

Reference board link:

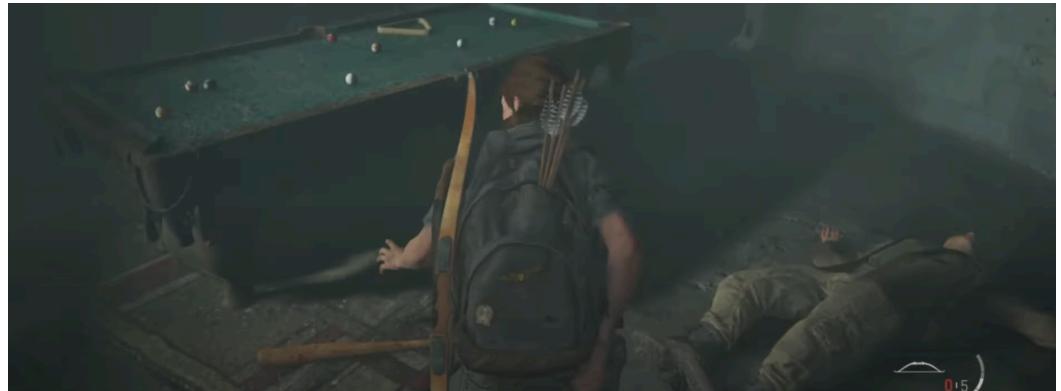
[https://lucid.app/lucidspark/40c4441e-75a9-4a7e-8c03-98ba96574d5d/edit?viewport\\_lo c=-251%2C-403%2C6215%2C3270%2C0\\_0&invitationId=inv\\_2e1d549d-a13d-4598-b5 7e-3ac82946cdab](https://lucid.app/lucidspark/40c4441e-75a9-4a7e-8c03-98ba96574d5d/edit?viewport_lo c=-251%2C-403%2C6215%2C3270%2C0_0&invitationId=inv_2e1d549d-a13d-4598-b5 7e-3ac82946cdab)

## Final Analysis

Character 1 (The Last of Us Part II):

- Initial perceptions
  - The character can transition between animations very quickly (ex: crouching to sprinting)
  - The animations make it clear to the player that what they want to do is happening, and they seem responsive
  - The animations are very smooth as they can naturally transition between each other, and the speed of the animations are good
  - What makes the animations interesting to me is how they contribute to the feeling of playing the game, and they're just so fluid and expressive that engaging with the game becomes more rewarding
- Animation principles
  - Principles of animation that are important to the chosen animation are follow through/overlapping action, secondary action, arcs, and timing
  - Follow Through/Overlapping Action: a lot of animations are happening either right next to each other, or at the same time
  - Secondary Action: the player character has several weapons, a backpack, their clothes, and their hair that are moving with them
  - Arcs: these are necessary to make movements more natural, and look much better than straight line movements
  - Timing: the speed of the animations are important, as well as how quickly they transition
- Static elements
  - Objects in the environment (chairs, tables, crates, etc.)
    - Used to make environments feel more real and gives more variety to what the player sees
    - Acts as cover for both the player and enemies, and can be climbed on to reach higher places
    - Placed in different ways (position, rotation) to create a flow for how characters move through and interact with the area
  - Weapons (guns, melee weapons)
    - Used by the player to distinguish between the different weapons they have, and gives each weapon a unique feel

- Serves the purpose of attacking enemies at a range or up close
  - The last used pistol is placed in the player's holster, and the last used long guns are located on the player's back
- Dynamic elements
  - Player character
    - I think the character has around 30 bones as their movements are really complex and their rig must be quite detailed. Each hand would have at least ten bones for the fingers, each arm and leg would have two bones, the body would have 3 bones, etc. **(updated)**
    - Their feet seem to match with uneven terrain, and their weight seems to shift to the side that's lower
    - Whenever they pick up something, they actually reach out and grab it, and they also interact with their backpack, which adds to immersion. In the image below, you can see them reaching their hand out towards a baseball bat on the floor before picking it up, and the character is also lowering down, which shows a shift in their posture to more easily grab the bat. **(updated)**

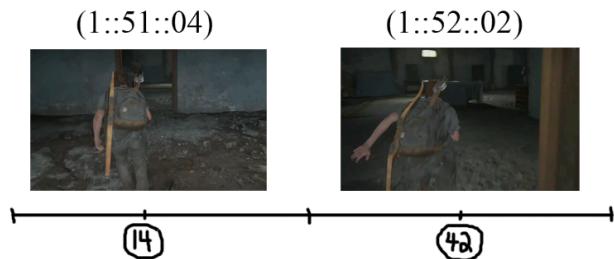


- They move through the environment in a very natural way, running, crouching, vaulting over open windows, aiming a weapon, leaning against cover, etc.
- Enemies
  - Similar to the player, the enemies have a lot of bones since they have complex movements, and multiple bones must be used for different parts of the characters bodies
  - Their feet match up with uneven terrain, similar to the player
  - They will interact with the environment when taking cover, and they interact with the player when in close proximity
  - They react in different ways to attacks, like if they get hit with a melee weapon they'll respond to it, or if they get shot they get knocked off their guard

- Tall grass
  - Moves back and forth in a swaying motion, probably using keyframes to create the animation
  - 3D, which factors into how the grass moves the same no matter where the camera is
  - Usually moving if the player or an enemy moves close to or through it, and it can also naturally move from wind; the speed of its movement is often dependent on the speed of the character moving near it or in it
- Throwables (bottles, bricks)
  - When thrown by the player, they rotate while in the air and break apart when it makes contact with something
  - 3D
  - Usually not moving, but can be moved around if characters move over it, and if the player picks it up
  - The normal state of this component is when it isn't broken, and when it's thrown against something it changes to a different state where it's broken
- Animation timing (assuming 1 second = 30 frames) (**updated**)
  - Timing chart for primary keys:



- Shows the first, middle, and last frames of the main character changing from their walking animation into their running animation
- The character's posture changes from fairly straight to leaning forward from the first and the middle frames, which indicates their sudden change in movement speed from walking to running
- The character's posture changes from leaning forward heavily to slightly leaning forward from the middle and last frames, which indicates that they are at a more constant speed and no longer accelerating
- Timing chart for secondary keys:



- The character is leaning forward in the first frame, which anticipates them getting ready to run
- The character's arms swing back and forth faster between these frames, which indicates that they are moving differently compared to before

#### Character 2 (Assassin's Creed Unity):

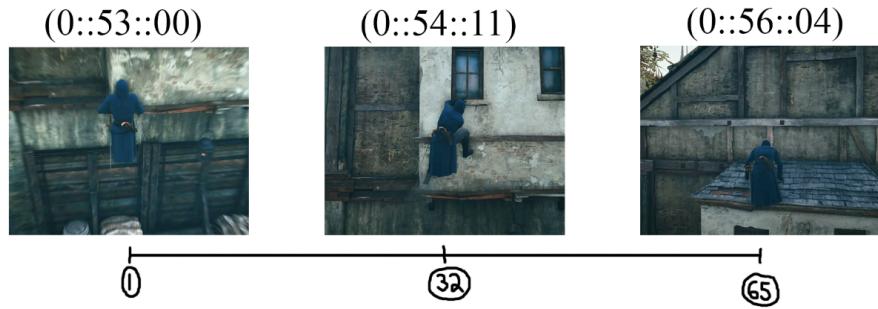
- Initial perceptions
  - The character jumps differently depending on if there is or isn't something in front of them, and they shift to the side if they bump into an NPC while running
  - The different climbing animations string together nicely, adding to the immersion and making the player more aware of how they're moving, although sometimes sudden movements can look unnatural
  - The animations are fairly smooth and can chain together well, although I feel like some animations are faster than others, which can affect the flow of gameplay
  - What makes the animations interesting to me is how they make repetitive actions that the player will do constantly, like climbing and jumping, more engaging and fun to look at, which improves the overall experience
- Animation principles
  - Principles of animation that are important to the chosen animation are follow through/overlapping action, secondary action, arcs, and exaggeration
  - Follow Through/Overlapping Action: a lot of animations are happening right next to each other as the player climbs and jumps
  - Secondary Action: the player character's outfit and sword is moving with them
  - Arcs: make the character's limb movements and jumps more natural (not just moving in straight lines)
  - Exaggeration: emphasizes the player character's movements, especially for big jumps and flips

- Static elements
  - Structures
    - Used to make the game world feel bigger and more real
    - Serves the purpose of allowing the player to perform parkour and get to higher places
    - Placed in specific locations to let the player move between different structures in a way that is fun and feels natural
  - Poles/ropes
    - Used to immerse the player in the game's setting
    - Serves the purpose of allowing the player to jump and swing on them and move around more efficiently
    - Placed in specific locations so the player can chain between them
- Dynamic elements
  - Player character
    - I think that approximately 20 bones are used for the character. Multiple bones are used for the hands, legs, arms, and body, since the movements are more complex. The feet could only have one bone each since they have simple movements
    - Their feet don't seem to position themselves differently if the character is on uneven terrain like sloped rooftops
    - They reach their hands out when climbing things in a natural way that matches with what they're climbing
    - When climbing their body moves side to side as they reach their hands above them. In the image below, you can see their body is tilted to the right as their left hand is reaching above them, which shows a shift in the character's weight. (**updated**)

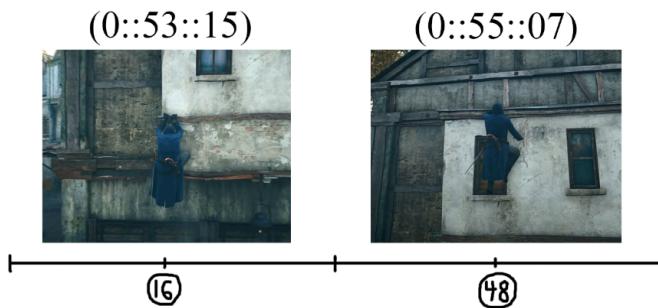


- NPCs
  - I think they have close to the same number of bones as the player character, although they do have simpler movements

- Their feet seem to match with uneven terrain
- Some of them hold large items, and these change their posture and how they walk
- If the player character bumps into them, they move and react in a natural way
- Animation timing (assuming 1 second = 20 frames) (**updated**)
  - Timing chart for primary keys:



- Shows the first, middle, and last frames of the main character in their climbing animation
- The character's posture rotates to the right between the first and middle frames, which indicates the change from them holding onto the ledge to climbing up the wall; their right leg also starts moving above their waist, which indicates that they're using it to move upwards
- The character changes from being stretched out to being crouched down from the middle and last frames, which indicates that they finished climbing the wall and are on top of the building
- Timing chart for secondary keys:

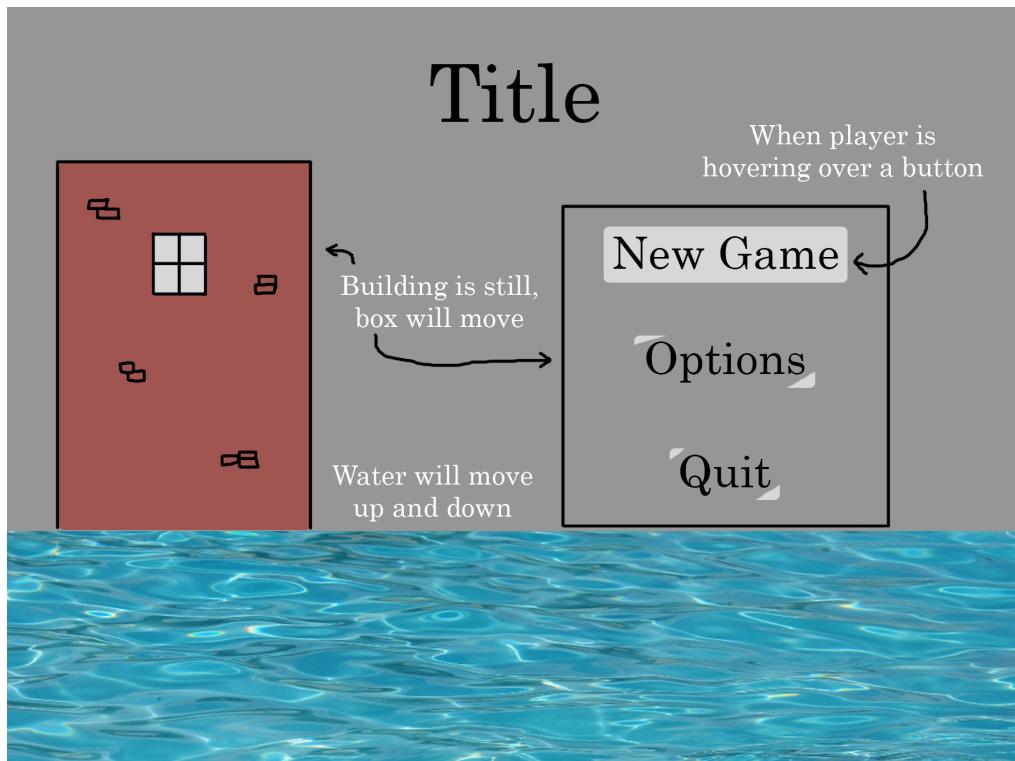


- The character is hanging down from the ledge in the first frame, which anticipates them getting ready to climb upwards

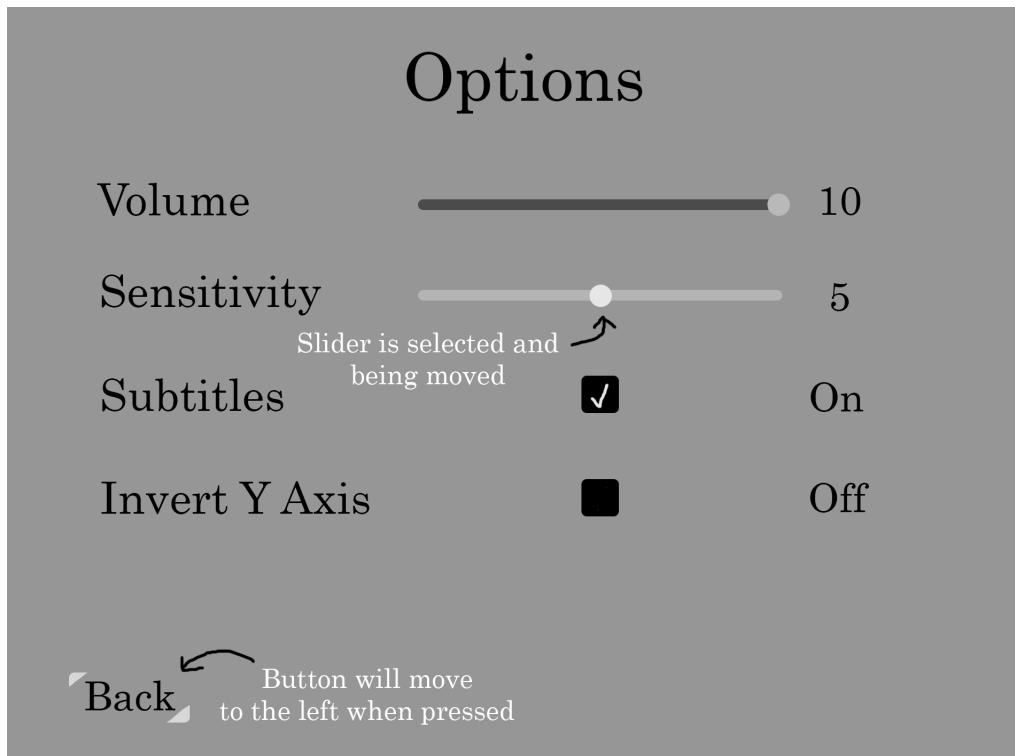
- The character's hands move above their head and drift down as they climb between these frames, which indicates that they are moving upwards while climbing

# Storyboard

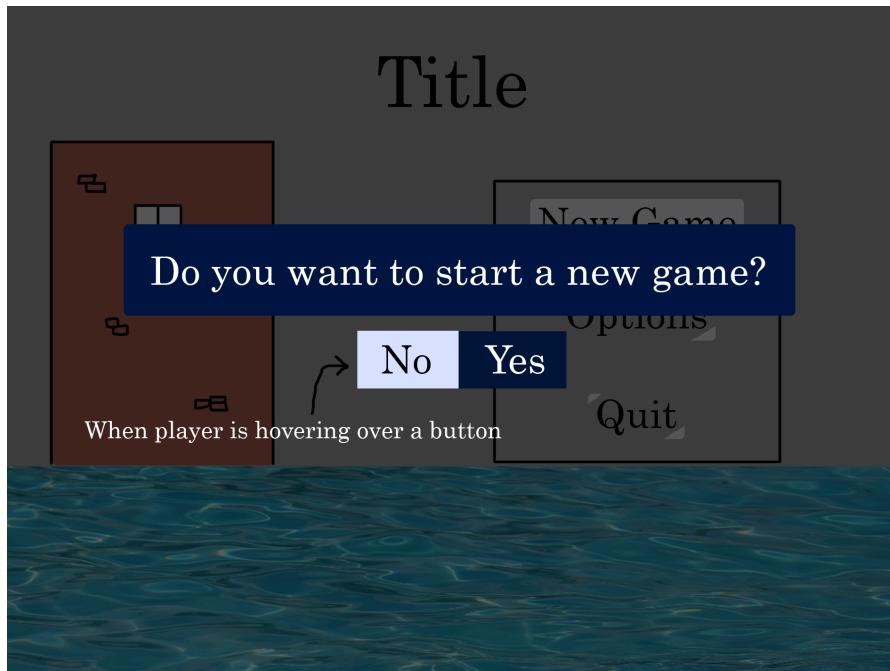
- Menu
  - Main menu



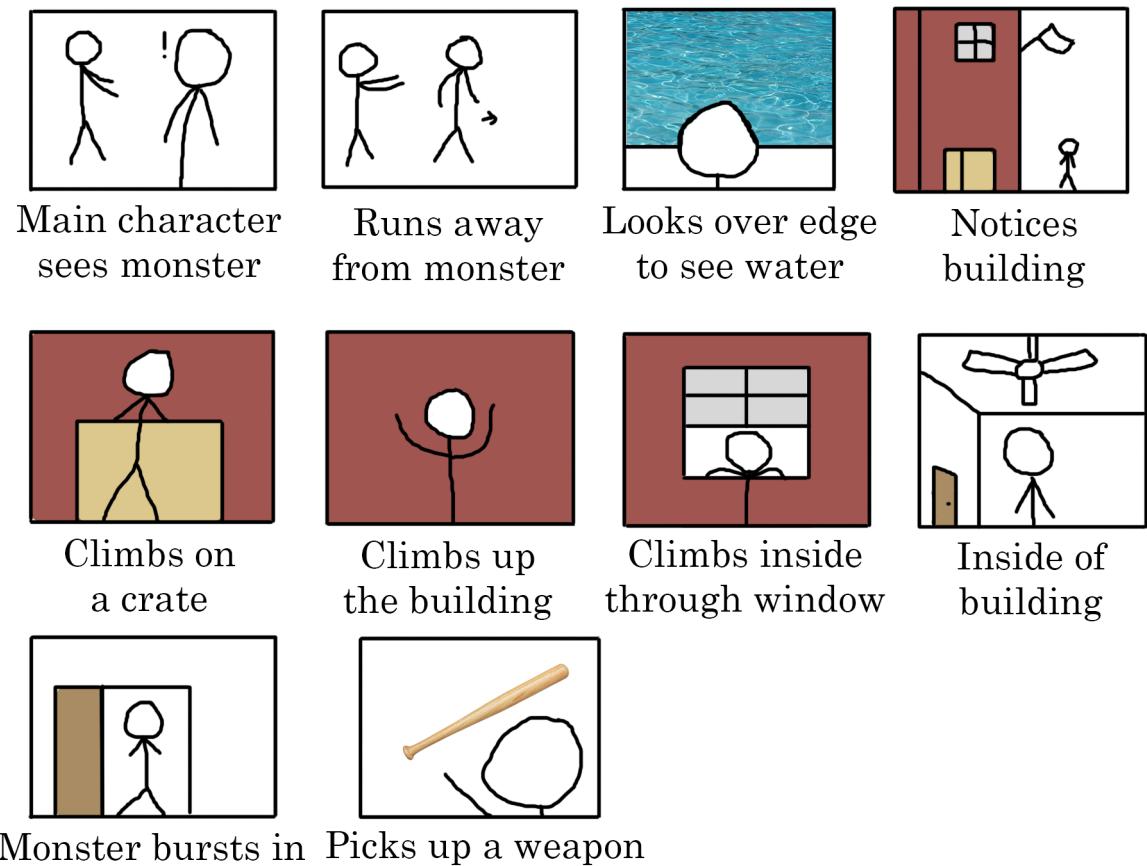
- Options menu



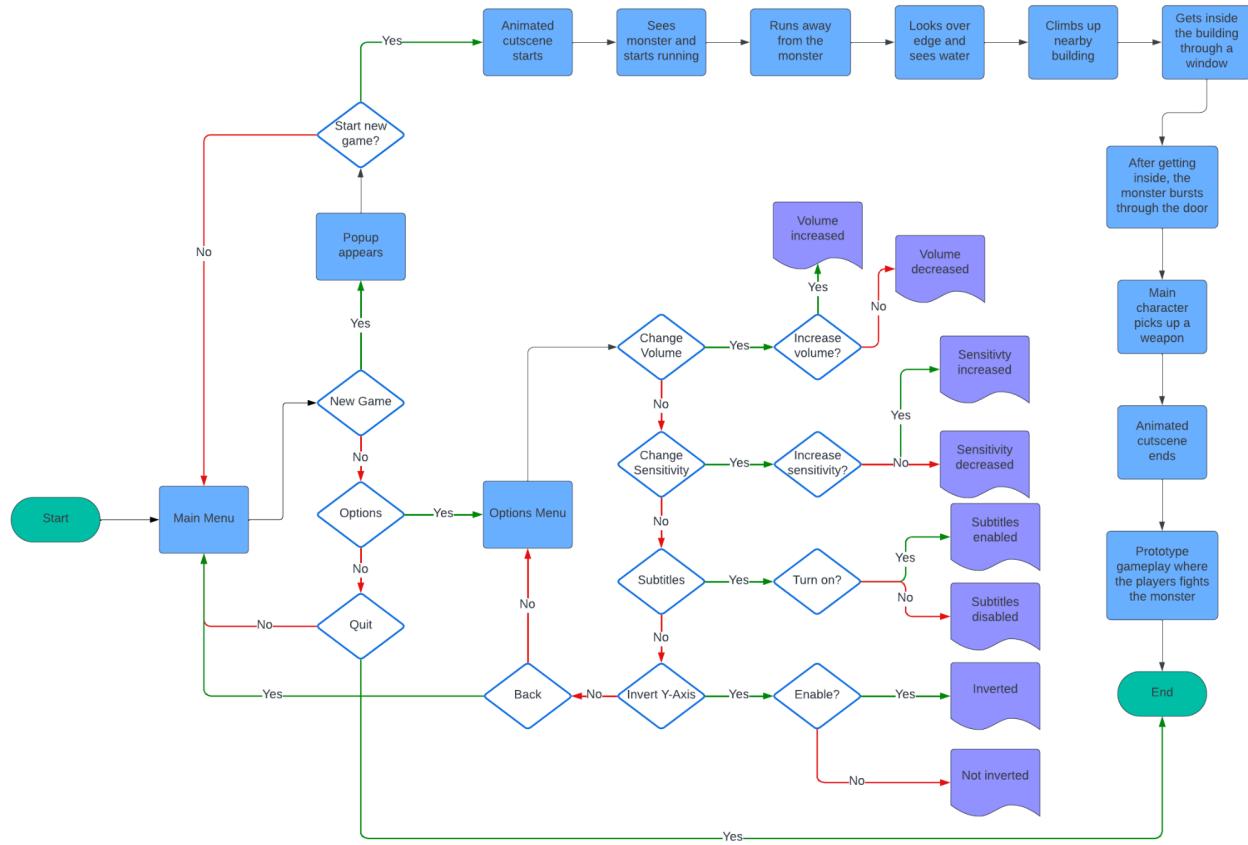
- New Game popup



- Animation sequence



# Flowchart (updated)



I have changed my animation from being an interactive scene to being an animated cutscene that transitions to prototype gameplay after it ends.

- Narrative: The animation has the main character running away from a monster, but they come to an edge, and looking over the side, sees that there's nothing but water. Since they can't swim they have to climb up the side of a building to get away from the monster. They manage to crawl into the building through a window, and after a moment the monster bursts in through the door. The main character then grabs a weapon to defend themselves with.

## Sources

- UI buttons and icons:  
<https://assetstore.unity.com/packages/2d/gui/icons/simple-button-set-01-153979>