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CS120

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Game Design Document: The Path to Camelot

**Background**

The basis of this game is an adventure game where the main character—Sir Rowan the Swift—is tasked with finding a magical healing elixir in the city of Camelot to save the King’s daughter. Along the way, Rowan may meet a variety of enemies of different HP and skill levels.

Main Goals:

1. Get the elixir.
2. Get coins and health potions for HP
3. Don’t die.

**Assets**

*Collections*

* Potions—Created by Hyptosis and Zabin under CC-BY 3.0. Link to site: <https://opengameart.org/content/lots-of-free-2d-tiles-and-sprites-by-hyptosis>.
  + Mainly used for potions.

*Background for Main Play Sequence*

* Grass Texture created by Lamoot under CC-BY 3.0. Link to site: <https://opengameart.org/content/grass-texture>
* Path texture created by Dimred under CC-BY 4.0. Link to site: <https://opengameart.org/content/seamless-stone-ground-texture>.
* Water texture created by Proxy Games under CC0. Link to site: <https://opengameart.org/content/water-texture-pack>.
* Forest texture created by GrEmlin under CC0. Link to site: <https://opengameart.org/content/seamless-grass-texture-1>.

*Objects*

98 Pixel Art RPG Icons—Created by 7Soul under CC-BY 3.0. Link to site: <https://opengameart.org/content/98-pixel-art-rpg-icons>.

*Characters*

* Rowan—Character sheet created using <https://sanderfrenken.github.io/Universal-LPC-Spritesheet-Character-Generator/#?body=Body_color_light&head=Human_male_light>.
* Bosses and Monsters Spritesheets—Created by Stephen Challener (Redshrike) under CC-BY3.0. Link: <https://opengameart.org/content/bosses-and-monsters-spritesheets-ars-notoria>.

**Game Design**

A white paper with black writing

Description automatically generated

A white paper with writing on it

Description automatically generated

**Things the Game Might ~~Definitely~~ Need:**

* Method to check if the Character is in the bounds of the current screen
  + Current screen would be the orange highlighted box
  + If at the edge of the “box”, go to the next section
* Method to “pick up” objects—use collideswith
  + Store in a list?
* Character class needs process method
  + Check if arrow keys are pressed
* If two Characters are close to each other, process method for attack
  + Check if space bar is pressed
  + Take in HP, maxDamage, healingFactor, hitChance
  + If hit lands, random damage between 1 and maxDamage
* Character class will have ability to make enemies and Rowan the Swift
* Method to make “walls” (ie, places where characters can’t walk)
* Rowan will have ability to pick up coins for greater HP
* Save points???
* Enemies will have varying difficulties

**Milestones:**

1. Make basic gameplay screen—use colored boxes to signify paths
2. Make basic character class
3. Objects (healing elixir and coins)
4. Walls
5. Labels and buttons
6. Attack method
7. Instructions screen
8. Fancier animation
9. Save points

**Timeline**

* 11/19—Basic Gameplay screen with basic characters; instruction screen
* 11/22—Objects
* 11/25—Labels and Buttons
* 12/2—Attack
* 12/5—Animation
* 12/9—Walls
* Stretch—Save/Load functionality

**Game Class**

* Defines what gameplay is—ie, what happens when *x* happens
* Attack method
  + If Rowan collides with enemy—check if <SPACE> pressed
  + If pressed, attack method in character class
* Calls Scene class
* Calls Character(s)
* Calls objects
* Labels
* Timing
* Scorekeeping
* List of sprites

**Main Character Class**

* Defines what main character
* Attributes
  + Name
  + hitPoints (HP)—the health status of the character
  + maxDamage—the maximum damage a character can deal
  + hitChance—how likely the character is to hit the opponent (1-100)
  + healingFactor—how likely the character is to heal (1-100)
  + maxHealing
* Sets image
* Sets position
* Process method
  + Checks if arrow keys are pressed
  + Checks if space bar is pressed
  + Checks if “A” pressed
* Fight method
  + Refer to turnBasedCombat folder for ideas
  + If space pressed and collides with opponent
    - Random integer—if random int is between 0 and hitChance—you hit
    - Roll for damage
    - Random integer—if random int is between 0 and healingFactor—you heal
    - Roll for health
* Pick up method
  + If A pressed and collideswith object—object goes in inventory

**Enemy Class**

* Defines what an enemy is
* Attributes
  + Name
  + HP
  + maxDamage
  + hitChance
  + healingFactor
* Sets image
* Sets position
  + Randomly generated within the game scene
* Fight method
  + Refer to turnBasedCombat folder for ideas

**Scene Class**

* Defines the background/scene the Characters are playing in
* Will change based on character position
  + Rewrites image?
* Will prevent character from going beyond the paths

**Objects Class**

* Sets image
* Coin is random position in game scene (Maybe 30?)
* Health potions?
  + Would automatically increase HP
* Elixir in set position
  + If Rowan picks up Elixir and has at least 10 HP, automatic win

**Instructions Class**

* Provides instructions
* Has PLAY and QUIT buttons
  + Responds accordingly

**Labels**

* Need HP label
* Coins label
* Timer

**Buttons**

* Play
* Quit
* Save
* Load

**Save/Load?**

* JSON file???