

# Spiral Trajectory



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# What is it?

- 2D Side-scrolling Boss Rush
  - But only one boss!
- Use bow & arrow to progress & fight boss
- Choose the right arrow for the situation

# Mechanics

- Hero can fire arrows in the direction they are facing
- The hero has multiple types of arrows with different effects
  - Standard
  - Fire - Lights torches (illuminate map and increase effectiveness)
  - Ice - Stun the boss
- Boss Response:
  - Projectile
  - Melee Smash
  - Special Attacks (if time allows)
- One type of arrow can be selected at a time.
- The hero has a cooldown for “special” arrows.

# Controls

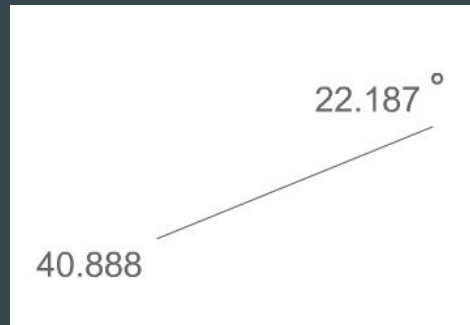
- Movement:

- Movement with WASD
- Space to Jump
- Shift to sprint



- Arrows:

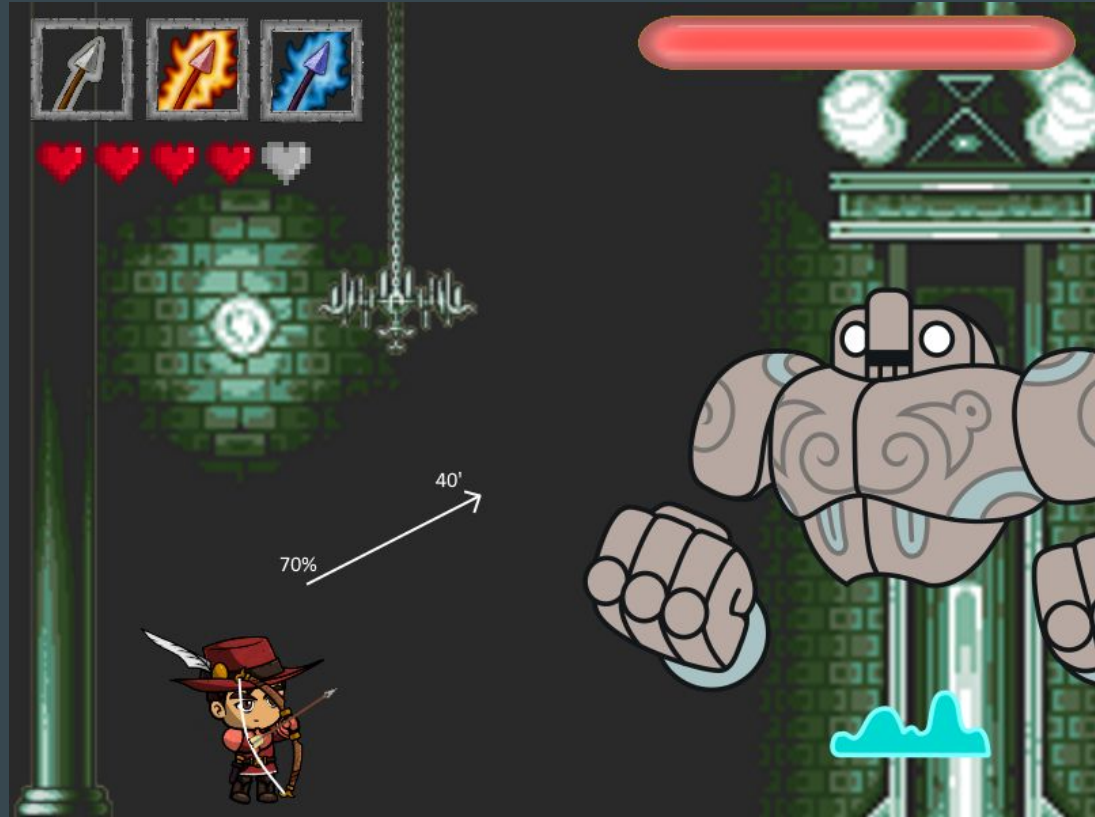
- Q & E to cycle through arrows
- 1,2,3... to pick a specific arrow
- Fire Arrows by clicking and dragging mouse to control force and angle



# User Interface/ Scene Mockup

Demonstrating

- Arrow release vector
- Arrow selection UI
- Health Indicators
- Character animation



# Technical Requirements | Game Complexity

- Objects
  - Hero
  - Boss
  - Torches
  - Arrows
    - Normal
    - Fire
    - Ice
- Arrow collisions will be per-pixel accurate

# Technical Requirements | Scenes & Camera Views

- Scenes
  - Splash screen
    - Animated Arrow moving in a spiral
  - Boss fight
  - Win/loss
- Camera Views
  - Primary Camera View
    - 2D Side-scrolling camera that follows the player
  - Secondary Camera
    - Arrow camera

# Technical Requirements | Behavior

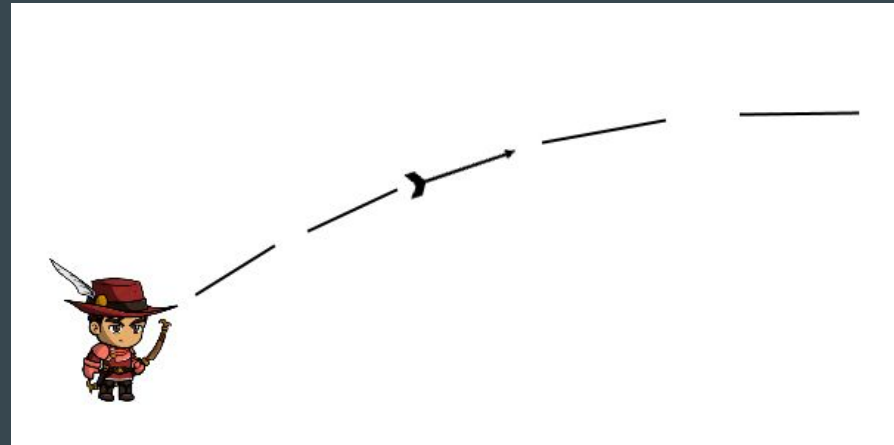
- Per-object
  - Boss Behavior
    - Chases player (interpolation)
    - Smash attack (Shake camera)
- Inter-object
  - Arrow on boss - damage boss
  - Fire arrows light torches
  - Lit torches - boss reaction in player's favor
  - Boss smash player - damage player
  - Jump through platforms



# Technical Requirements | Physics

- Arrow Trajectories
  - Starting velocity & gravity
- Player Movement
  - Jumping & dropping

Resulting Arrow Path



# Technical Requirements | Lighting & Particles

- Lighting
  - Lights:
    - Various Torches in the map
    - Spotlight to introduce boss
    - Directional light for arrow (possible use)
  - Normal Map
    - Background
- Particle System
  - Arrow Trails
    - Differ with arrow type
  - Torches
    - Fire/ash particles



Particle Mock up

# Schedule

- 2/21 - 2/26:
  - Arrow Firing (basic arrow)
  - First boss action (slam attack)
  - Player motion
  - Placeholder Splash and End scenes
- 2/26 - 3/5:
  - Complete arrow types
  - Complete Boss AI
  - Physics, particles & lights
- 3/5 - 3/12:
  - Refine UI
  - Polish Splash and End scenes
  - Refinement & Debugging

# Stretch Goals

- Actually adding puzzle elements
- Multiple levels
- Additional arrows
- Particles on arrow impact
- Special attack for boss
- Credits scene
- Boss Physics

# Asset Acquisition

Resources:

- <https://opengameart.org/>
- <http://kenney.nl>
- <https://github.com/saniv/free-game-art>

Sources for public domain and other similar licenses to use for assets required for the game.

# Development Tools

## Source Control

- GitHub

## Document Creation

- Google Drive

## Code Development

- NetBeans
- Google Chrome

## Art Generation

- Paint.net