Game Design Document (GDD) Platform Escape.

1. **Game Title:**  
   Cube Jumper: Platform Escape
2. **Game Genre**:  
   2D Side-Scrolling Platformer
3. **Game Overview:**

Cube Jumper: Platform Escape is a fast-paced 2D side-scrolling platformer where players control a cube-shaped character trying to reach the end goal while avoiding spikes, enemies, and falls. Players navigate a series of floating platforms, jump across obstacles, collect checkpoints, and strive to complete the level in the shortest time possible.

1. **Objectives / Goals:**
   * Reach the yellow goal cube located at the far end of the map.
   * Avoid enemies, spikes, and falling off the platforms.
   * Hit checkpoints to respawn closer upon death.
   * Finish as quickly as possible to get a better time.
2. **Game Mechanics:**
   * Movement: Left and right using A/D keys.
   * Jumping: Press Space when grounded.
   * Gravity: Affects vertical motion; falling if not on a platform.
   * Checkpoints: Save the respawn position.
   * Enemies: Move left and right, cause death on contact.
   * Spikes: Stationary hazard that causes instant death.
   * Particles: Jump and win particles for visual feedback.
   * Timer: Tracks how long the player takes to complete the level.
3. **Controls:**
   * A / D: Move left / right
   * Space: Jump
   * Mouse Click: Start or restart game via UI buttons
4. **User Interface (UI):**
   * Score Text: Displays elapsed time at the top-left.
   * Instructions Text: Describes controls (displayed before game starts).
   * Start Button: "Play Game" button to begin.
   * Restart Button: Appears after death or victory to restart the game.
5. **Level Design:**
   * **Single Level:**
     + Begins with a flat ground and scattered platforms of varying heights.
     + Includes checkpoints at key progress points.
     + Spikes randomly placed on some platforms.
     + Two roaming enemy cubes patrol certain areas.
     + Goal placed at far right end of the level.
6. **Art & Assets:**
   * Player, Platforms, Spikes, Enemies: Colored cube models.
   * Particles: Small spheres used for jump and win effects.
   * Colors:
     + Player: Azure
     + Goal: Yellow → Lime upon win
     + Ground: Green
     + Spikes: Red
     + Platforms: Orange
     + Enemies: Violet
     + Checkpoints: Cyan
7. **Sound:**

* Background Music: Looped .wav file (game\_music.wav)
* No other sound effects currently implemented.

**11.Technical Requirements:**

* Language: Python
* Framework: Ursina Engine
* Physics: Custom (gravity, collisions, etc.)
* Screen: Orthographic camera with FOV 16

**12.Target Platform**

* PC (Windows, ideally)
* Requires Python and Ursina engine

**13.Team Members**

* Solo Project