Game Design Document (GDD) – "Codename: Trailhead"

# A. Game Overview

Game Title: Trailhead (codename)  
High Concept / Elevator Pitch:  
A short, tutorial-style project to experiment with player movement mechanics across multiple perspectives (2D, 2.5D, and 3D).   
The game is a time-boxed monthly prototype showcasing walking, running, jumping, crouching, and optional swimming,   
focusing purely on movement and traversal.  
  
Genre: Platformer / Movement Prototype  
Target Audience: Portfolio viewers and anyone following my development progress.  
Project Duration: 1 month (maximum)

# B. Gameplay and Mechanics

Core Loop:  
1. Enter a level in a chosen perspective (2D, 2.5D, 3D).  
2. Navigate terrain using available movement mechanics.  
3. Reach the level’s endpoint or testing area.  
  
Player Actions:  
- Phase 1: Walk, Run (basic movement)  
- Phase 2: Jump, Multi-Jump  
- Phase 3: Crouch, Crawl, Sprint (with optional sprint bar), Roll/Slide  
- Phase 4 (Stretch): Swim, Variable Gravity, First-Person/Advanced Movement  
  
Controls:  
- Keyboard:  
 WASD / Arrow Keys – Move  
 Space – Jump  
 Shift – Sprint  
 Ctrl or C – Crouch/Crawl  
 Optional keys for swimming or interactions if implemented  
- Controller (Optional):  
 Left Stick – Move  
 A – Jump  
 B – Crouch/Slide  
 Left Stick Press – Sprint (if browser supports gamepads)  
  
Game Objective:  
- Traverse the environment using available movement mechanics.  
- Prototype demonstration—completion = whatever is finished at the end of the month.

# C. Story and Characters

Narrative: None (pure gameplay prototype).  
Player Character: Generic placeholder model (capsule, cube, or simple humanoid).  
NPCs / Enemies: None planned.

# D. Visuals and Audio

Art Style:  
- Generic placeholder models, blocks for terrain, and minimal environmental decoration.  
  
Audio:  
- Minimal or none for this prototype.  
  
Visual Perspectives to Test:  
1. 2D: Side-scrolling movement and platforms.  
2. 2.5D: Limited depth with platforming (like Trine or LittleBigPlanet).  
3. 3D: Full free movement, potentially first- and third-person.

# E. Levels and Environments

Level Plan:  
- Level 1 (2D) – Basic side-scrolling with flat terrain and slopes.  
- Level 2 (2.5D) – Limited depth movement; includes stairs and platforms.  
- Level 3 (3D) – Free movement; open test area with uneven terrain.  
  
Environment Features:  
- Flat ground, slopes, stairs, mountains  
- Platforms for jumping phases  
- Water area for swimming (Phase 4 stretch)  
- Respawn zones for falls

# F. Technical and Production Details

Game Engine: Unity (WebGL target for browser play)  
Technical Considerations:  
- Single-player  
- Keyboard input required; controller optional  
- Respawn system for falling off the map  
  
Team & Roles: Solo developer (myself)  
Project Scope:  
- Complete as many movement features as possible within one month  
- “Done” = whatever is working by the deadline  
Timeline: 1 Month (Time-Boxed Prototype)

# G. Development Phases

Phase 1 – Basic Movement  
- Implement walking & running  
- Build 2D, 2.5D, and 3D levels for movement tests  
- Add basic respawn system  
  
Phase 2 – Jumping Mechanics  
- Add jumping & multi-jump  
- Add falling control and test vertical terrain challenges  
- Update all levels with basic platforming  
  
Phase 3 – Crouching & Speed Variations  
- Implement crouch and crawl  
- Implement sprint + optional sprint bar  
- Optional roll or slide mechanic for slopes  
  
Phase 4 – Stretch Goals  
- Swimming mechanics with water zones  
- First-person mode in 3D  
- Variable gravity  
- Additional advanced movements if time allows

# H. Project Completion and Release Plan

Completion Criteria:  
- Whatever is functional at the end of the month is considered the “finished prototype.”  
- Any unimplemented ideas are logged for future iterations.  
  
Release:  
- Unity WebGL build  
- Hosted on personal website as part of the monthly project showcase.