Game Design Document (GDD)
Algoma University
TEAM 1

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2. **Links:**

   Video: Gameplay
   Game: APK+Source Code

3. **Game title.** Where is my father?

4. **Game Introduction.**
   4.1 Game Concept.
   The concept is about a man whose father was a steel plant worker. His father disappeared one day when he was young and now (in the game) he revisits his father's old place of work to find out what happened to him. The protagonist Alex Hammond explores the factory along with another character named Dr. Rachel Turner. The player needs to look for clues that may explain what happened around the factory. Moreover, find keys to unlock doors that lead to different areas of the factory. In the end, the player fights the main boss (Forge Warden).

   This game concept is chosen to increase the player engagement, where the story revolves around the protagonist. By adding a mystery element to the game, it will enhance the player's interest to explore the whole game and find out about his father.

   Similar to other video games, our title is self-explanatory, telling a bit about goals. The title itself shows the story is going to be emotional. When the game starts there will be enemies but not so strong that the player can't beat them on the first try, which is true for most of the commercial games as the player needs time to set themselves up in the environment. Additionally, there will be a boss fight at the end, which is going to be more difficult to beat relative to other enemies which aligns with the expectations of the player from this genre's games. Despite following the same skeleton structure, we have added multiple things which we'll be discussing in upcoming sections to give players a fresh experience instead of getting bored.

   4.2 Game atmosphere.
   This is a pixel art-based game with a 2D Top Down Perspective. In addition, sound effects are added to the player's attacks or interactions with objects in the game. A soft piano and

ambient soundscape are used for the background music to create a sense of melancholy and suspense.

A soft piano and ambient soundscape help the player to experience the intense and dark vibes, where other sound effects like attacks, collecting coins, etc. will give the player instant feedback that action has been executed. Lastly, pixel art-based game with a 2D Top Down Perspective makes the game visually appealing for the players and also computationally efficient for the device it will be played on.

4.3 Game theme. Adventure, Mystery, Industrial
We chose this theme and concept because it adds an element of suspense to the game and may raise questions such as whether the protagonist will meet his father or not. As discussed in the concept section, it will add a suspense and mystery element to the game, and enhance the player's curiosity and immersion.

4.4 Platform and development tools. Windows, Android, Unity, Blender, Photoshop, Aseprite.

5. **Gameplay Description.**
   5.1 Players. Players should be older than 14 years old because the game introduces some tetric themes and soft violence. The game model is Player vs. game. The player's avatar is a young boy who is in search of his father.

   5.2 Game goal(s). Survive and find your father. Recollect items and clues to do this.

   5.3 Challenge(s). Fight enemies. Solve the puzzles around the scenario. Find out about your father.

   5.4 Procedure(s).
   Main task to find your father:
   1) Recollect all the main keys
   2) Avoid enemies
   3) Find the red hall
   4) Introduces the keys in the correct order
   5) Fight the main boss
   6) Talk to your father

   5.5 Rules.
   Players can pick items that are close to them.
   If health is 0 player loses the game.

   5.6 Resource.

   Health
   Weapons
   Keys
   Coins

5.7 Conflict. Stay alive while enemies try to kill you. Solve puzzles.
    4.7.1 Obstacles. Enemies attack and chase the player. Puzzles need specific solutions and find all the clues in the level.
    4.7.2. Opponents. NPC.
    4.7.3. Dilemmas. The player will discover that the enemies are the old workers of the steel plant.

    5.8 Boundaries. The walls of the steel plant. The steel plant main door locks once the player enters.

    5.9 Outcome. Player fights the main boss (Forge Warden) and finds his father (win state) or he surrenders/dies (loses state).

6. **Mechanics.**

Core mechanics:
- Move the character (Joystick), allowing him to escape from enemies or move around the scenario.
- Use current item / Attack if the current item is a weapon (Attack Button)
- Can equip speed and damage powerups by using coins which are deducted as long as the player uses those powerups.
- Interact with scenarios or objects (Interact button), from pulsing buttons to picking items.
- Items are displayed in the inventory tab.
- Coins can be used to heal and obtain shields using the bending machines.
- The game will restart from the beginning when player dies.

7. **Reward System:**

Following are the things that can be achieved by using our proposed virtual currency/reward system:
a) **Healing:** The primary purpose of our game currency is to enable players to restore their health to maximum so that players can afford to have few attacks from the enemies without dying. The healing icon can be accessible only if player health is not full and they can observe their health status through well integrated Diegetic UI, which we have placed in a way that it interferes with the gameplay as minimal as possible. The reason behind allowing players to heal up whatever time they want is to create a decision-making process for the players, which will further help the players keep engaged in the game.
b) **Boost powers:** The second purpose of our game currency will be helping the players to boost their powers for some time. Once that time is over, players will restore their original powers. If somehow, the player would be surrounded by many enemies, this feature can be used to save the player's life and kill the enemies. Two types of power-ups will be provided in the game:
    i) **Faster Movement:** This gives the player the ability to move faster than its actual speed to escape the enemies and take the fight one by one, instead of being surrounded by them.

ii) **Increased Damage:** This ability can be used to increase the damage of the player attack, which will help the player to kill the enemies in fewer attacks than normal. Again, this ability would be time limited and the player must have chosen between using it now or to save for upcoming challenges.

c) **Upgrade Health:** This option allows players to purchase a kind of armor for them. Basically, it does not affect the health bar when equipped but will vanish when attacked by the enemy. Additionally, it persists for the whole game, unlike the duration of the power-up.

This was all about how the player can use the virtual currency/reward system of our game. Now, let's see how we can earn this in-game currency:

a) **By exploring:** We distribute the coins across the game world, which means to collect those coins, players must have to keep exploring the game and make progress towards the game. These coins are randomly distributed throughout the game, without being marked on the map, which enforces the player to have proper look at every space.

b) **By completing the puzzles/challenges:** Players will be offered some puzzles and challenges in order to earn more coins. After solving it completely and correctly, they can earn a few more coins to increase their chances of winning.

8. **Game Story:**

Backstory: The protagonist, Alex Hammond, grew up in the shadow of a massive steel plant in the small town of Forgeville. His father, David Hammond, toiled away in the heart of the plant until he mysteriously vanished when Alex was just a child. The town's authorities were unable to unravel the truth, and the incident became a haunting urban legend.

Years later, Alex stumbles upon an old journal of his father, filled with cryptic notes and sketches hinting at something sinister within the steel plant. Determined to uncover the truth behind his father's disappearance, Alex returns to the now-abandoned steel plant.

Sequence of Events:

1. **Introduction:**
   ○ Alex arrives at the desolate steel plant, now overgrown with rust and decay. The atmosphere is eerie, and the air is thick with mystery.
   ○ As he explores, Alex discovers remnants of his father's past work, unlocking memories and clues that point to a secret project within the plant.
2. **Unveiling the Mystery:**
   ○ Alex encounters a group of former plant workers who reveal that his father was involved in a groundbreaking experiment aimed at harnessing the plant's unique properties for a powerful purpose.
   ○ The experiment went awry, leading to a catastrophic event that resulted in his father's disappearance and the abandonment of the plant.
3. **The Journey Deepens:**

- ○ Alex delves deeper into the plant, facing environmental hazards, puzzles, and hostile remnants of the failed experiment.
- ○ Along the way, he uncovers the existence of the clandestine organisation known as "The Alloy Syndicate," which manipulated the experiment for their gain, putting the entire town at risk.

4. Allies and Adversaries:
- ○ Alex befriends a former scientist who worked alongside his father, Dr. Rachel Turner, providing valuable insights and assistance.
- ○ He encounters various non-player characters, some supportive and others serving The Alloy Syndicate, adding layers of complexity to the narrative.

5. Confrontation:
- ○ Alex confronts the leader of The Alloy Syndicate, a formidable adversary who possesses enhanced abilities due to the experiment's fallout.
- ○ The final showdown takes place within the heart of the steel plant, where the truth behind his father's disappearance is revealed.

6. Resolution:
- ○ The game concludes with Alex making choices that determine the fate of the steel plant and the town.
- ○ The resolution may involve confronting the consequences of the experiment and deciding whether to expose the truth or keep it hidden to protect the town.
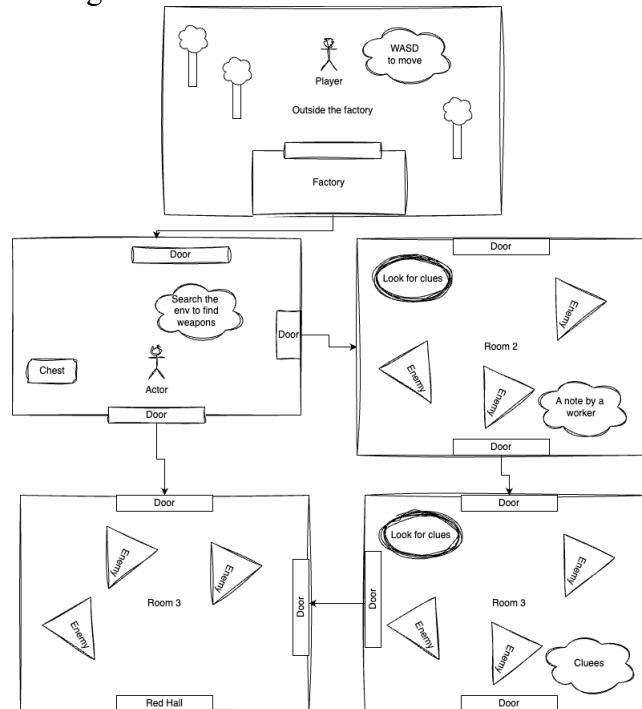
9. Game User Interfaces (UIs).

This game uses a diegetic UI compatible with mobile screens.
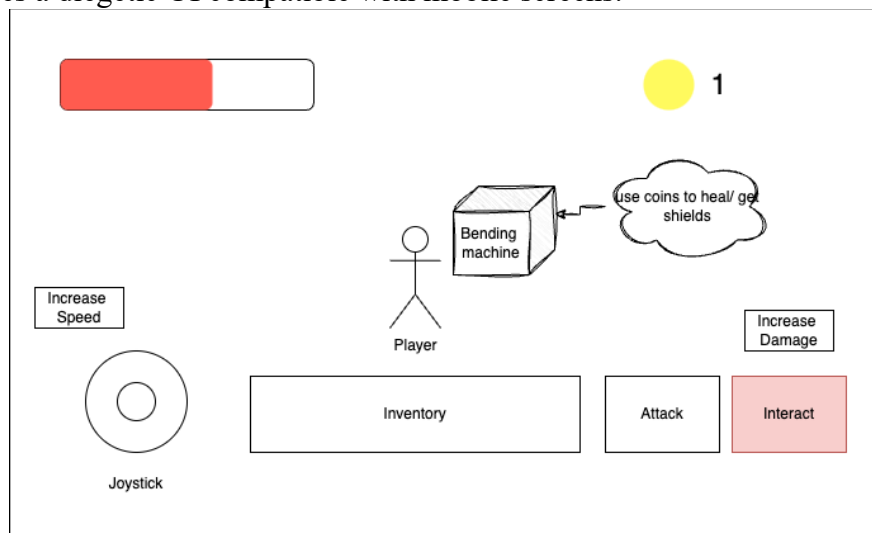
10. Level layout(s).

The game begins outside the factory where the player will be introduced to basic game mechanics and how resources can be obtained using coins. After entering the factory, the player will have to look for clues in rooms and fight potential enemies, the ultimate goal is to reach the Red Hall where his father might be.

WASD to move
Player
Outside the factory
Factory

Door
Search the env to find weapons
Chest
Actor
Door

Look for clues
Enemy
Room 2
Enemy
Enemy
A note by a worker
Door

Door
Enemy
Enemy
Room 3
Enemy
Red Hall

Door
Look for clues
Enemy
Room 3
Enemy
Enemy
Cluees
Door

11. Characters.

Characters:

Playable Character:

- **Alex Hammond:**
  - Role: Protagonist seeking the truth about his father's disappearance.
  - Outfit: Wears a rugged, industrial-style outfit with protective gear.
  - Weapons: Improvised tools, such as a modified welding torch and a makeshift steel pipe.

Non-Player Characters:

1. **Dr. Rachel Turner:**
   - Role: Former scientist who helps Alex navigate the dangers of the steel plant.
   - Outfit: Wears a worn lab coat and carries a portable analysis device.
2. **The Forge Warden (Boss):**
   - Role: Former plant foreman mutated by the experiment, now a formidable adversary and agent of The Alloy Syndicate.
   - Outfit: Wears a distorted, metallic exoskeleton.
   - Powers: Controls and manipulates metal, creating obstacles and launching powerful attacks.

3. **Agent Blackwell:**
    - Role: Operative of The Alloy Syndicate, serving as a recurring antagonist.
    - Outfit: Dressed in a sleek, black operative suit.
    - Weapons: High-tech gadgets and a concealed energy weapon.

12. Game story complies to three requirements:

a) **Credibility:** As we know, if players believe in the story and its characters, this means the story is credible. Keeping this principle in mind, we haven't exaggerated the story that far , where it becomes unbelievable and causes the whole thing to be flawed. As we saw the concept, the player has come to plant to find out the reason behind his father's disappearance and to save him, which can happen in reality.

b) **Coherence:** We have designed the game levels in a properly organized way keeping some connections across the levels. Keeping the levels structured in this way increases the game's coherence and provides a sense of being connected to the game. While testing the game, we have removed some elements which were proposed earlier, it's just because they were deviating the game from the main storyline, making it disconnected, and could have bored the players.

c) **Dramatically Meaningfulness:** As we discussed the game concept in detail, we have seen many dramatic meaningful aspects of the game. As said, the game revolves around a protagonist whose father disappeared from his worksite and he goes there to save him. This idea brings a kind of emotional thing to the game and enhances the dramatic meaning of the game.

13. General Principles of UI design:

A subtle and non-intrusive diegetic UI is incorporated to indicate the player's health status. This UI remains consistent throughout the game and uses the same typeface to avoid confusion. The health bar and coin tracker are positioned in a way that ensures when to use their resources and make informed decisions based on their situation. There are no random, uncontrollable events in the game that may be unfair to the player. However, this does not affect the DDA and the game will gradually become tougher, but the player can still use powerups and heal whenever necessary. Also, the buttons and joystick used in our UI are easily accessible which prevents players from physical stress. When players collect coins, they can interact with bending machines that can help them heal and buy shields. In addition, whenever a button is pressed its color is changed to indicate that its pressed. Buttons for powerups such as extra speed and damage are also added and when its pressed, an icon appears on top near the health bar. Inventory displays items obtained from chests.

14. Game flow: Our game provides continuous player engagement from the beginning to the end. Levels are designed so that they are not too difficult or too easy for players. The narrative keeps the players engaged in the story and explore the environment more as the goal requires them to discover the reason behind the disappearance of his father. It is suitable for both beginner and experienced players as it is easy to get accustomed to the game mechanics. Enemies follow the player which makes the game more challenging. If the player's health decreases substantially, they can use coins to heal and upgrade their armor. This allows players to prepare for fighting upcoming enemies in the game. Therefore, keeping the player fully involved in the game.

15. **Character Designs:** Characters are taken from external sources which are added to the asset links section.

16. **Proposed Sensors and Actuators:**
For this prototype, we haven't included any sensors and actuators. However, considering them as future work, we will look into adding vibration sensors that trigger the vibration when the player collides with explosive materials like bombs. This gives a player a kind of feedback, that their health significantly decreased due to its impact. Consequently, we would like to consider adding more actuators in our future work.

17. **Assets list.** List here the sound effects, music background, and sprites (including sprites of weapons, resources, etc.), briefly describing each.

- ❖ Music
    - ➢ Track 1: Mystery unresolved
    - ➢ Track 2: Steel jungle
    - ➢ Track 3: Dead
    - ➢ Track 4: Who is father
- ❖ Sound effects:
    - ➢ Walking
    - ➢ Attacking
    - ➢ Interacting
    - ➢ Damage
    - ➢ Dead
- ❖ Models
    - ➢ Main character
    - ➢ Enemies
    - ➢ Scenery
    - ➢ Main items
    - ➢ Props
- ❖ UI
    - ➢ Health bar
    - ➢ Item list
    - ➢ Inventory
    - ➢ Controls

Asset Sources:

Sound effects: https://leohpaz.itch.io/rpg-essentials-sfx-free
https://assetstore.unity.com/packages/audio/sound-fx/free-casual-game-sfx-pack-54116
Used BFXR for sound effects

Characters, Enemies: https://game-endeavor.itch.io/mystic-woods

Powerups, Other assets: Designed by Alex

UI: https://mounirtohami.itch.io/pixel-art-gui-elements

Fonts: https://assetstore.unity.com/packages/2d/fonts/free-pixel-font-thaleah-140059