In the development of my 2.5D platformer game, I will take advantage of Unity's asset store for props due to limited experience in animation and 3D modelling. The game design revolves around creating a level where the player finds three items to interact with, ultimately opening a door.

**Functional Requirements:**

*Must Haves:*

1. **Platforms:**
   * The game must feature navigable platforms for player movement and jumping.
2. **Character Controller:**
   * Implement a functional character controller enabling player movement, jumping, and environment interaction.
3. **Interactive Props:**
   * Include essential props that players can interact with to progress through the game.
4. **Door Mechanism:**
   * Implement a door mechanism that opens when the player interacts with all required props.

*Should Haves:*

1. **Enemies:**
   * Include challenging enemy characters to add an element of difficulty.
2. **Sound Effects:**
   * Integrate sound effects for in-game actions like jumping, item collection, and prop interaction.
3. **Player Animations:**
   * Implement animations for player actions such as running and jumping.

*Could Haves:*

1. **Multiple Levels:**
   * Design the game to accommodate multiple levels with increasing difficulty.
2. **End Screen:**
   * Include an end screen to acknowledge player success upon completing a level.
3. **Heads Up Display (HUD):**
   * Display a HUD indicating player health and objective count.
4. **Objective Count:**
   * Include a counter to track the number of objectives the player needs to interact with.

*Would Like to Haves:*

1. **Multiple Weapons and Power-Ups:**
   * Implement various weapons and power-ups for player acquisition during gameplay.
2. **Score System:**
   * Include a scoring system rewarding players for completing objectives and defeating enemies.
3. **Timer:**
   * Implement a timer to add urgency and challenge to the game.
4. **Cutscene:**
   * Integrate cutscenes for storytelling and transitions between levels.

**Non-Functional Requirements:**

1. **Performance:**
   * Ensure smooth gameplay across various devices for a positive user experience.
2. **Scalability:**
   * Design the game architecture to support additions of new levels, characters, and features.
3. **User Interface (UI) Design:**
   * Craft an intuitive and user-friendly UI for easy player interaction.
4. **Accessibility:**
   * Make the game accessible to players of varying skill levels, maintaining a balance between challenge and accessibility.
5. **Cross-Platform Compatibility:**
   * Aim for cross-platform compatibility, allowing the game to run seamlessly on different devices.
6. **Sound Design:**
   * Develop a sound design that enhances the gaming experience and complements the visuals.
7. **Bug-Free Gameplay:**
   * Minimize bugs and glitches to provide a smooth and enjoyable gaming experience.
8. **Responsive Controls:**
   * Ensure controls are responsive, enhancing player engagement and usability.
9. **Graphics Quality:**
   * Maintain a consistent and visually appealing art style throughout the game.
10. **Documentation:**
    * Provide thorough documentation for future development and updates, facilitating collaboration among developers.

The game's simplistic initial design serves as a beginner-friendly introduction, allowing players to familiarize themselves with controls and mechanics. Subsequent levels can introduce more challenges, adhering to the progression style of classic 2.5D scroller games like Castlevania and Mega Man. The gradual increase in difficulty aims to make the game accessible to players new to video games without immediate discouragement.

Testing

|  |  |  |  |
| --- | --- | --- | --- |
| function | Expected output | output | Comments |
| When the player presses the “d” key | The Player model should move Right | The Player model moves Right | Current bug player model goes missing and teleports around the screen along with clipping through floors |
| When the player presses the “s” key | The player model should move left | The player model moves left | Current bug player model goes missing and teleports around the screen along with clipping through floors |
| When the player presses the “spacebar” | The player model should jump | The player model jumps | Current bug player model goes missing and teleports around the screen along with clipping through floors |
| When the player moves | When the player moves the camera should move with them | When the player moves the camera moves with them | Current bug player model goes missing and teleports around the screen along with clipping through floors |
| Player interacts with the objective item | The objective item should play a sound effect | Not available for testing | The objectives script is not setup due to trying to fix clipping and animation issues |
| When all 3 objectives are interacted with | The door should open | Not available for testing | The objectives script is not set up due to trying to fix clipping and animation issues |
| Enemies should move | The enemies should move and try to attack the player | Not available for testing | Due to trying to fix the clipping and animation issue this is not available for testing as I cannot get the character up to these platforms without placing him there |

**https://github.com/cal-greig/Games-Development--public.git**