Title

- **Game Title**: Debt Runner: WangBu's Journey
- **Name**: Binh Nguyen

High Concept

- **Elevator Pitch**: In *Debt Runner*, you play as WangBu, a former billionaire who is now broke and running to collect coins to pay off his massive debt. Avoid obstacles and collect as many coins as possible to achieve the highest score—without losing your life to debt!
- **Game Genre**: 3D Endless Runner game
- **Platform and Target Demographics**: PC only; target audience is casual gamers aged 10–30.
- **Features**:
    1. Endless running with increasing difficulty.
    2. Collectible coins along the path, contributing to the player's score.
    3. Obstacles that players must jump over and dodge left/right.
    4. Game-over condition upon collision with obstacles.
    5. Infinite scoring system that tracks the player's ability to collect coins.

Gameplay

Setting and Introduction:

- **World**: The game is set in a generic urban environment, featuring streets and business districts as WangBu's running path.
- **Player Character**: WangBu, a once-successful businessman who has fallen from grace, runs to collect coins in a desperate bid to escape bankruptcy.
- **Backstory**: WangBu's businesses collapsed under massive debt. Now, he runs endlessly, collecting coins in the hope of recovering some of his fortune while avoiding obstacles that symbolize his failures.

- **Main Objective**: The player must avoid obstacles and collect coins to achieve a high score.

Game Mechanics:

- **Movement**: The player automatically runs forward and controls side movements and jumping.
- **Jumping**: Press **Spacebar** to jump over obstacles.
- **Side Movement**: Use **A/D** or **Left/Right Arrow keys** to dodge left or right.
- **Obstacle Collisions**: Colliding with an obstacle results in game over.
- **Coin Collection**: Coins are scattered randomly on the path. Collecting coins increases the player's score.
- **Progression System**:
    - Game speed increases by 10% for every 2 coins collected.
    - Obstacles spawn more frequently as difficulty progresses.

Game Content

Art Assets:

- **Environment**: A basic urban street design. Placeholder textures have been used for simplicity.
- **Character Model**: WangBu, dressed in a casual version of his former business suit, representing his fall from wealth.
- **Obstacles**: Includes fences and barriers, placed randomly on the player's path.
- **Coins**: Coins are represented by textured cylinders resembling gold coins.

Sound Effects:

- **Background Music**: A fast-paced, looping track that increases immersion and reflects the game's intensity.
- **SFX**: Includes distinct sounds for jumping, coin collection, and game over.

UI Components:

- A live-updating coin counter is displayed at the top-left corner of the screen.

- **Game Over Screen**: A UI panel with a "Game Over" message and a replay button.

Appendices

Appendix A: Discussion of Final Submission

- **Implemented Components in the Final Project**:
    - Endless running mechanic with jump and side-movement controls.
    - A coin collection system with visual and auditory feedback.
    - Dynamic difficulty progression tied to the number of coins collected.
    - An obstacle system with randomly spawned barriers.
    - A "Game Over" state triggered upon collision with obstacles, showing a replay screen.
    - Responsive controls for keyboard inputs (A/D and Left/Right Arrows).
- **Placeholders in the Final Project**:
    - Basic textures and environment models.
    - Simplified procedural generation for coins and obstacles.
- **Removed or Non-functional Components**:
    - The originally planned "Debt Meter" was replaced with an infinite coin scoring system.
    - Advanced environmental effects and polished animations were deprioritized to focus on core mechanics.

Appendix B: Exploration of Advanced Topics

- **Dynamic Difficulty Progression**:
    - Speed increases dynamically as coins are collected, ensuring a consistent challenge.
- **Feedback Systems**:

    - Coins trigger sounds for immediate feedback, enhancing player engagement.
- **UI Integration**:
    - Live coin counter using TextMeshPro dynamically updates during gameplay.
- **Animation Blending**:
    - Integrated smooth transitions for jumping, running, and death animations using Unity's Animator Controller.

Appendix C: Final Game Review and Notes

- **Development Notes**:
    - Debugging the ground looping system took significant effort to ensure it aligned with obstacles and coin placements.
    - Fine-tuning the speed progression was challenging to balance difficulty for new and experienced players.
    - The replay system integrates smoothly with Unity UI, allowing for a seamless restart.
- **Grading and Testing Notes**:
    - Test the coin counter (top-left corner) to ensure it updates correctly during gameplay.
    - Observe progression: Game speed increases every 2 coins collected.
    - Check obstacle spawn timing for increasing difficulty.
    - Verify sound effects for coin collection.
    - Test all controls (A/D, Left/Right Arrows, Spacebar) for responsiveness.
- **Asset Integration**:
    - Coins, sound for coin collected, street, and environment textures from Unity Asset Store.
    - Basic character and obstacle assets adapted from course-provided prototypes. Also, sounds for background and jump is from there.

- Custom scripts for mechanics, such as obstacle movement and coin spawning.