

Bitter Sweet: The Video Game

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POTENTIAL ADVISORS: Drew Castalia and Andrew Kemp-Wilcox

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Revision History Table		Template Date 6/15/2022
Version	Summary of Changes	Date
V 1.1	Added the User/Market Research Section	9/4/24
V 1.2	Finished the first proposal, setting the Gantt Chart	9/12/24
V 1.3	Final Product & Features section and Ethics section completed.	9/16/24
V1.4	1st Revised	9/17/24

1. Executive Summary

The Executive Summary was written by Laila Awadalla

Our team plans on creating a game 2D pixel RPG titled “Bitter Sweet.” The year is 1981 and the world is on the brink of destruction. An air of suspense and expectation hangs over someplace reminiscent of San Francisco, almost. Our lead character is a literal lemon-headed con artist who soured all of his relationships in the past. Arrogant and egotistical, the past coming to bite him back was the last thing on his mind. That was until Lime, his pet cat, had been taken hostage. Given his seedy relationships, the culprit could be anyone with a grudge against Lem. Lem only has one day before he inevitably evacuates the city. He will do whatever it takes to get Lime back and with the end of the world on the horizon he has nothing left to lose.

The game will explore the complexities of human relationships, which is illustrated by the difficulty Lem has on fostering genuine relationships with anyone besides his cat. This exists as a by-product of his life as a con artist and pathological liar. These issues will be explored through character interactions and player's choices. We chose to use the pre-apocalyptic setting in order to represent the detriment of human greed. Lem destroyed his relationships and corporate moguls destroyed the planet for money. Research into the psychology of trust and the effect capitalist ideologies have on our planet and psyche. Players will be forced to make choices through actions and dialogue that will ideally impact the ending.

The developmental process will involve building the game itself and doing research on the previously mentioned topics. Our team will create this game utilizing Unity and C# as well as artistic programs such as Procreate and Aseprite.

Because this product is quite complex, we have divided it among multiple team members as listed.

Team Member	Feature responsibility
Laila Awadalla	User Interface, character design, and narrative design
CJ Moissonnier	Game level design, character animation, sound programming
Joshua Villanueva	Gameplay design, programming
Haodong Qin	Gameplay Design, Programming, Tester

Table 1 Preliminary Feature Responsibilities

2. User/Market research

Overall market: The size of this market is considerably small and niche. According to Steam 2D story games accrued 200 million in net revenue as of 2024. These games are primarily single-player, and notable games in this genre are around 2-3 years old. Pixel games aren't often utilized to tell stories in the way we intend, historically they're cozy farming games or strategy games such as Stardew Valley and Octopath Traveler.

Existing competitors: Eastward (2021) according to the Steam Revenue calculator it is estimated that Eastward made \$16,341,085.95 in gross revenue since its 2021 release. Steam charts marked 13,882 active players in 2021 as its peak. On Steam alone, it now has 54 active players. However this does not include Nintendo Switch player data. Our product will be similar in respect to also being a story-driven RPG in an apocalyptic themed setting. We will differentiate ourselves with our story, game mechanics, and overall design.

Disco Elysium (2019) is an RPG game that was developed by an Estonian studio named ZA/UM. It received a 10/10 from IGN since this game is very story-rich and has a heavy critique of capitalism. The theme of Disco Elysium is a bit dark and depressing which may be similar to our own game. We will differentiate ourselves with our music and gameplay.

User insights: Condense this section Potential users include any person(s) who enjoy the 2D RPG genre. Based on the overall game market users will be predominantly male

and 18-25 years old. We conducted these interviews with our participants after or while they took our written survey.

Following our user research and interviews we gained valuable insight into player needs and desires. As we interviewed our potential users and recorded their answers, we discovered that many of their personal experiences with games were found through family or friends, starting at a young age. The users are experienced gamers and know what to look for in quality games. All of our users agreed that a strong narrative and character design, whether visual or in the plot, is what they look for when creating emotional connections to the game. As our game will be a story driven game, it's important that these key elements are our main focus when developing, as the story can fall short if there are unrealistic or it is hard to relate to the character's position.

For game mechanics, our interviewees had different inputs on what they would like to see. Common themes we discovered among all of our users included a desire to have choices that impact the story and challenges presented through puzzles. Seeing as our game is narrative based we'll be able to deliver a story that allows the player's choice to have an impact on the ending. Furthermore, we plan to unveil the story through character dialogue, interactions, and solving puzzles which will lead you to the end of the story. Our users also gave us insight on what made games fall short for them, thus providing us with knowledge of what to avoid when making our game. Users described rushed stories and a lack of engaging gameplay as the major issues that ruin a gameplay experience for them. We plan to make our gameplay as simple and engaging as possible so the player can be challenged and look forward to plot development.

Outside of gameplay alone, we asked users what else makes a game appealing to them. Many users agreed that an eye-catching art style and character's backstories are things that stand out to them when looking at games. Furthermore, there was a mutual appreciation for background music assisting in the overall immersion of the game. We will be mindful to create relatable characters who can resonate with players as well as represent them with a pleasing art style. In addition to this, music will be an integral factor in our game, especially since it takes place in the 80's which can be considered the height of music culture.

Boiling down the takeaways we gained from our user research we know we need to create a game with an engaging storyline, player impacted choices, and simple but satisfying mechanics. Paired along with those will be a pleasing artstyle, immersive music, and relatable characters.

3. Final Product Deliverable & Features

Feature 1: Multiple Playable Area

This section was written by Joshua Villanueva.

We plan to design and develop at least 3 playable areas for the players. These areas will consist of a 2.5D, top-down design that players will be able to walk and interact with nearby

objects as well as NPCs. As of time of writing, the current beginning area will revolve around our protagonist's city/suburb area. The following will be based at a nearby fish market. The final area will bring our players into a crime den of a potential suspect. Through these areas, our players can enjoy the world-building and art that drives the story of our game.



Feature 2: Inventory

This section was written by *CJ Moissonnier*

We plan to add an inventory mechanic that allows the player to pick up clues, whether it may be an item given by an NPC or an item that is picked up by the player. This mechanic will not have a hotbar but instead can be accessed by the UI system or using a hotkey. As this is a narrative-based game, it's important to have access to information collected by the player and refer back to it, especially for a puzzle or to unlock something.



(This version is based on hotkey/button access from Red Dead Redemption 2)

Feature 3: Puzzles

This section was written by Joshua Villanueva.

The core obstacles of the game will be a variety of puzzles involving the objects located within world space. One inspiration for this would be the dungeons scattered around The Legend of Zelda series, where players must think of what tools and abilities available to them are best suited for the environment around them. Each level will have at least one overarching puzzle they need to solve to reach the final sub-zone of that area.

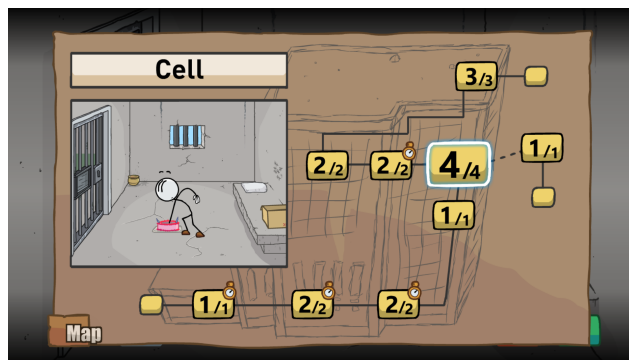


Feature 4: Autosaving and Checkpoint

This section was written by Haodong Qin.

We plan to develop an autosaving and checkpoint system. We want our players to review all Endings without playing the whole game again over and over. The autosaving and checkpoint system could save the game before the players made the choice. It exists in some games such as Henry Stickman, some JRPG games, and visual novels.

It saves a lot of time for the players to discover more stories, also it prevents players from getting frustrated and losing patience with that game, which causes negative reviews.



(Example of how the checking point system looks like in Henry Stickman.)

Feature 5: Reviewing System

This section was written by Haodong Qin.

We plan to add a reviewing system. Once the gamer finishes the game with a certain ending, the game will pop up some basic review, to explain the result why the ending happened,

and some interesting words to describe the gamer's choice. The original one is from Henry Stickman. When the gamer makes a bad choice, for example during the trial if the lawyer uses false evidence that will pop up such sentences.



4. Project Timeline & Gantt Chart

Milestone	Date
Team Formation	9/3/24
First Draft Proposal	9/17/24
Mentor Contact	9/??/24
Second Draft Proposal with Mentor	9/24/24
Signed proposal	10/1/2024
Reference Character Sheets Completed	10/1/24
Level One Layout (Gray Boxing)	10/6/24
Basic Gameplay Mechanics	10/13/24
Character Pixelation	10/13/24
Checking Saving Point Mechanic	10/22/24
Puzzle Design	10/22/24
Character Animation	10/25/24
Level Two Design Layout	10/31/24
Level Design	10/31/24
Level Three Design Layout	11/14/24
Achievement Design	11/14/24
Art and Design Input	11/14/24
Poster Demo	11/26/24
Walkthrough	12/9/24
Debugging Code	12/9/24
Debugging Design	12/9/24
Poster	12/9/24
iShowcase	12/11/24

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Table 2: Milestone Schedule

Gantt Chart

5. Ethics

#	Question	Generally	Data Breach
1	Could a user sell drugs or other illegal items on your platform?	Y/ ☒ /M	Y/ ☒ /M
2	Could a user of your platform engage in sex trafficking?	Y/ ☒ /M	Y/ ☒ /M
3	Could a user sell class notes or cheat on their homework on your platform?	Y/ ☒ /M	Y/ ☒ /M
4	Could a stalker use your project to find someone?	Y/ ☒ /M	Y/ ☒ /M
5	Could your app be used to spy on or track individuals?	Y/ ☒ /M	Y/ ☒ /M
6	Could your app/software access the camera or microphone and record things without users being aware?	Y/ ☒ /M	Y/ ☒ /M
7	If someone uses your platform, could they be re-traumatized or have their mental health impacted in some way?	Y/ ☒ /M	Y/ ☒ /M
8	Could your algorithm promote material that would traumatize or upset individuals?	Y/N/ ☒	Y/ ☒ /M
9	Would your users be upset if the data you collect was given to someone else?	Y/ ☒ /M	Y/ ☒ /M

	Could a data leak potentially lead to identity theft?	Y/ ☒ N/M	Y/ ☒ N/M
10			
	If your site was hacked, would users of that product potentially lose their job, spouse, or family?	Y/ ☒ N/M	Y/ ☒ N/M
11			
	Should there be an age limitation on your product?	☒ Y/N/M	☒ Y/N/M
12			
	Could someone use your product to find, contact, and potentially commit elder abuse?	Y/ ☒ N/M	Y/ ☒ N/M
13			
	If the data on your platform was breached, could it be used to blackmail the users?	Y/ ☒ N/M	Y/ ☒ N/M
14			
	Does the existence of your project imply that a particular racial group, gender, religion or other protected category is inherently bad, gross, or unwanted?	Y/ ☒ N/M	Y/ ☒ N/M
15			
	Could your product be used to commit hate crimes against a specific group?	Y/ ☒ N/M	Y/ ☒ N/M
16			
	Does the primary content of your game or algorithm focus on something considered deeply unethical?	Y/N/ ☒ M	Y/N/ ☒ M
17			
	Does your game or software contain race, gender, or other stereotypes?	Y/ ☒ N/M	Y/ ☒ N/M
18			
	Could users of your app scam other individuals?	Y/ ☒ N/M	Y/ ☒ N/M
19			
	Is your particular algorithm biased towards predicting correctly only for one race, gender, or other group?	Y/ ☒ N/M	Y/ ☒ N/M
20			

	Are the users of your project, players of your game, or those being surveyed for your data aware of how their data will be used?	Y/N/ ☒ M	Y/N/ ☒ M
21	What are the possible misinterpretations of your results? For example - would a white supremacist or misogynist be stoked about your results if they misinterpreted it?	Y/ ☒ N/M	Y/ ☒ N/M
22	Does the use or purchase of your data potentially contribute to a dangerous group or regime?	Y/ ☒ N/M	Y/ ☒ N/M
23	Could your virtual reality environment cause injury to the user?	Y/ ☒ N/M	Y/ ☒ N/M
24	Are your study participants or game players aware that their data will be collected and used?	Y/N/ ☒ M	Y/ ☒ N/M
25	Does your game or app contain addictive design elements without benefit to the user?	Y/ ☒ N/M	Y/ ☒ N/M
26	Does your survey contain an aspect of compulsion or unusually large incentive, that would command users to take it even if it was to their detriment?	Y/ ☒ N/M	Y/ ☒ N/M
27	Could your research outcomes harm an individual or entity?	Y/ ☒ N/M	Y/ ☒ N/M
28			

Ethics Reasoning

7. We will add a disclaimer and warning about the inappropriate content in the introduction of the game.

12. We will rate our game to be suitable for those 13 and older(T-rated in ESRB).

17. We will add a disclaimer and warning about the inappropriate content in the introduction of the game.

21 & 25. Instead of collecting the data directly, we will send the survey randomly to improve our game.

6. Approvals

The signatures of the people below indicate an understanding of the purpose and content of this document by those signing it. By signing this document, you indicate that you approve of the proposed project outlined in this Statement of Work, the division of work, the Ground Rules and that the next steps may be taken to create a Product Specification and proceed with the project.

Approver Name	Title	Signature	Date
	Team Project Manager	Laila Awadalla	9/17/24
	Team Member		
	Team Member		
	Team Member		
	Project Manager		
	Advisor		
	Instructor		

Section	Author	Word Count
Executive Summary	Laila Awadalla	190
User/Market research	Laila Awadalla & CJ Moissonnier	
Features		
Gannt Chart		
Ethics		

7. Appendix

- 1) Project Team Responsibilities

- The Project Manager will set up and facilitate a weekly call/meeting with the Faculty Advisor. The Project Team will provide weekly status updates to the Faculty Advisor including upcoming deliverables, critical issues, and any adjustments to the Project Plan.
- Documents will be provided to the Faculty Advisor with adequate time for review and signature. The time necessary for review will be agreed with the Advisor. The minimum review time will be 3 days prior to the document due date.
- Design files will be provided to the Faculty Advisor as requested in a format agreed to with the Advisor.
- Support requirements will be clearly requested from the Faculty Advisor with the dates required and an adequate time for fulfilling the request.
- Modifications requests to the Project Plan by Faculty Advisor will be reviewed and agreed to within 1 week of the request.

2) Faculty Advisor Responsibilities

- The Faculty Advisor will provide knowledge and expertise to help the group stretch their skills.
- The Faculty Advisor will participate in a weekly or bi-weekly call/meeting with the Project Team to review the project status, upcoming deliverables, priorities, issues, and progress to the agreed Project Plan.
- The Faculty Advisor will provide document review, feedback and approval, rejection, approval with contingencies with adequate time for the Project Team to meet the course due dates.
- The Faculty Advisor will provide feedback to requested support requirements from the Project Team. This includes feedback and guidance on design implementations decisions, design files, test plans, test procedures and test results.
- The Faculty Advisor shall provide technical advice and guidance to the Project Team answering inquiries approximately 1 hour per week.
- Modifications to the Project Plan by the Project Team will be resolved and documented within 1 week of the request.
- Grade the finalized project using a skill-based rubric
- Attend iShowcase in May.

A. Ground Rules

As a team and as individual team members, we agree to:

1. Stay focused on our objectives and goals.

Each time the team meets, we will clearly define our objectives and desired outcomes at the beginning of the meeting. We will politely remind team members if we are getting off track.

2. “Sidebar” any issues that are relevant but not consistent with the immediate objectives.

Occasionally, important matters are raised that are not relevant to the immediate goals of the meeting. To keep the group on track, but avoid losing the issue, create a “sidebar” where these topics can be listed and discussed later.

3. Listen when others are speaking.

We will listen and consider others’ input before adding our own comments.

4. All viewpoints will have an opportunity to be heard.

We understand that some team members may be quieter than others. We will make an effort to get each team member’s viewpoint and that no one dominates the discussion.

5. Differences of opinion will be discussed respectfully

We will identify areas of agreement before assessing areas of disagreement. We will encourage each other to look beyond our own point of view. We will discuss different ideas respectfully. As a team, we will weigh the merits of different opinions and agree on a process for choosing a direction. All team members will respect and follow the decision or direction.

6. Look for the good points in new ideas.

We will endeavor to explore the value in each idea as we assess and select our path forward.

7. Focus on the future, not the past.

We will use our past experience to inform our decisions, but focus the discussion on the future

objectives. Blame for past performance is counterproductive, we will focus on finding solutions.

8. Agree upon specific action items and next steps.

At the end of each meeting and discussion, we will summarize and agree on specific next steps, action items and assignments.

9. Accountability

As team members, we will each be responsible for our individual assignments and contribution to achieving the team objectives and goals. We will honor our responsibilities and not let our team members down.