Game Design Document: Out of Sight

1. Game Overview

Title: Out of Sight

Genre: 2D Endless Runner / Reflex Platformer

Platform: PC (Unity Engine)

***Target Audience*:** Casual and core gamers interested in fast-paced reflex challenges and minimalistic design

Elevator Pitch:

Out of Sight is a gravity-defying endless runner where the player must survive in a visually minimal world by switching gravity to avoid obstacles. With the camera auto-scrolling, falling out of view or hitting traps means instant failure. The game delivers an intense emotional arc—from anxiety to satisfaction—with each second of survival.

2. Core Gameplay Mechanics

Gravity Switching

- Pressing **Space** inverts gravity.
- Implemented by flipping Rigidbody2D.gravityScale.
- Used to avoid floor/ceiling traps dynamically placed along the run.

Camera Auto-Scroll

- The camera moves horizontally at a constant speed.
- The player must stay within the visible frame to survive.

Obstacle Avoidance

- Traps (e.g., spikes, saws) are placed on either the floor or ceiling.
- Players must anticipate and switch gravity at the right time.

Player Death Conditions

- Touching a trap
- Falling behind the camera view

3. Player Experience Goals

- **Tension:** Caused by the pressure of staying ahead of the camera and dodging quick traps
- **Anxiety:** Emerges as obstacle patterns become more frequent and less predictable
- **Satisfaction:** Delivered when narrowly escaping death and mastering the rhythm

4. Visual & Audio Style

Art Style:

- Minimalist, 2D silhouettes
- High-contrast color palette (e.g., white player, black background, red traps)

Audio:

- Reactive SFX for gravity switch and death
- Background music increases in intensity as speed increases (optional stretch goal)

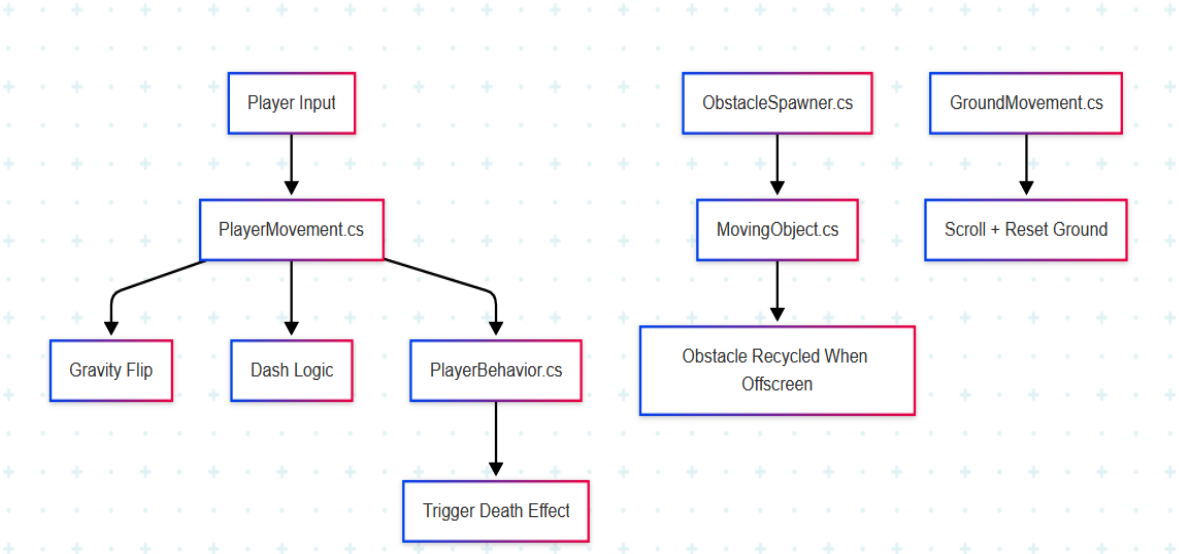
5. Level Design / Progression

- No fixed levels; the game uses a dynamic endless system
- Trap difficulty increases over time:
    - Faster camera movement
    - Denser obstacle placement
    - Tighter gravity-switch windows

6. System Architecture Summary

- PlayerMovement.cs: Controls gravity switch
- PlayerBehavior.cs: Handles player death and effects
- DamageTrap.cs: Detects collision with traps
- ObstacleSpawner.cs: Spawns traps at runtime using object pooling
- MovingObject.cs: Moves obstacles leftward and recycles them
- GroundMovement.cs: Scrolls and loops background ground

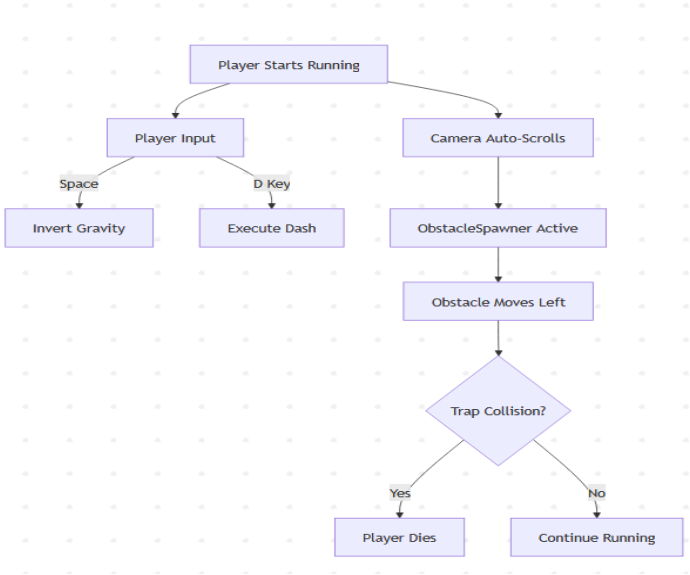
Diagram: System Architecture



7. Technical Features

- Object pooling for efficient trap spawning
- Raycasting (FixPlatformPos()) to align traps on spawn
- Gravity inversion via physics manipulation
- Game-over logic and UI triggers (planned in future update)

Diagram: Gameplay Flow



8. Future Improvements

- Add visual feedback for near misses
- Score system based on survival time
- Unlockable themes (color swaps)
- Procedural trap pattern generator
- Gamepad support

9. Academic Relevance

Out of Sight was created as part of an effective game design study, exploring emotional impact through minimalist mechanics. It draws from:

- Steve Swink (2008) – *Game Feel*
- Peter D. McDonald (2020) – *Run and Jump: The Meaning of the 2D Platformer*
- Benoit Bediou (2018) – Cognitive load in fast-paced action games

The project investigates how minimalist controls and audiovisual feedback can evoke a compelling emotional arc in a short play session.

10. Development Status

- Core mechanics implemented and functional
- Game loop complete (spawn, gravity, death)
- Needs polish, UI, and optional progression features

11. Team

- **Chinmay Kawale** – Testing, Development, Reasearch, Game Design Support
- **Adityaraj Singh** – Game Design, Presentation Design, Reasearch, Testing