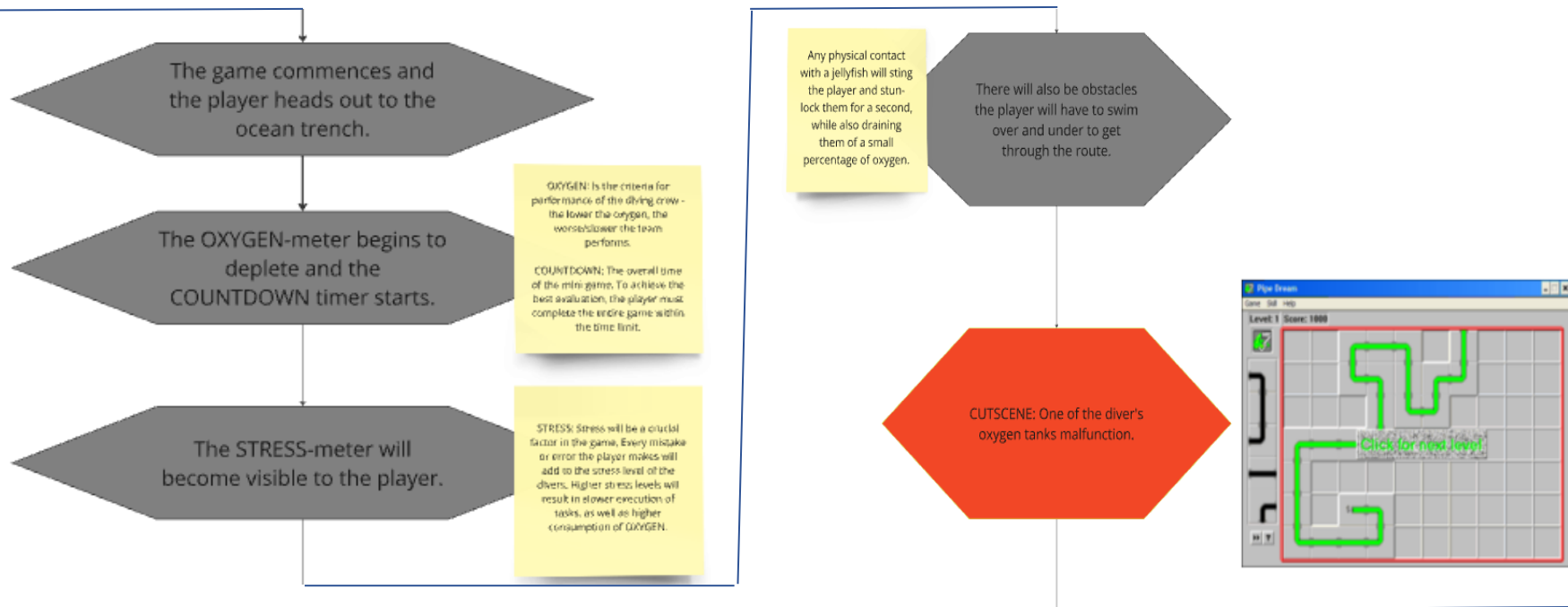
1. **Problem Solving:** *The total amount of puzzles completed. (The more puzzles solved, the better.)*
2. **Resilience:** *The amount of oxygen checkpoints cleared by the player. (The more checkpoints cleared, the better.)*
3. **Working Under Pressure:** *The speed of which player's clear the tube-puzzles. (The faster, the better.)*



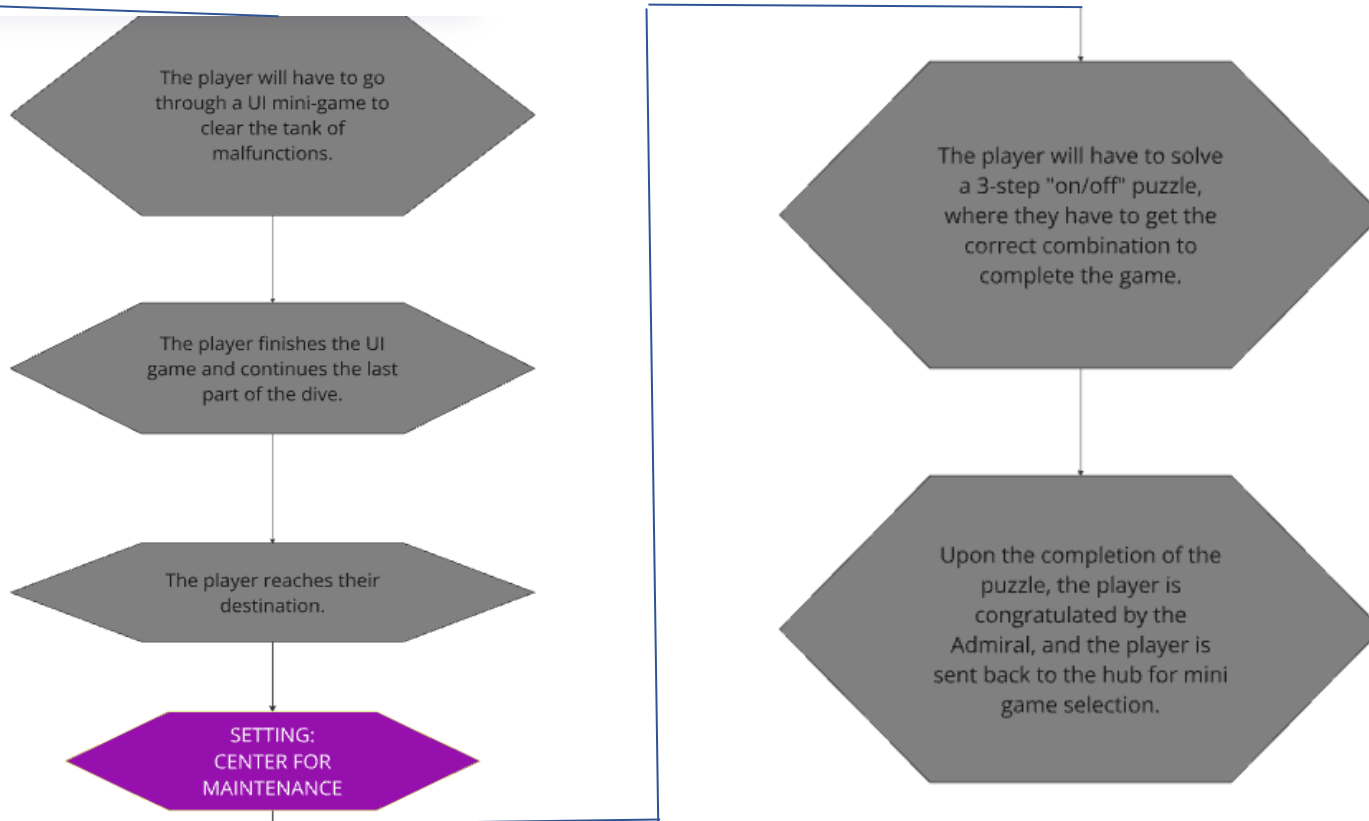
Flowchart for Game 2 - Part 1:



Flowchart for Game 2 - Part 2:



Flowchart for Game 2 - Part 3:



Mini-Game 3 - A Day At The Races:

Time Allocated:

5 minutes (300 seconds)

Soft-skills Tested:

Adaptability, Flexibility, Teamwork, Multitasking.

Overview:

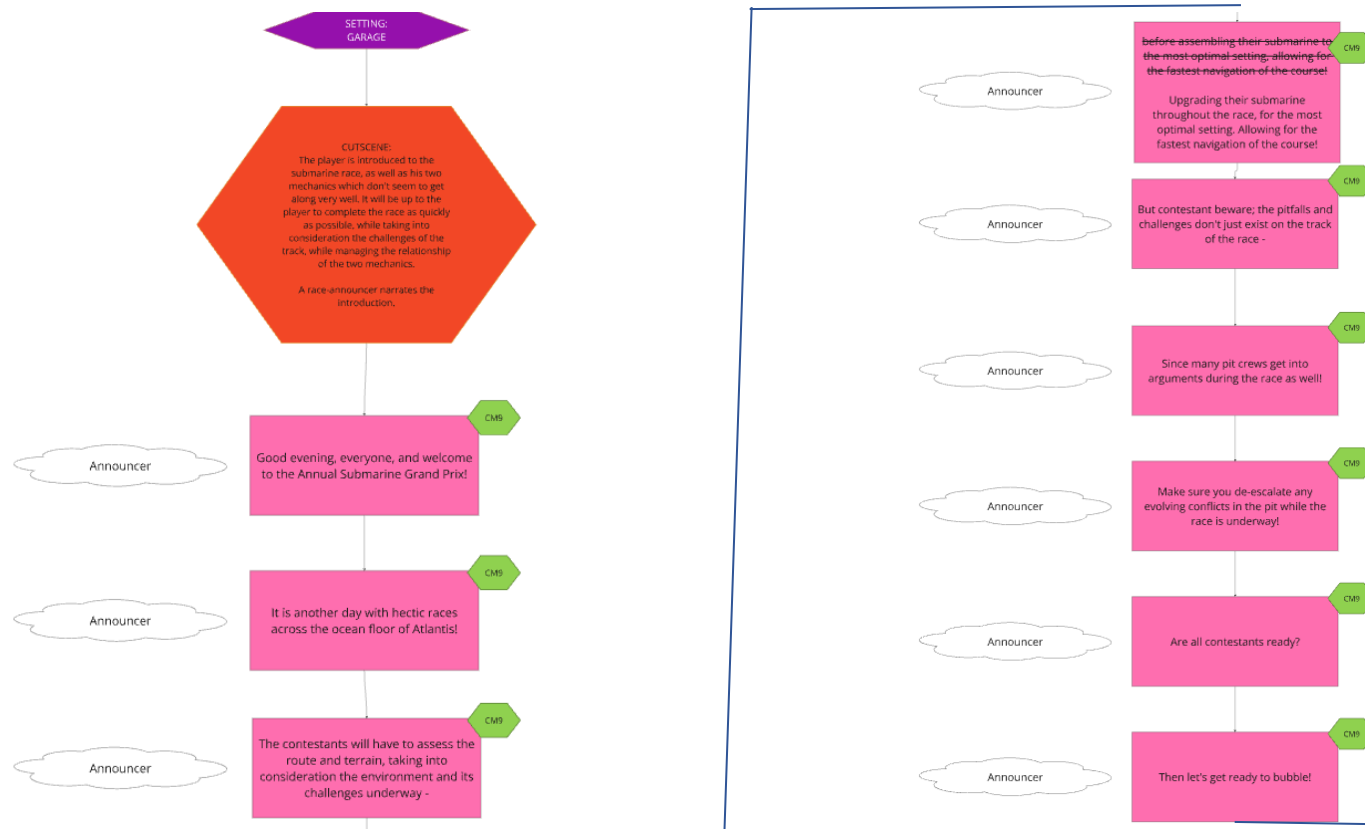
As the leader of the pit-crew in the famous Atlantis Submarine Grand Prix; the player will be tested on their ability to correctly manage the internal communication within their team, as well as being tested on circumventing obstacles associated with navigating the submarine, on top of having to equip the machinery optimally for the fastest completion of the course.

Soft-skill Evaluation:

1. **Adaptability:** *Measured by picking the correct parts for the submarine. (The more correct choices, the better.)*
2. **Flexibility:** *Measured by the player's final position in the race. (The better the placement, the higher the score.)*
3. **Teamwork:** *The player's ability to de-escalate arguments between the two teammates. (The less intense, the better.)*
4. **Multitasking:** *An average score derived from the combination of Adaptability, Flexibility and Teamwork.*

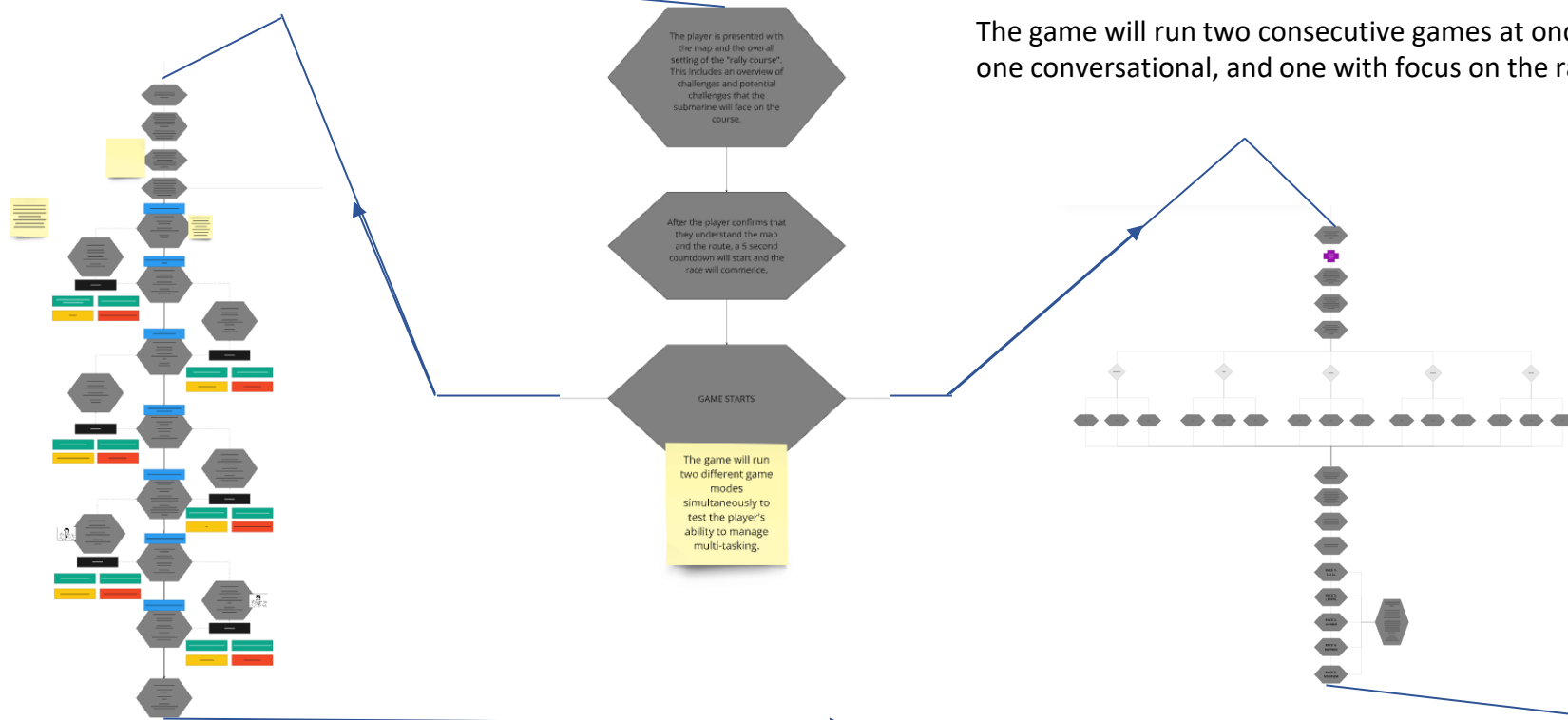


Flowchart for Game 3 - Part 1:

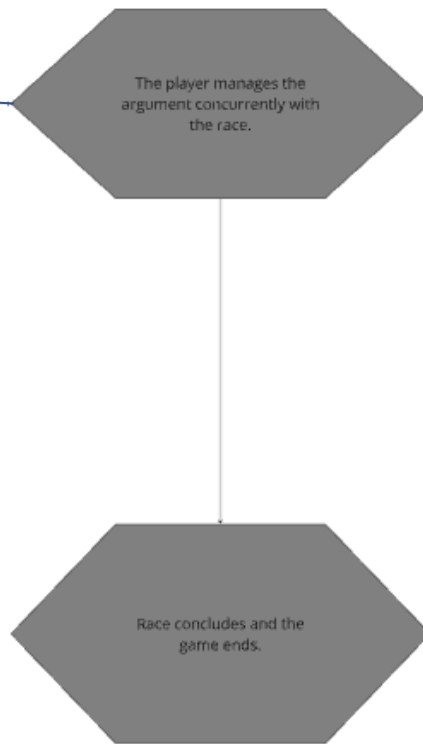


Flowchart for Game 3 - Part 2:

The game will run two consecutive games at once; one conversational, and one with focus on the race.



Flowchart for Game 3 - Part 3:



Mini-Game 4 - School's Out:

Time Allocated:

5 minutes (300 seconds)

Soft-skills Tested:

Following Procedures, Safety and Responsibility, Willingness To Learn.

Overview:

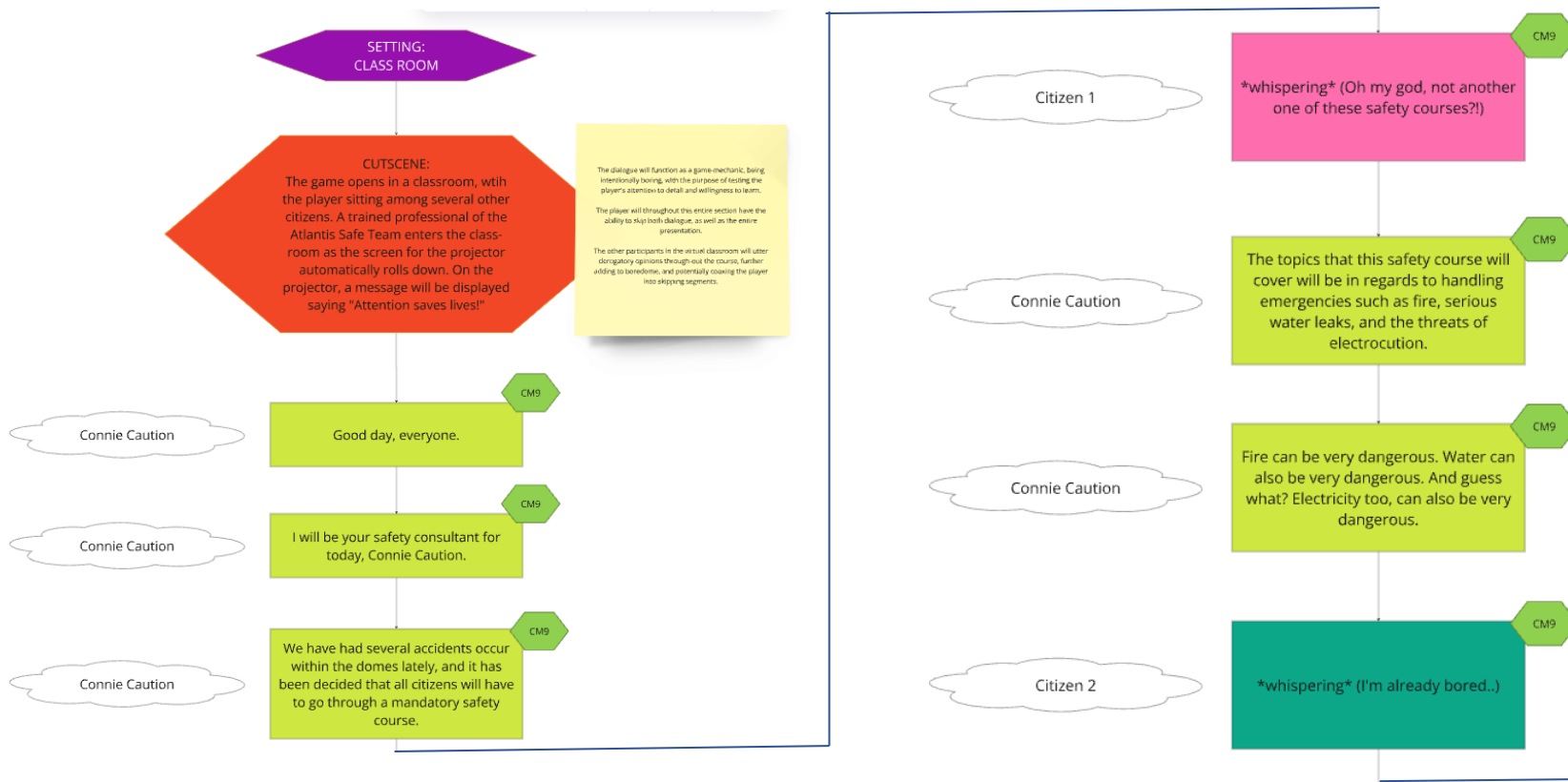
The player will have to sit through 3 very important safety briefings which each pertain information on how to behave as well as what to do in the case of a particular emergency in the city of Atlantis. The game covers 3 scenarios but will only put the player into 1 of the scenarios. However; the briefing is intentionally slow-paced and mundane in its effort to bore the player as much as possible, as the act of the player either not paying attention or completely skipping a potential segment will have dire consequences for the player's ability to complete the segment.

Soft-skill Evaluation:

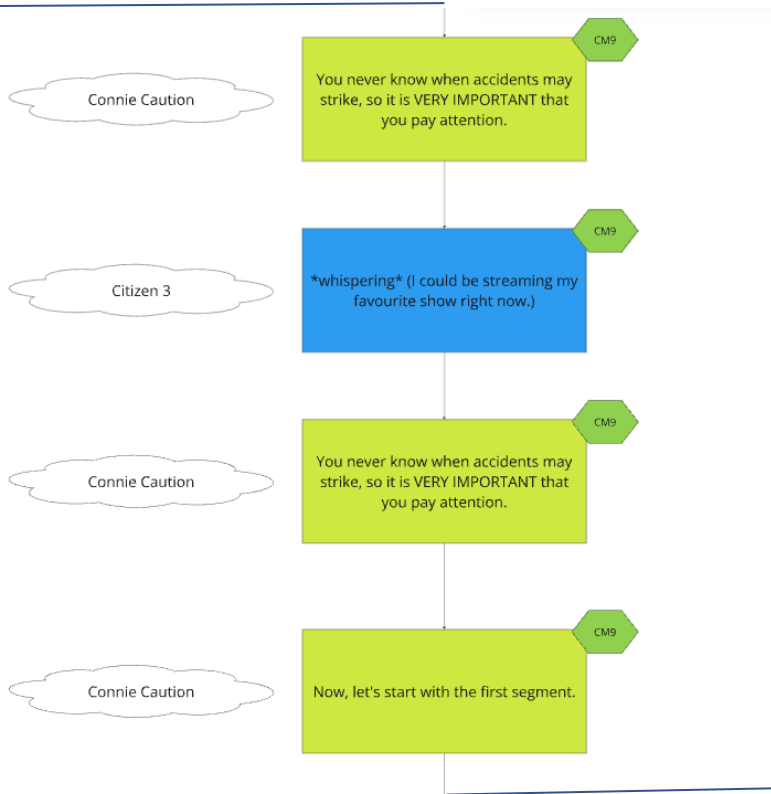


1. **Following Procedures:** *Measured by the player's ability to complete tasks in the correct procedure.*
2. **Safety and Responsibility:** *The number of steps completed in total within a particular scenario.*
3. **Willingness To Learn:** *How many slides the player gets through in total. (The more slides, the better.)*

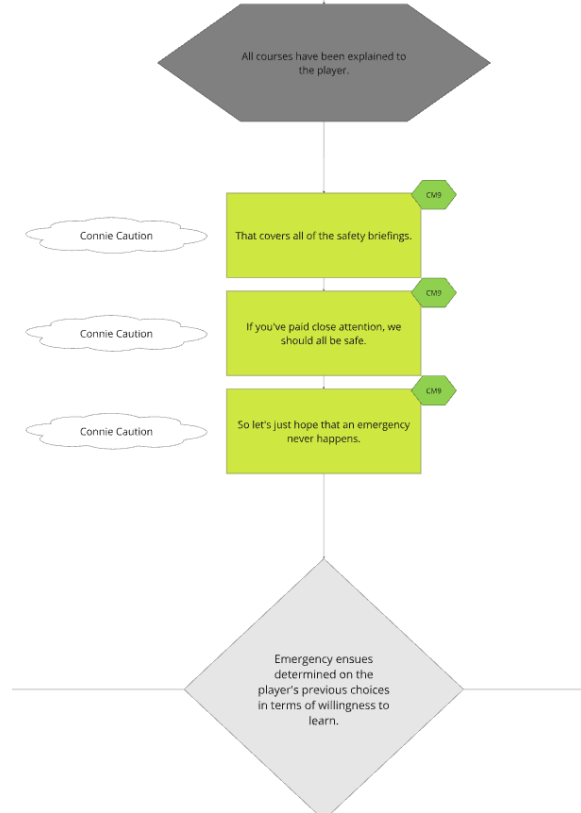
Flowchart for Game 4 - Part 1:



Flowchart for Game 4 - Part 2:



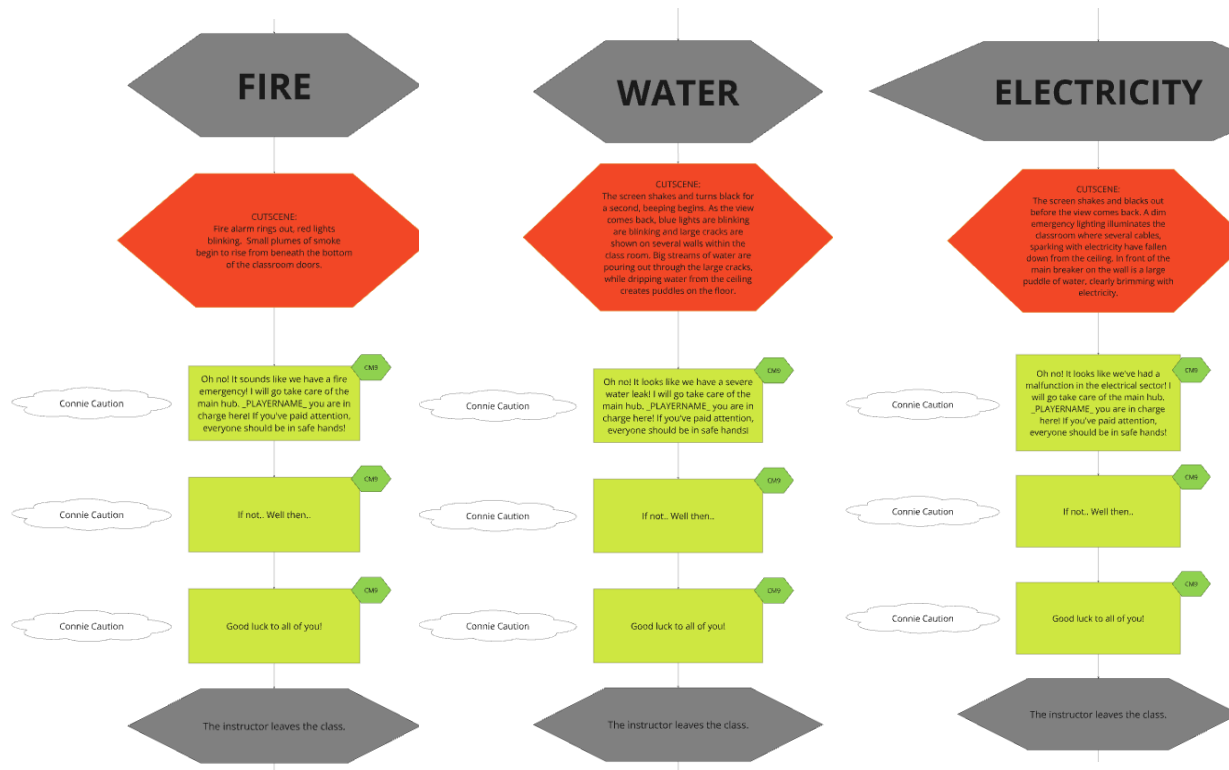
Flowchart for Game 4 - Part 3:



After being briefed on all 3 potential scenarios, the game will commence.

The player only has to complete one of the scenarios, however, should the player decide to skip any of the scenarios during the briefing, then that will be the particular scenario they will be forced to play.

Flowchart for Game 4 - Part 3:



If the player doesn't skip any of the briefings, a scenario will be chosen at random.

Upon the completion of the scenario, or if the timer runs out, the game will end and the player will be transported back to the hub for another mini-game selection.

Flowchart for Game 4 - Part 3:



Upon the completion of the scenario, or if the timer runs out, the game will end and the player will be transported back to the hub for mini-game selection.

Mini-Game 5 - Rumors:

Time Allocated:

5 minutes (300 seconds)

Soft-skills Tested:

Analytical skills, Attention to detail, Critical thinking, Curiosity.

Overview:

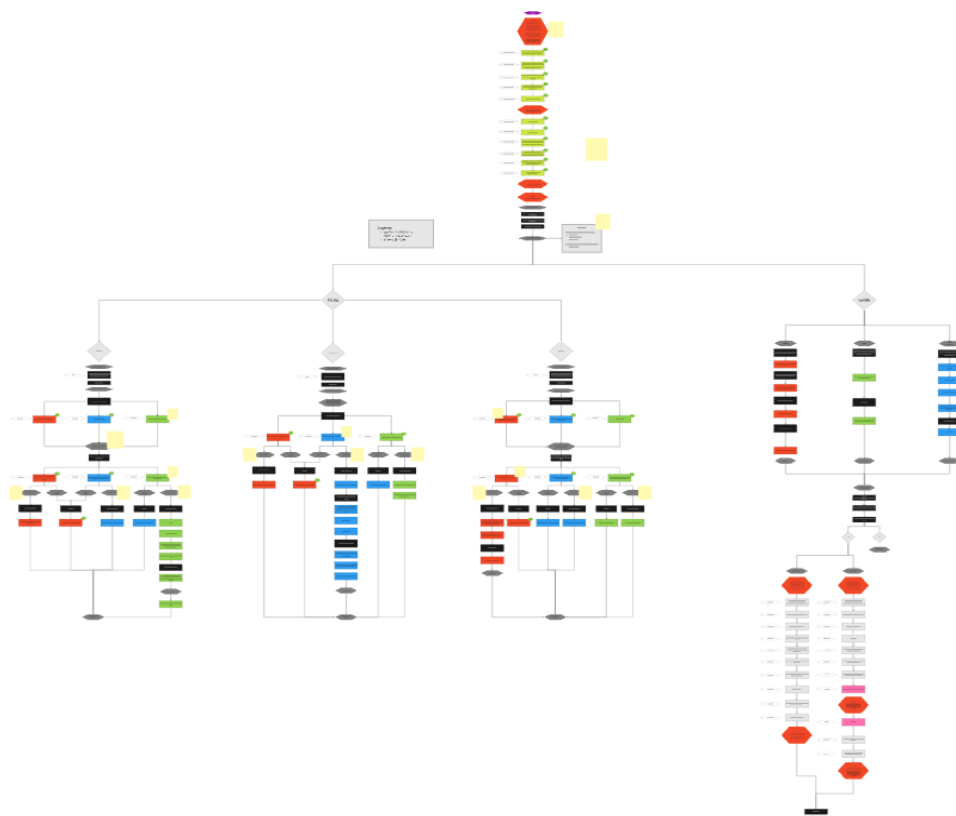
The yearly “Most Prestigious Marine Animal Competition” is about to take place, however, the prime candidate for winning has been kidnapped by someone. The player will assume the role of an investigator on site, who through examinations, investigations and questionings of suspects, must determine not only WHO kidnapped the prime candidate, but also WHY.

Soft-skill Evaluation:

1. **Analytical skills:** *Measured by the player’s ability to use clues and lies to identify the suspect.*
2. **Attention to detail:** *Measured by the total amount of lies the player can identify. (The more, the better.)*
3. **Critical thinking:** *An average of “Attention to detail” and “Curiosity”.*
4. **Curiosity:** *Measured through the number of clues collected by the player. (The more, the better.)*



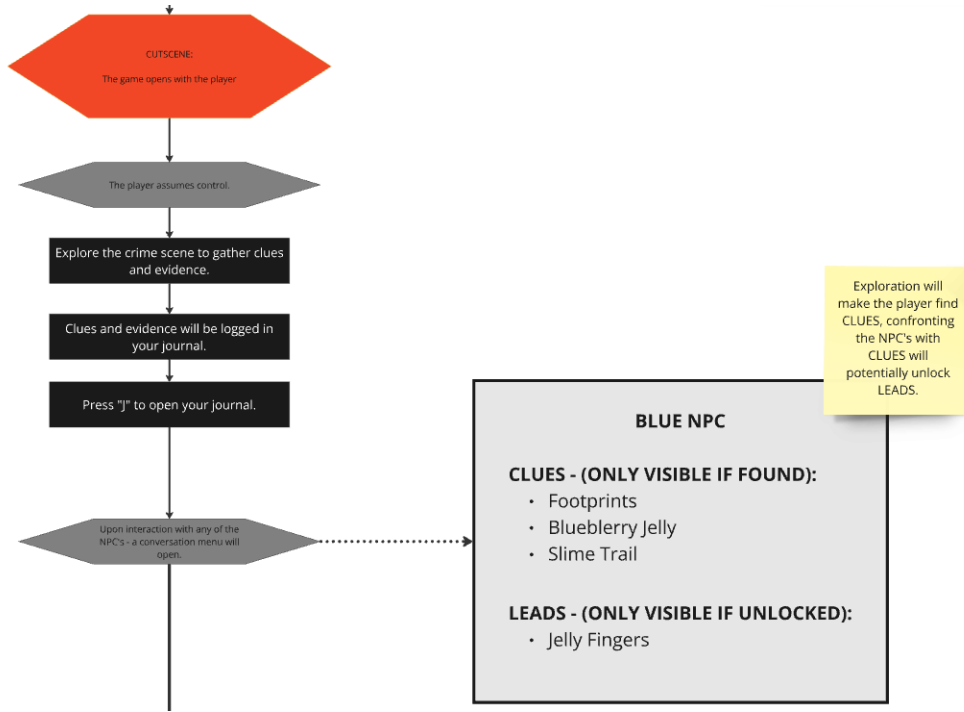
Flowchart for Game 5:



Game 5 is one of the two largest and most complex mini-games in the NBG game.

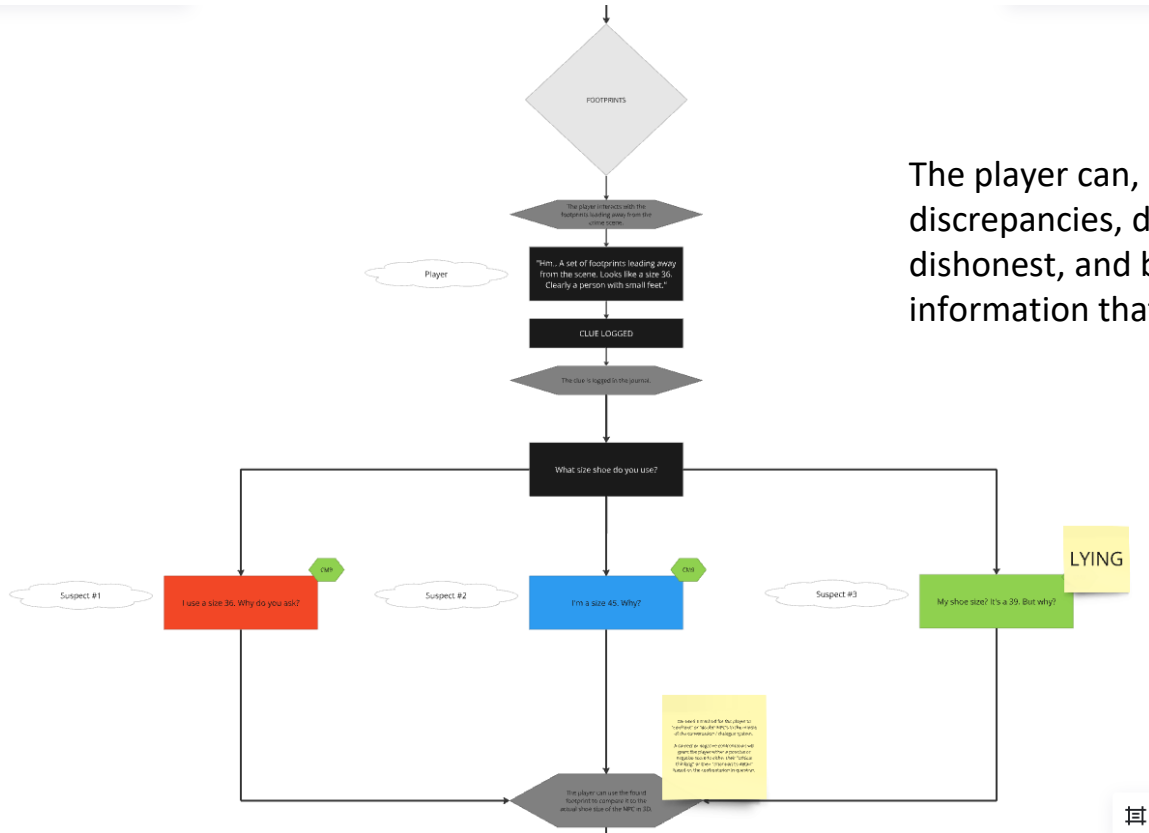
We also recommend viewing the entire chart on [Miro](#)

Flowchart for Game 5:



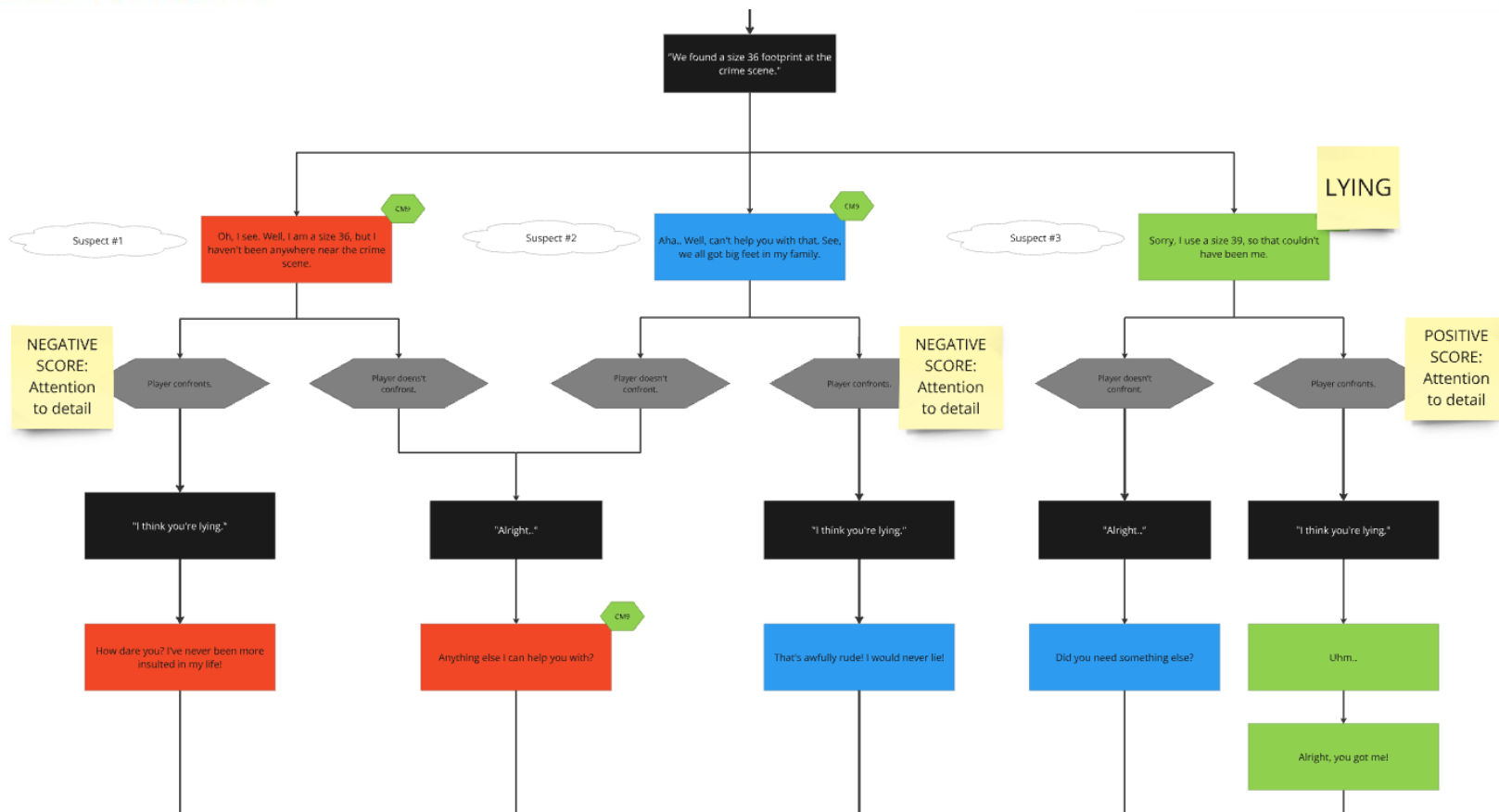
The game involves the questioning and cross-referencing of three suspects who each might be the culprit.

Flowchart for Game 5:

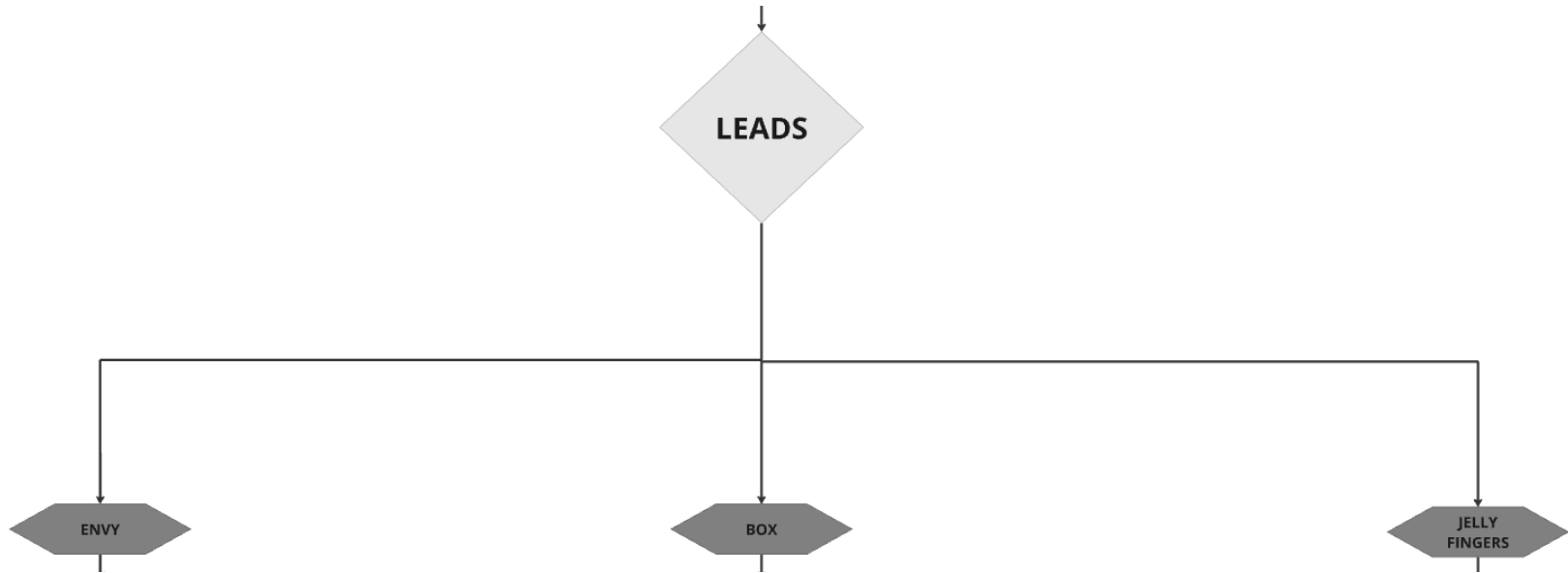


The player can, based on their ability to detect lies or discrepancies, deduct when a suspect is being truthful or dishonest, and based on their approach potentially unlock information that will lead them to the perpetrator.

Flowchart for Game 5:

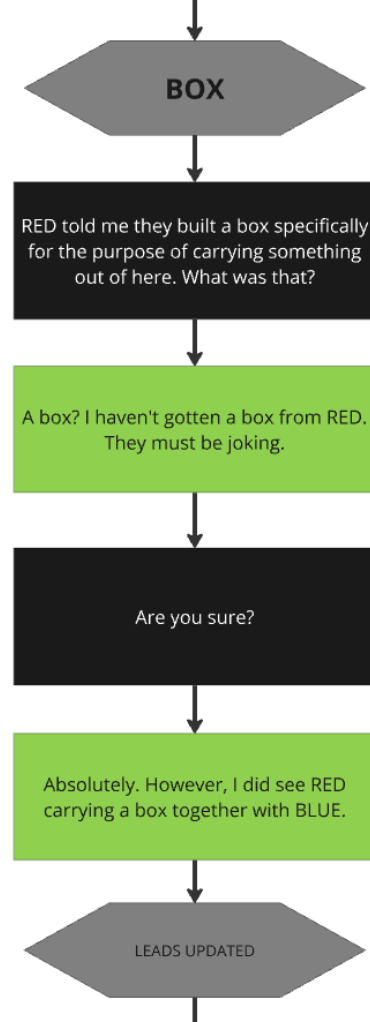


Flowchart for Game 5:

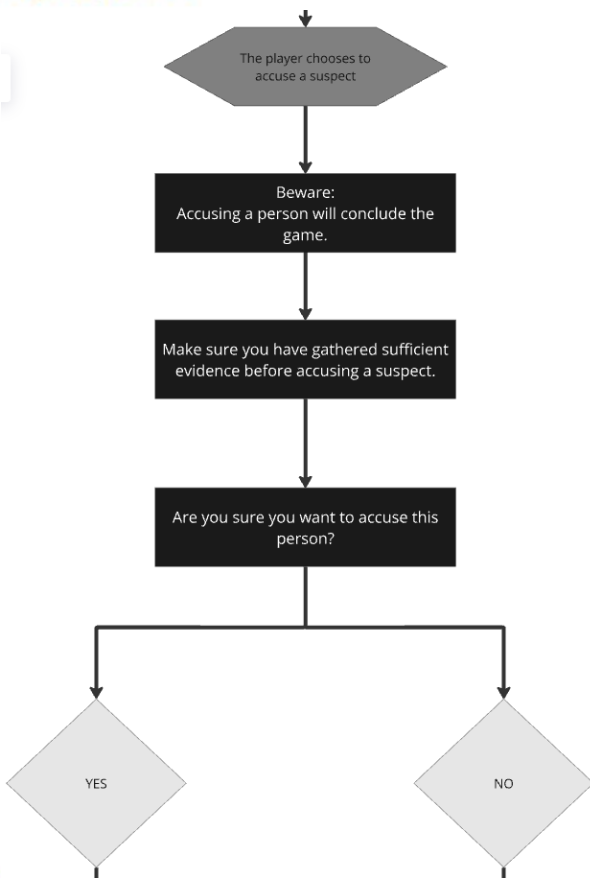


Flowchart for Game 5:

Leads will update as the player finds clues and interview people.



Flowchart for Game 5:



However, the player will only get one chance at accusing a suspect, so the player will have to carefully assess the situation before jumping to a conclusion.

Flowchart for Game 5:

The final decision not only affects the outcome of the story but also the score



Mini-Game 6 - Please, please me:

Time Allocated:

5 minutes (300 seconds)

Soft-skills Tested:

Communication, Empathy, Ethical Awareness, Networking.

Overview:

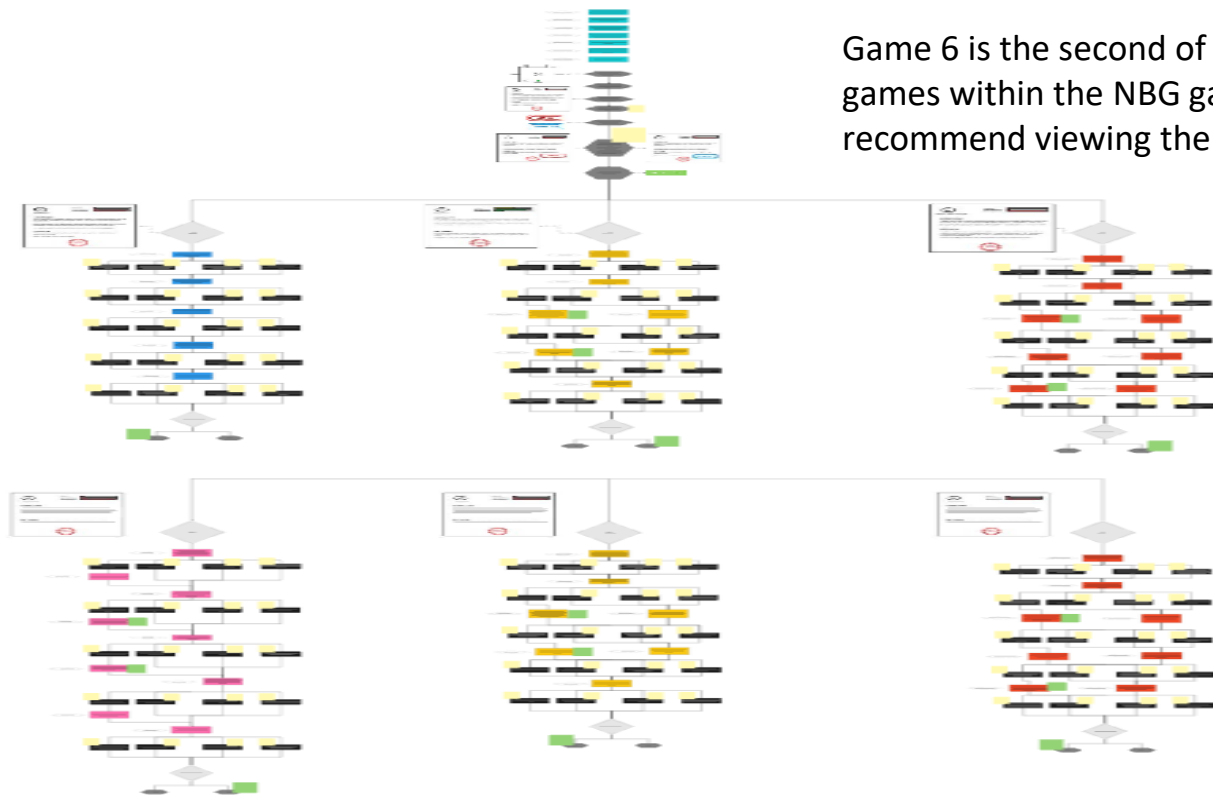
Functioning as a customer service representative within the Board of Complaints Department, a bureaucratic entity within the city of Atlantis. Through reading case files, listening to the complainant's testimony as well as engaging in conversation, the player has to make the correct decision to either approve or deny appeals.



Soft-skill Evaluation:

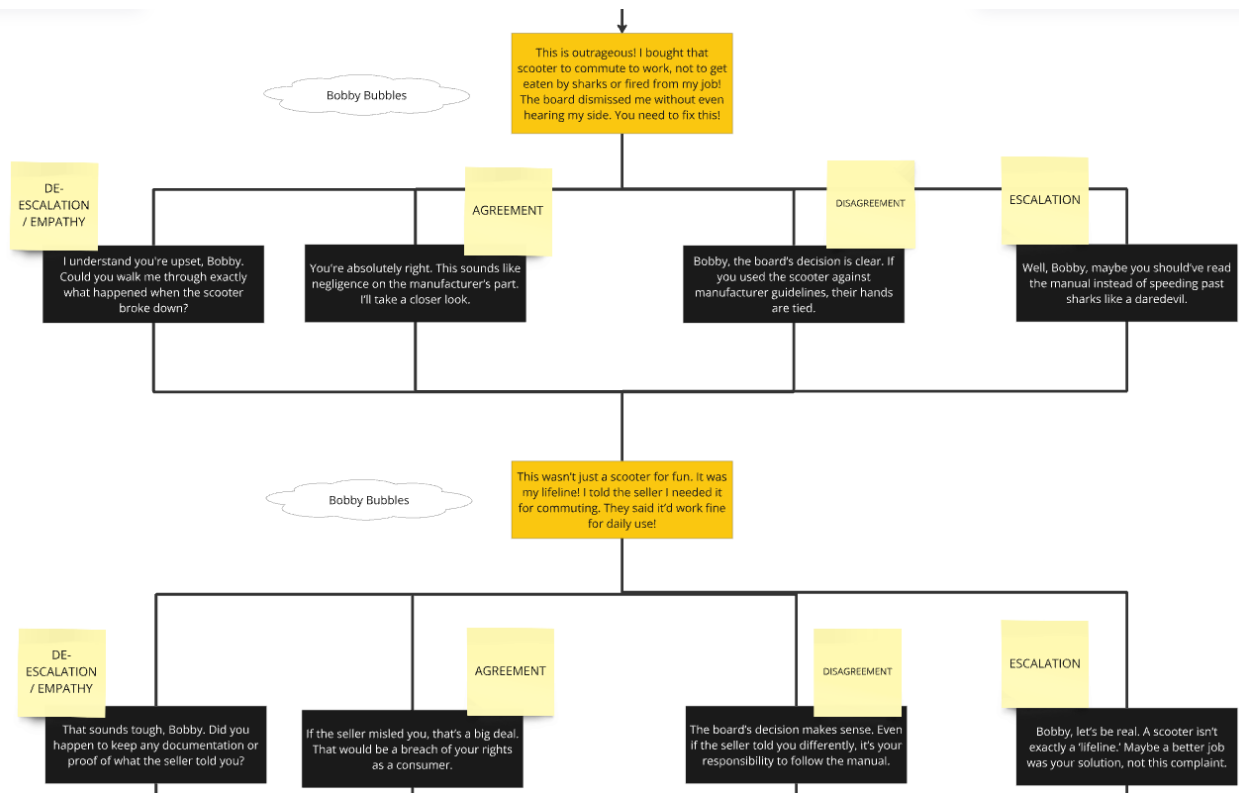
1. **Communication:** *Graded based on the player's ability to choose the LEAST escalating conversation options.*
2. **Empathy:** *Measured by the player choosing the most empathic conversation options.*
3. **Ethical Awareness:** *Measured by the number of cases the player correctly appeals or denies.*
4. **Networking:** *An average of communication and ethical awareness.*
5. **Customer Service:** *An average of communication and empathy.*

Flowchart for Game 6:



Game 6 is the second of the two most complex mini-games within the NBG game. Due to its size, we recommend viewing the flow-chart online on [Miro](#)


Flowchart for Game 6:






As the example here shows, the game involves the potential for engaging in branching dialogue with a total of 6 NPCs (non-player characters).

Flowchart for Game 6:

Though the time limitation of the game will only allow for a maximum of 3 NPC engagements, they are chosen at random, meaning that no two playthroughs will ever be the same.



Bobby Bubbles

Patience: 
Agreeableness: 
Determination: 

COMPLAINT:


Bobby has filed a complaint about his underwater scooter malfunctioning during his daily commute. He claims the scooter's defective engine stranded him in shark-infested waters, causing emotional distress and costing him his job after arriving late multiple times.

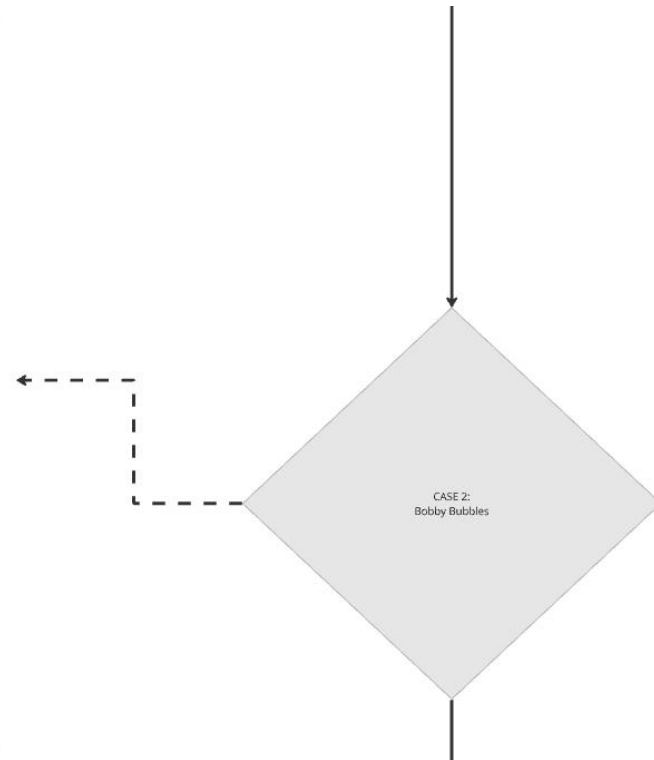
Bobby wishes that the manufacturer reimburses him for the loss of his job with a compensation in the amount of 20,000\$, correlating to 6 months of work.

DECISION:

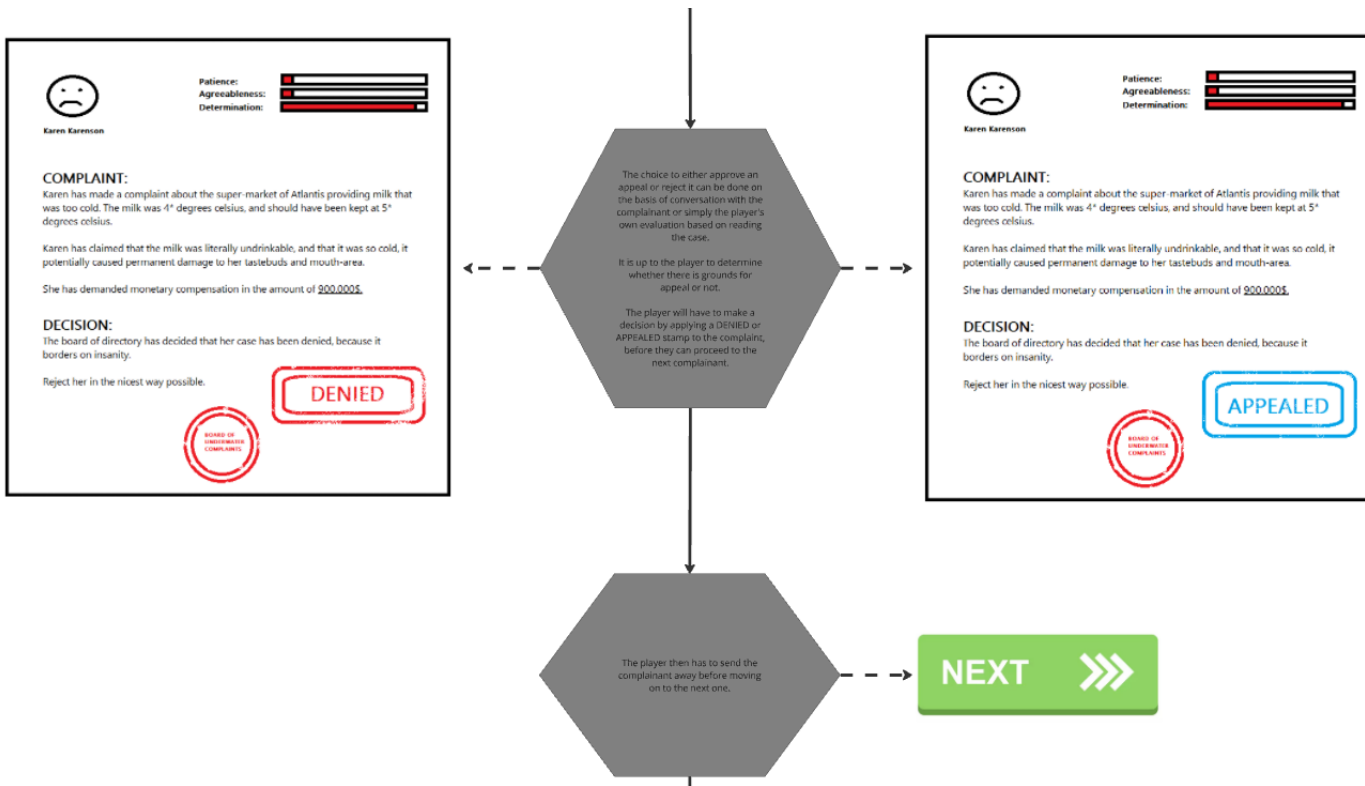
The Board of Underwater Complaints denied the appeal, citing that Bobby voided his warranty by using the scooter for "excessive commuting" instead of recreational purposes, as stated in the user manual.

Denied due to user error. Complaint dismissed.





Flowchart for Game 6:



It is up to the player to choose the most professional and empathetic method of communication, as the correct approach will allow the player to make the right choice for either appeal or rejection in the end.

- Evaluation Criteria:**

The player will be assessed through the entire game on 22 different soft-skills. The student will receive a grading within each soft-skills that ranks from 1 to 5, with 1 being the worst possible performance within that particular soft-skill, and 5 being the best. In the end, it is the evaluation within all of these soft-skills which will filter and determine which occupations within which sub-sector will be recommended to the student.

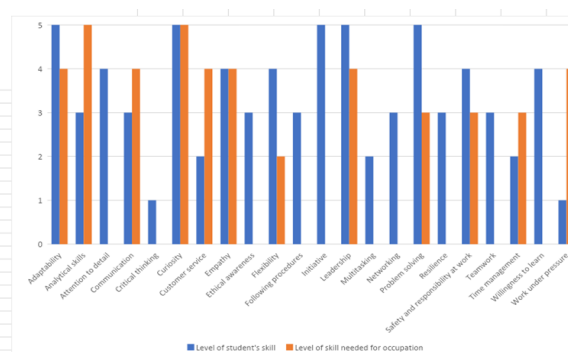
- Calculation Logic:**

Based on the current model, the calculation method for each soft-skill will vary within each mini-game, as each particular soft-skill will have its own rules and logic attached. Each of these methods are explained in the mini-game overview.

- Integration with the Database:**

The final score for each student will be compared against a data-sheet within the Pathway database, ultimately giving the player the final results of their performance within the game.

List of soft skills (22)	Soft skills required for occupation	Level of student's soft skills tested through the game	Level of soft skill needed for occupation	Number of soft skills match	Differences of compared skills
Adaptability	Yes	5	4	1	0
Analytical skills	Yes	3	5	1	2
Attention to detail	No	4	0	0	0
Communication	Yes	3	4	0	1
Critical thinking	No	1	0	0	0
Curiosity	Yes	5	5	1	0
Customer service	Yes	2	4	1	2
Empathy	Yes	4	4	1	0
Ethical awareness	No	3	0	0	0
Flexibility	Yes	4	2	1	0
Following procedures	No	3	0	0	0
Initiative	No	5	0	0	0
Leadership	Yes	5	4	1	0
Multitasking	No	2	0	0	0
Networking	No	3	0	0	0
Problem solving	Yes	5	3	1	0
Resilience	No	3	0	0	0
Safety and responsibility at work	Yes	4	3	1	0
Teamwork	No	3	0	0	0
Time management	Yes	2	3	1	1
Willingness to learn	No	4	0	0	0
Work under pressure	Yes	1	4	1	3
	Yes				0
		22			
	12	22	12	Total	12



Introduction

The Next BlueGeneration project addresses workforce shortages and youth disinterest in the Blue Economy by promoting awareness of careers in Nautical Tourism, Maritime Transport, Marine Biotechnology, and Marine Conservation. A key initiative within this project is the **BlueGeneration Game**, a gamified tool that assesses students' soft skills through a series of mini-games. The goal is to guide students toward suitable careers within the Blue Economy by assessing their strengths and competencies.

Key Features of the Game

- **6 mini-games**
- **22 soft skills** assessed
- Each game lasts **5 minutes**
- Total playtime of **30 minutes**
- Total lesson time for the game including introduction and conclusion: **45 minutes**
- Developed under the supervision of a **HR psychologist** to ensure accurate soft-skill assessment procedures
- Target audience: **Teenagers aged 14-19**

Scoring & Integration

- Players receive a **1-5 rating** for each soft skill.
- Scores are stored in the **Pathway database**, which recommends Blue Economy career pathways based on performance.

Conclusion & Next Steps

The beta version successfully introduces a structured approach to soft-skill assessment in an engaging format. Future development steps will involve refining game mechanics, improving user experience, and integrating feedback to enhance the evaluation process.

- Link to the current game build:
 - <https://www.ludusxr.com/next-blue-gen-game/>
- Link to the psychological evaluation of the games:
 - <https://drive.google.com/file/d/1ir5P03IVoxOKOqgqdtadwj3FcGyNLJ7/view?usp=sharing>
- Link to current score calculation method:
 - https://docs.google.com/spreadsheets/d/1OYCvQ5_j3BrXUru5uH3yYO2r5YD5GYID/edit?usp=sharing&oid=109569988498148329065&rtpof=true&sd=true
- Link to flow-chart structures of all mini-games:
 - https://miro.com/app/board/uXjVKNQzeqc=/?share_link_id=568061778771

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thank you