

Progress Report

POV: You Are a Bat

1 – EXECUTIVE SUMMARY

Our game, POV: You Are a Bat, is a single-player puzzle-based dating sim where the player has to complete levels in order to get resources that will progress the stories. The stories motivate the player to complete levels since the two parts are intertwined. The game has a light-hearted feel that is emphasized by its storybook look and feel. The puzzles consist of a number of different elements that interact with our novel mechanic: echolocation. The puzzles are set completely in the dark with only a small ring of light around the character. The only way to see more of the level is by using echolocation to light up a line of tiles from the player. If this beam hits a crystal or stalactite it will break and the "noise" of using echolocation attracts enemies. This makes the player think about the way they use echolocation instead of just spamming it. There will be a number of these levels for the player to complete, and they will challenge the player based on their problem-solving ability rather than their skill in using the game mechanics.

Our story is light-hearted and silly. It's told from three NPCs all of whom have individualized and unique personalities. When talking to each of them, more and more is revealed about them and the bat. As the story progresses, so does your relationship with these characters. To unlock more levels, the player must purchase gifts from the shop to give to the NPC with coins they collected in the puzzles. In total, there are four stories for each character. As of writing this report, we have all of the game elements implemented and the game is completely navigable. The game has a polished look and we are now working on small changes to improve the overall quality and on designing the remaining levels. These changes were brought to our attention during the playtesting session which was super helpful. A lot of our feedback made us realize we need to better inform the player about what they need to do in the game. In summary, we are on track to finish what we need to for the game to be complete by the deadline.

2 – GAME DESIGN

2.1 Vision Statement

Our vision for the game was to make a game where the player experiences life as a bat, in that the player must rely on echolocation to understand their surroundings.

2.2 Gameplay Synopsis

The game consists of two main sections. One is the visual novel section and the other is the puzzle section. In the visual novel section, you talk to the game's cast of love interests. As you bring them gifts and talk more, you learn about their personal stories as well as about the protagonist. In the puzzle section, you explore dark caves filled with enemies. You must use your echolocation to see and to solve puzzles to find money and finish the level.

2.3 Target Audience and Platform

The game is designed to be played on a Windows computer with a mouse. The game is controlled by a point-and-click system, and so a mouse is important to the user experience. Our target audience is people who enjoy both puzzle games and visual novels due to the game combining both genres.

2.4 Gameplay Overview

The game is divided into two main sections. One section is a visual novel dating game and the other is a top-down, grid-based puzzle game. In the puzzle section, the player is in dark caves and must rely on echolocation to illuminate tiles. The echolocation is also how the player interacts with the game world. There are crystals and stalactites which can be damaged by the echolocation, as well as enemies that respond to the sound. The player must use their skills to either find the exit of the cave or to accomplish a certain goal within the cave, while also collecting coins within. Those coins can then be used in the visual novel section. The visual novel section allows you to spend those coins at the shop to unlock new interactions with the game's love interests. When talking to the love interests, the player will learn more about the characters and also be able to choose which dialogue option they prefer.

2.5 Gameplay Description

Starting with the visual novel portion, there are three separate storylines for the player to explore. These are also the three “romance” options. To progress through each story, the player needs to purchase gifts for the NPCs that will increase their affection for the player. This increase in affection will allow for the next story for that NPC to be unlocked. As the story progresses, the player will learn more about the bat’s backstory and deepen their relationship with that NPC. To purchase the gifts for the NPCs, the player must collect enough coins in the puzzles to be able to afford them. In the shop, there are only three items on display, and it is implied that there is one for each NPC. When one of the items is bought, it is replaced by the next item needed for that character. This section of the game hopes to motivate the players to complete the puzzles to discover more about the characters and story.



Figure 1: Example of the story responding to a gift purchased.

In the puzzle section of the game, the player must work through each level while trying to complete the goal using the echolocation mechanic. These levels are completely in the dark with only a small ring of light around the player. Echolocation can be used to light up a line of tiles from the character in the direction that the player chooses. This mechanic interacts with almost every other element in the puzzles and is the only way to see what is ahead of you without moving. There are many elements to the puzzles which will all be described here, including enemies, crystals, stalactites, and coins. Enemies will reset the level and bring the character to the beginning if they touch the player. They can also be killed by stalactites. Whenever the player uses echolocation and the enemy is in hearing range (on screen), the enemy will move one space toward the player. This discourages the player from spamming echolocation, making the puzzle even more difficult due to limited vision. The next element, crystals, are not hostile meaning that they cannot reset the level. The crystals block the player's and the enemies' paths, so they are often blocking pathways that need to be reached. Echolocation can be used to destroy crystals but it takes three uses. This means that the character can attract enemies and perhaps destroy other elements while trying to break a crystal. This forces the player to think deliberately about when and how they use echolocation.



Figure 2: Crystals destroyed by echolocation.

Stalactites work very similarly, but they take four hits of echolocation to make them fall. They don't block a path until they fall so the player must be wary of this element for different reasons. When a crystal is placed near or next to a stalactite, the player could easily block their path with a stalactite when trying to break a crystal. Another feature of stalactites is that they can also kill the player or enemies. If either is under the stalactite before it is about to break, and echolocation is used, it will fall on them and kill them. This resets the player to the beginning or removes the enemy from the map.



Figure 3: Echolocation interacting with stalactites.

Our final element is coins. They are the only element in the puzzles that are not affected by echolocation. The players must work with and around all the other elements to collect the coins. Coins are optional to collect but they drive the other section of gameplay thus the players will be incentivised to go out of their way for them. They could be stuck behind stalactites or surrounded by enemies. All of these elements work together to create a puzzle that the player needs to stop and think about instead of rushing through. Each level will also have a goal or win condition. It can be one of three: reach the goal tile, kill all enemies, or break all the crystals. To summarize the gameplay, the player is incentivized by compelling and quirky stories to complete puzzles with a multitude of elements and our novel game mechanic echolocation to progress.

2.6 Controls

Our game is fairly simple in terms of controls. Within the map/story section, the player uses just the mouse to left-click where needed. There are a number of interactable buttons that the player can click which moves them to different parts of the game. When on the main map scene the player can click on any of the three NPC portraits and it will bring them to the matching character story screen. They can also click on the shop icon or the levels and it will bring them to their respective screens. The only other button of importance is the quit game button. In the puzzle section, the left mouse button is used to move the player to the selected square indicated by the cursor. The player character will take the shortest path using the A* algorithm from the square they are on to the square selected by the mouse. The left-click button is also used to interact with the quit and reset buttons in the top left of the screen. The right mouse button is used to echolocate. When the player right-clicks, a line of tiles will light up in the direction they clicked (i.e., if you click above the bat, the line will go straight up). No other controls are used since our game is mostly puzzle-based with limited actions.

2.7 Rules

Rules are also simple for our game. The most basic ones involve the movement of the player in the puzzle levels. The player is limited to a grid for their movement. They can only click on individual tiles and move to them. The player can click anywhere they want but will not be able to walk through any blocked tiles such as walls or tiles with crystals and fallen stalactites on them. In terms of how the game responds to the player, as outlined earlier, all elements in the design react to echolocation. Briefly, these responses are: the crystals breaking if hit three times, the stalactites falling if hit four times, and the enemies moving closer to the character by one tile. For the story section, the player can only read the next story once they have read the one before it (other than the first one). The player can also only buy a gift if they have enough money. Since these rules are fairly simple, they are easily enforced digitally, and there is no need to have socially enforced rules (especially since this is a single-player game).

2.8 Scoring and Win Conditions

As mentioned earlier there are small goals for each puzzle level that determine if the player has won that particular level. The game has no other complex system that measures success other than completion of that particular level. In an overall sense of the game, there is no true “win” condition. Completing the games involves solving all the puzzles and exploring all the NPC stories. Our game doesn’t require the players to perfectly solve all the puzzles (meaning they can retry as many times as

they want) to progress through the rest of the game. The player is free to set their own goals to gauge how well they are doing at the game. One of these goals could be that the player has collected all the coins in each level.

2.9 Game Characters

The game features five characters, three of which are the focus of the visual novel dating sections. The non-dateable characters are the bat protagonist and the shopkeeper. The shopkeeper is supposed to be a cryptid who sells things in the sewers. They do not talk much and are mysterious. The protagonist of the game is a bat designed like a Honduran white bat. The protagonist is a stand-in for the player, so their character is not as developed as the romanceable characters, but the bat does have their own story. The bat has issues with their family that you learn about as you progress in the visual novel section. The three romanceable characters have much more fleshed-out designs. Wilhelmina is a woman who got dumped after she was turned into a worm. She is very elegant and speaks in a fancy way. You find her crying in a park after being broken up with, and her story involves the protagonist helping her work through her breakup and accept herself as a worm. Pete is a birdbrained pigeon. He meets the jock archetype and seems to not care about anything other than sports. You first encounter him as he almost gets hit by a car while trying to catch a ball, and his story involves the protagonist getting him to take care of himself and care about more than just sports. Avery is a very anxious alligator. They are a nerdy character who struggles socially. You first encounter Avery on a boat in the sewer and catch them staring at you. Their story involves helping them learn to express themselves and build relationships.



Figure 4: The romanceable characters and the player character.

2.10 Story

In the game, the story is delivered in the visual novel section of the game. As you go through the visual novel, you learn about the romanceable characters through dialogue, as well as learn about the bat in those conversations. Each character has their own issues that they deal with and work through with the bat. By the end of the story, the bat will have gotten very close to one or more of the characters. The story will lean more into romance as it progresses.

2.11 Gamework

The game is set in a world that is similar to real life, except that animals live like people do. The other main difference is that slimes exist in the game. A lot of the game is in caves which have money sitting around, as well as slimes that chase you. The caves also have fragile crystals and stalactites that can be broken. The visual novel part of the game is in different locations for different characters, but the main areas are the sewers where you can find Avery and the shopkeeper, and the city where you can find Wilhelmina and Pete.

2.12 Media List

The following table is a list of the media used in *POV: You Are a Bat* at the time of writing. This is the majority of the assets that will be present in the final build. Unless otherwise specified, all assets are original to the game. Visual assets were created with *Sketchbook* and *Piskel*. All audio assets were created with *LMMS*, a free DAW (Digital Audio Workstation). Additionally, we got our font from the website *1001fonts.com*. See Appendix A for many of the visual assets listed here.

Category	Assets
Visual Media	<u>Character Art:</u> <ul style="list-style-type: none"> • Bat portrait • Wilhelmina portrait • Pete portrait • Avery portrait • Shopkeeper portrait <u>Cave 32-Bit Sprites:</u> <ul style="list-style-type: none"> • Environment sprites • Bat sprites and animations • Coin sprites and animation • Crystal and stalactite sprites • Enemy sprites <u>Backgrounds:</u> <ul style="list-style-type: none"> • City background • Sewer background • Map background <u>Item Icons:</u> <ul style="list-style-type: none"> • French Fry, Bottle Cap and Jersey icons • Mascara, Bouquet and Truffle Mulch icons • Keychain, Nail Polish and 2P Game icons <u>UI Elements:</u> <ul style="list-style-type: none"> • Shop dialogue box and item buttons • Dates dialogue box and story, choice and continue buttons • Map level, shop and date icons • Return, reload and exit level icons
Audio Media	<ul style="list-style-type: none"> • Puzzle level music • Shopkeeper music
Textual Media	<u>Font:</u> Chalk Board

2.13 Core Design

For our game to be playable, we want to have implemented all 10 puzzle levels, as well as the four storylines for all three of our characters, so that the two main sections of the game are fully completable. The final game must also implement all the global elements connecting the visual novel and dungeon crawler, such as the map and the store. The levels must be locked until the previous one has been

completed, and the stories locked until the previous story has been played and the appropriate item has been bought. A final key element of the game will be a tutorial split across the early levels, which will gradually explain to players the rules and mechanics required to traverse the levels by describing each feature as it becomes relevant. There also need to be indications of the structure and mechanics of the game embedded in character dialogue, as well as in visuals in both the map and the levels. Finally, there need to be basic UI elements allowing the player to travel between scenes and quit the game when desired.

2.14 Optional Features

Although optional, a feature that would improve the experience of the game would be a save and load system, allowing players to save their progress when exiting the game which would make it possible to complete the game in as many sittings as they like, rather than forcing them to play it all at once. This is relatively complicated to execute, and as it is not necessary for players' enjoyment or completion of the game it is something we plan on doing only if we have extra time. Additionally, there are a variety of visual elements that would improve the environment and players' immersion in the game but are not necessary for playability or understanding of the game. These include implementing movement animations for sprites in the levels, such as the player and the enemies, as well as creating nicer UI elements for features such as the stats and exit/reset buttons in the levels. In the same vein, the creation and implementation of a musical theme for the shop, map and/or character interactions, like the one for the levels, would add to the game but is not strictly necessary.

3 – DEVELOPMENT STATUS

3.1 Completed Features

So far, we have implemented the frameworks for all aspects of the game. We began in the dungeon crawler section of gameplay, creating a tile-based player movement system based on a grid of tile objects, and then creating the lighting and echolocation systems based on a system of dark overlays over the tiles. We went on to implement every type of obstacle and collectable. The echolocation-triggered events included enemy movement and the “death” of the player (resetting of level) upon collision, the incremental destruction of stalactites with the death of both enemies and the player if underneath them when they fall, and incremental crystal destruction. We also implemented coin collection, triggered when the player moves to a tile with a coin on it, and a sparkle that alerts players to the location of coins in the dark. A local coins-collected variable within each level is added to a global coin variable upon level completion. We also set up three different types of working win conditions (reaching a certain tile, killing all enemies, and destroying all crystals) which are chosen for each level during level design. So far, we have designed and implemented three levels, the first two having “reach end tile” win conditions and the third level requiring the destruction of all enemies. UI in the levels displays how many enemies and crystals remain in the level along with the number of coins collected, so the player knows how close they are to their goals, whether level-specific goals or coin collection. Several minor bug fixes and alterations for the levels have included delaying enemy movement in order to prevent

them from clipping through fallen stalactites, as well as altering the size of the coin sprite so that we will be able to place coins under crystals during level design, creating extra engagement for the player.

Next, in the visual novel sections of gameplay, we implemented a dialogue tree system which supports two choices after a question, with a unique response to each choice before returning to the main branch of the conversation. We also have fully implemented visuals for this section, with a displayed image during the dialogue of either the player or the NPC, depending on who's talking, and a side panel for the text display and buttons for the choices. Our system supports four total conversations for the NPC, each conversation being considered one "story". Dialogue for each story is initiated by selecting the appropriate button in an initial sidebar, where the buttons have different states and are either clickable or not depending on whether the story is unlocked. Initially, only the first story is unlocked, and the next three are unlocked by purchasing gifts for the NPC in the store. We have planned out the full arcs for each character, however, currently, we have only fully written and implemented the first two of four stories for each NPC.



Figure 5: Story selection for Wilhelmina, with all but the first story locked.

The store was the most recent section of the game to be implemented. It is set up similarly to the visual novel section, with an image of the shopkeeper in the center and items displayed on a side panel. There are three item slots, corresponding with the three romanceable NPCs, and when the item which unlocks one story is purchased, the item for the following story becomes available. There is an item description panel at the bottom of the screen which displays descriptive text and the cost of each item upon its selection. When the player clicks the "buy" button, the descriptive text changes to either confirmation of their purchase or a message informing them they do not have enough coins. The number of coins a player has is displayed at the top of the screen.



Figure 6: Items on display in the store, with the french fry selected.

The map is the central scene in the game. The “start game” button in the load screen leads to it, and it is where the player returns upon exiting NPC dialogue and exiting or winning levels. We implemented buttons in the map which connect the player to the shop, story selection for each of the three NPCs, and the 10 levels. Upon entering the game, all but the first level are locked, and further levels are unlocked upon completion of the previous level and purchase of the appropriate item. Global variables keep track of level completion as well as the number of coins the player has, which can be increased in the levels and decreased by purchasing gifts at the store.

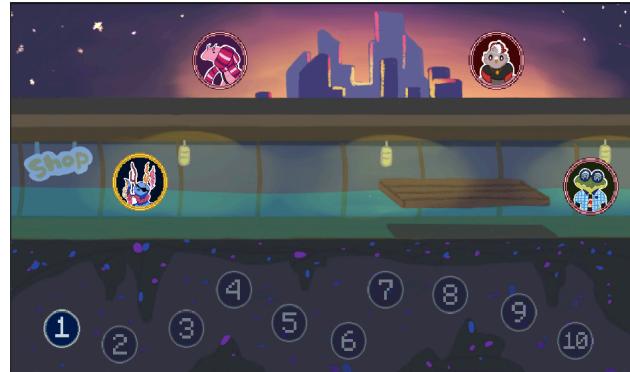


Figure 7: The map with icons for the store, NPC characters, and levels. All stages but the first are locked.

In all aspects of gameplay, we have a significant amount of sprites drawn and added to our UI elements for a more complete look, and we have chosen a font which is consistent through every scene. We also created and implemented a musical theme for the cave levels.

3.2 Remaining Features, Barriers, and Fallback Positions

In terms of remaining features, we have seven levels that still need to be designed and implemented, as well as the dialogue for two more stories for each NPC which need to be written and implemented. Both of these tasks are a matter of working within systems that are already in place, via object placement and setting variables. As the three arcs are all written by different people, we plan to go through them all once written to standardize the writing style and punctuation. As we have already mapped out full arcs for all the characters, writing will be a more trivial task compared to level creation, which will involve design. Our fallback position in case of failure to complete all 10 levels is to make slight adjustments to the prices of items and/or the number of coins in each level, so that the number of levels remains appropriate with the progression of the game’s story elements. Our absolute minimum target for completed levels is 5, to ensure some variety in the gameplay and a play time that isn’t too short.

Next, we still need to implement tutorial elements for the levels. These will consist of scenes between the map and the first few levels, which will give the player textual instructions on relevant game mechanics, starting with basic information about the controls for movement and echolocation before the first level. In the following two or three levels we will progress to information about the obstacles as they become relevant, such as how falling stalactites can kill you. We plan to give the player space to figure certain things out themselves, specifically that enemy attraction is prompted by echolocation, that enemies can kill you and that enemies can be killed by stalactites. If we run out of time, we can implement just one

tutorial with all the necessary information at the start of the first level, but we would ideally have the tutorial be incremental. We are also looking to make changes to optimize how the UI in the levels is displayed, so as to eliminate confusion about the player's goals without making our text, buttons and icons take up an obtrusive amount of space.

A final but very important element of our game which we still need to implement is an exit button, giving the player in-game means to exit our final program rather than being forced to use keyboard commands. The exit button will be available on the map and the load screen.

3.3 Playtesting Method and Target Demographic

To maximize feedback, we split the playtesting process into two parts. First, we held an in-person playtesting session with three participants. We followed the process described in class. When the session began, we established the “think out loud” protocol, and the fact that we would be observing without assisting them, then querying them about their experience afterwards. In practice, players were too absorbed when playing the game to explain their actions, so extra emphasis was placed on the final discussion instead. Next, we conducted a second round of playtesting using the same build with some players who could not be present for the initial session. For this group, we distributed a copy of the game and asked them to play and log their observations. A set of questions was provided to help organize these players’ thoughts. Moreover, some additional information, such as the control scheme, was given to these playtesters based on the results of the initial session in the hopes that they would unearth new issues.

In both groups, the players selected for the playtest were a mix of people experienced and inexperienced with video games, as we intend the game to be accessible and enjoyable for a wide range of players. Playtesters ranged from high-school age to young adults in their mid-twenties.

3.4 Problems in Design Revealed During Playtesting

Perhaps the most significant issue in the game’s design revealed during playtesting is the lack of direction in the game’s levels. A particular point of confusion was the controls of the game mechanics. While players intuitively knew how to navigate the point-and-click sections, almost all of them struggled with the puzzle levels. Players had to try pressing various keys before realizing that left-clicking moved their characters. Similarly, some playtesters did not discover the echolocation immediately either and thus were left with no options once faced with certain roadblocks. As the game designers, such issues related to controls were anticipated because no system has been implemented as of yet to explain these. Moreover, players had some trouble discovering the effects of the echolocation mechanic. It took many players quite a bit before realizing that enemies moved when they right-clicked to echolocate, thinking instead they moved randomly or with the player. Additionally, testers had little idea how the various obstacles, including crystals and stalactites, functioned or what their roles were. They discovered how these worked as they played. This seemed to work well with the crystals, but not for stalactites. Most players did not realize until very late in the session that stalactites could fall, blocking paths and crushing the player or enemies. The same is true for the goal of each stage; no player seemed to notice the UI indicating the level’s goal, which led to significant confusion in the third level which had a different win condition than the first two. In sum, it appears that adding tutorials to explain controls and mechanics over the first few courses, as well as improving the in-level UI, should address these concerns.



Figure 8: The cave UI as it appeared before (left) and after (right) the playtesting session.

Furthermore, similar confusion occurred with the dating portion of the game. Reception to the characters and their stories was largely positive, but it was not as evident as we had hoped for players how they related to the puzzle aspect of the game. Once again, a tutorial screen for the map and shop is likely sufficient for players to understand the relationship between the various phases of the game. On that note, playtesters confused the role of the items in the shop as “upgrades” for the levels due to them buying all the items then entering a level and finding they had a larger vision radius. In actuality, the vision radius varies by level, which misled players. It is believed that this confusion in particular stemmed from the unfinished shop, which was fully functional but without any flavor text or assets. Once added, it will hopefully help tip the player off that items are gifts for the romanceable characters and not upgrades. One more concern about the shop was that players could not see the number of coins they possessed, which was inconvenient. As a fix, a coin counter will be added to that screen.



Figure 9: The shop as it appeared before (left) and after (right) the playtesting session.

Moving on, useful feedback in level design was obtained from the playtesting groups. Players reported that the second and third levels of the game were more interesting and that the whole game should apply the same design principles. These levels are smaller in scale compared to the first two. They focus on creating interesting puzzles out of echolocating in confined spaces, having to dodge around enemies. This is in contrast to the first level, which is much more open and pushes exploration as its premise. This preference was noticeable in the player’s playstyles and attitudes. They became irritated when they died and started moving through the level at unintended speeds to attempt to make back their progress. It was evident that they started to lose interest after restarting the level several times. These behaviours were not observed in later levels. In response, this preference will be kept in mind when designing the remaining levels for the game, and the first level will be scaled down.

Lastly, issues with the implementation of particular mechanics and procedures were also revealed during the sessions. In the dating simulator portions, when players advanced the text too quickly, it would begin typing over itself. The text also had some errors in grammar and style consistency. In the caves, double-clicking the echolocate button caused odd behaviours with enemies. Also, enemies could unintentionally phase through fallen stalactites in certain situations. Other issues included overly punishing soft locks. Finally, the game also lacked an exit button, meaning players had to use a keyboard shortcut just to exit the game. All of these issues have or will be addressed in the future.



Figure 10: An enemy under a stalactite.

4 – MILESTONES TO COMPLETION

Finally, to ensure the project's timely completion, the following table outlines the milestones for the remaining weeks of the term.

Week	Milestones
March 17 to 23	<ul style="list-style-type: none"> • Implement the exit button. • Implement the tutorials and test their integration in the game. • Cause stories to unlock only once the previous story has been read. • Finish dialogue and standardize it across all three NPCs. • Design and submit the poster for the Creative Computing Showcase.
March 24 to 30	<ul style="list-style-type: none"> • Design and implement the remaining 7 levels. • Test for difficulty level, fun factors and fun blockers on the new levels. • Create music for the shop, dates and map screens. • Add animations for the enemies.
March 31 to April 6	<ul style="list-style-type: none"> • Add graphics to the title screen and win screen. • Complete the save mechanic. • Test that the complete game with saving functions works as intended. • Prepare for the Creative Computing Showcase and final submission.

APPENDIX A: Visual Media



Figure 11: The shop item icons.



Figure 13: The shopkeeper portrait.



Figure 15: Cave environment sprite sheet.

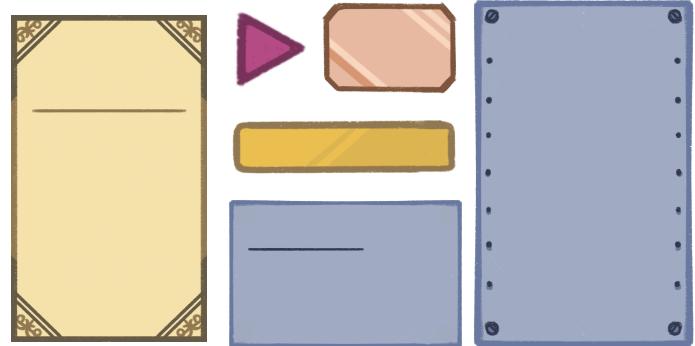


Figure 12: The visual novel UI elements.



Figure 14: Player and coin animation sprite sheets.



Figure 16: Crystal, coins, stalactite, and enemy sprites.