Final Project Proposal

* Small 2D platformer that increases in difficulty with each new stage/screen
* Random generated background and stage interactables (Difficulty increases by 10s, then 5s, then with each level)
* Small player-controlled character.
  + Size can vary in higher levels in order to increase stage size without changing actual window size.
  + Can move left or right, jump, and fall (holding down on a platform that isn’t the ground) with arrow keys
  + Can run by holding a key (Probably z, x, or c) and an arrow key.
  + Key pressed to interact (Probably z, x, or c)

# User Interaction

User interacts with game via player-controlled character, start screen, options screen, and audio settings.

Screens:

* Start/Main Menu
* Game
* Pause Menu
* Options Menu (Also accessible from Start/Main Menu)
* Game Over (Allows player to retry or continue from current stage, or start from the beginning)

Player controls can be mapped via Scanners

# Code Organization

Main Project (FinalProject.java) – Holds main functions (main, settings, setup, draw)

**Classes:**

Stage: Always has a rectangle to represent the ground that covers the bottom portion of the screen. (Portion covered may vary based on stage size and progression in the game. Will most likely decrease every 30 levels stages.) Generates random background based on level. Zone name will display in middle of screen and fade out (i.e. Dark Souls) upon entry.

* Day Zone
  + Level 0: Tutorial Stage, allows player to move around, consist of 4 stagnant screens that allow the player to move around and test controls. Can be skipped by pressing Q-key.
  + Levels 1-4: Simply movement levels. Brief platforming.
  + Levels 5-10: Introduce enemies.
  + Levels 11-20: Basic game function
* Night Zone
  + Levels 21-35: Enemies increase in difficulty
  + Level 36: Branching paths via doors. Changes which Zone set is generated next.
* The Above (Locked – Needs a key)
* Below (Locked – Needs a key)
* Old reliable (Continue right edge of screen)
* Return home (Go left of screen. Potential ending)

Enemies: Appearance changes based on zone.

* Flying: Floating shapes or images (Like a Medusa Head in Castlevania games). If touched, PC dies. Starts off flying slowly and in a straight line. As game progresses, they fly faster, then move up and down on the screen. Multiple can spawn at once, either at the same time or alternating.
* Walkers: Walk on the ground. Have set movement patterns. Cannot move off platforms.

Platforms: (Possible subclasses of Stage class)

* Pitfalls: Holes in ground. Kills PC if fallen through.
* Platforms: Set rectangles that the PC can jump and move on. Can move, spin, or fall.

Player Character (PC):

* Small player-controlled character.
  + Size can vary in higher levels in order to increase stage size without changing actual window size.
  + Can move left or right, jump, and fall (holding down on a platform that isn’t the ground) with arrow keys
  + Can run by holding a key (Probably z, x, or c) and an arrow key.
  + Key pressed to interact (Probably z, x, or c)

Audio: Holds all music tracks and sound effects used in game. Can be muted.

# Libraries

PApplet

PImage

Scanner (Java)