**Worms Game**

Graphics:

Static background drawing (Layer 1)

Destroyable background drawing (Layer 2)

Sprite drawing (Layer 3)

Weapon drawing (Layer 3)

Effect drawing (Layer 3)

Water drawing (Layer 4)

UI drawing (Layer 5)

Optimization:

Set the camera to the middle

Dawe everything on the screen only

Only process background tiles that could be on screen (option)

Sprite bucketing (option)

Physics:

Motion

Actor Motion - Jump

Actor Motion - Falling down

Collision Detection

Collision Resolution

Gravity

One way walls for Destroyable background

AABB test

Pixel Perfect collision Detection with optimization (lecture 10)

Sound:

Weapon sound

Explosion sound

etc...

AI:

Weapon prediction

Multiplayer

Same controls for all players

Turn-based

Current Turn:

\* Camera

- Camera needs to move based on the character. Camera is centered on current player.

(If character is moving)

Camera moves according to the character's movement

(Else)

Camera can be controlled with other keys

However, camera will re-position when character starts moving

\* Time

- Gives a set time for each player's turn

\* Counts down from a set time

\* When time runs out, move to next player.

- Gives a total set time for water rising (optional)

Menu Customizations (Set before game starts)

\* Number of players

- Options 2, 3, 4, or more

\* Number of characters for each player

- Options 1, 2, 3, 4, or more

\* Health for each character

- Options should be 100, 150, 200 hp

\* Time for each turn

- Counts down each turn, Resets when it's another player's turn

- Options should be 15, 30, 45, 60 seconds for each turn

\* Time total for water rising (Optional)

- Counts down starting from start of game

Background

* Layers
  + One layer: Static background (Cannot be destroyed)
  + Second layer: Destroyable background
    - On top of the static background
    - Collisions happens on this layer
      * Destroyed parts will be covered up with shapes drawn on top of the destroyable background

Characters

\* Name (Set at beginning of the game, does not change through the game)

\* Health

Numbers + Calculations

* Other special attributes (optional)

Physics

\* Movement

- Speed of character

(Could be different if we have special attributes)

- Projectile Speed

(Depends on the weapon used)

- Gravity

(Same for each character and weapon effects)

If character falls, and its position reaches less than the x-coordinate of the map, then character is dead. (This is for checking if character has fallen into the water.)

\* Collisions

Characters and Background

* Wall or surface collisions.

Characters and Crates / Boxes

* If a character collides with a weapon box or a health box, then that character gets a power-up.

Explosions

* Explosions will destroy the map
  + The area of the explosion will draw a shape that will cover the destroyable background.

Some things to look out for:

Art for character movement. (Especially when character is standing on edges or sides of walls.)