

Software Requirements and Design Document

For Korona Kingdom

Version 3.0

Authors:

Alexander Kostandarithes

Anthony Micciche

Ryan Goldberg

Karl Cooley

Alexander Jordan

1. Overview (5 points)

Korona Kingdom, a turn based RPG game where the player will be charged with finding a rare consumer good: Toilet paper. Traveling through various maps and areas, the player will encounter various enemies of differing health and difficulty. Items are placed throughout the game world to assist the player in their righteous quest. As the player continues, they will face against mini-bosses that will alter the sequence of in-game events.

2. Functional Requirements (10 points)

Key: Working Issues Cut

Inventory System:

1. When the player hits [I] in the overworld the user's inventory should open. - High
2. When the player hits [I] in their inventory the user's inventory should close - High
3. When the inventory is open all the player's stats should be visible - High
 - a. Level / HP / Energy / Strength / Defense / Immunity / Intelligence / Agility / Luck
4. When the inventory is open all the player's equipped items should be shown - High
5. When the inventory is open the player's inventory should be separated by component type - Med
 - a. Helmet / Weapon / Shirt / Gloves / Pants / Shoes / Consumables / Quest Items
6. When the inventory is opened the current component tab selected should be highlighted and be the leftmost tab - Med
7. When the player hits [→] or [←] the current component tab selected should change relative to what is currently selected - Med
8. When the player opens the inventory there should be a list of items related to the current selected component tab that shows what the player has picked up - High
 - a. A single list item shows: Name, Image
9. When the inventory is opened the first item in each of these component lists should be the item that the player currently has equipped - Low
10. When the player hits [↑] or [↓] the player should be able to scroll up/down their list of items in the chosen component tab - High
11. When the player scrolls through these items the current selected item should show its description and its stats - High
12. When the player scrolls through these items the current selected item should show if its stats are better than the currently equipped item - Low
13. When the player is in their inventory the user should not be able to enter a battle - High
14. When the player is in battle they should not be able to enter their inventory - High
15. When the player hits [Enter] the player should equip an item - High
16. When the player hits [BackSpace] the player should un-equip the item - High
17. When the player hits [Enter] on a 'Consumable' their HP/MP should increase by the item's set amount up to their Max HP/MP. - High
18. When the player is in an event they should not be able to open their inventory. - Med

Overlay System

Player Info

1. When the player walks around the overworld the user's HP should be shown - High
2. When the player walks around the overworld the user's MP should be shown - High
3. When the player walks around the overworld the player image should be shown - Low

Dialogue Box

1. When interacting with certain items / people the dialogue box should display - High
2. When the dialogue box appears the user should know who is speaking - High
3. When the dialogue box appears the user should see an image of who is speaking - Low
4. When the dialogue box appears the user should know what is being said - High
5. Once the interactions are over the dialogue box should disappear - High

Menu Box

1. When the player walks around the overworld the user should see all the available menu options - Med
 - a. Inventory / Map / Options

Event System

1. When the player walks into a gameplay event tile the dialogue box should show the correct event (overlap with Overlay) - High
2. When the gameplay event ends the dialogue box should disappear (overlap with Overlay) and be able to move freely again - High
3. When the player is in a gameplay event they should not be able to move or enter a random encounter - High
4. When the player is in a gameplay event they should be able to open and use their inventory - Low
5. A gameplay event should allow for multiple users to be the speaker and for each speaker to have their own dialogue - High
6. When the player presses [Enter] the conversation should move on to the next person's dialogue - High
7. Once an event is over it should no longer occur on the map (once and done). - High
 - a. Ex. An event you saw on the overworld shouldn't happen again if you return from a dungeon
8. An event should be able to end and lead directly into an Encounter - Med
9. When a player ends an event there should be a possibility that a new event has been created. - Med

Map/Dungeons:

1. The maps should be graphically pleasing and accurately represent the location they are portraying (currently the overworld and dollar store are fully implemented graphics-wise). - med

2. entering/exiting the dungeons should work with no issues and the player should be located directly outside the dungeon that they just exited(fully functional). - High

Encounter System:

1. The encounter System needs to inform players of the enemies they are encountering and return a string to the main game with this information on the beginning and end of an encounter to communicate with the event system. - High
2. The encounter system needs to properly communicate menu choices to the combat system in order to create a combat experience. - High
3. The encounter system needs to support multiple enemy encounters, not just a single enemy for the entire game. - med
4. The encounter system should display a final "end of encounter" message to the player then require the player to push [enter] in order to exit out of the finished encounter. - med
5. The encounter system should allow non-random, event triggered encounters, with a specific boss enemy. - High

Combat System:

1. The combat system needs to provide enemies, attacks, and stats to the Encounter system - high
2. It also needs to handle how damage and whatnot is calculated - high
3. The combat system should also provide the behavior of various enemies -high
4. The combat system needs to design unique boss fights - cut
5. The combat system needs to supply a good variety of enemies and attacks - somewhat cut
6. The combat system needs to provide a leveling system and be responsible for exp that enemies drop - cut

3. Non-functional Requirements (10 points)

Inventory System:

1. When the player enters / leaves the inventory it should take less than a second
2. The inventory should properly display items according to their category
3. Equipping and unequipping items should be brief and affect their respective stats

Overlay System

1. When the player walks around the map the overlay should not make the game run noticeably slower

Event System

1. It should be easy for other people in the dev team to add gameplay events to the map
2. Events should not take an unreasonable amount of time to trigger and conclude
3. The collision box for an Event tile should be the visible size of the tile.

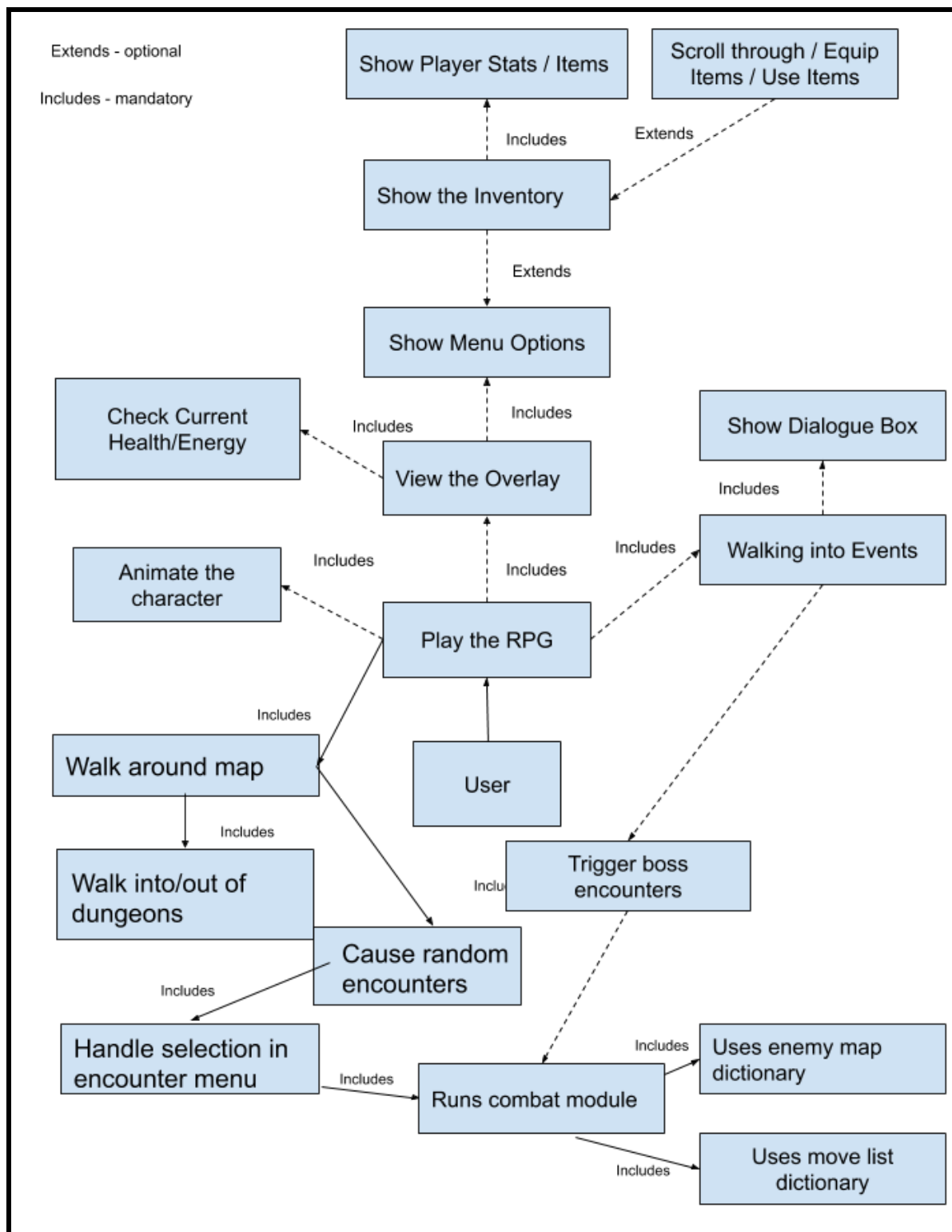
Encounter system:

1. The dialogue and process of an encounter should be visually pleasing and entertaining for the player.

Combat system:

1. The combat should be fun!

4. Use Case Diagram (10 points)



Textual Use-Case Descriptions:

Play the RPG

- In order for the user to use this system they must play the game.

Show Menu Options

- When playing in the overworld the player is forced to view the overlay.

Check Current/Health Energy

- The player is forced to see their health/energy at the top of the screen when in the overworld (overlay).

Show Menu Options

- The player is forced to see their menu options at the top of the screen when in the overworld (overlay).

Show the Inventory

- The player can open the inventory in the overworld by pressing [I].

Show Player Stats/Items

- The player is required to see their stats when the inventory is open.

Scroll Through/Equip Items/Use Items

- Once the player is in the inventory they are not required to use it, they can just leave with [I].

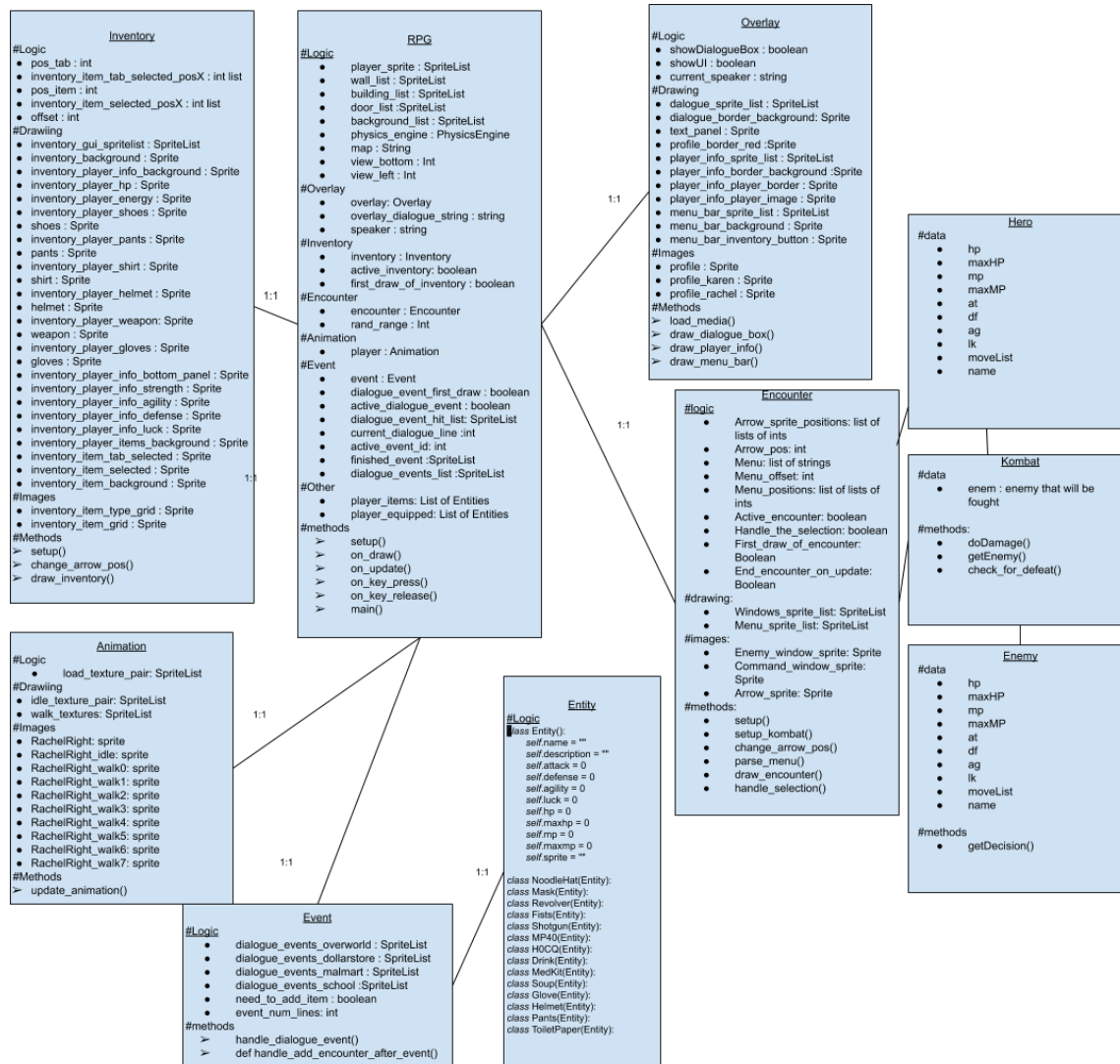
Walk around map/trigger random encounters/ run combat

- Once the player is in motion there is a random chance of encounters and combat

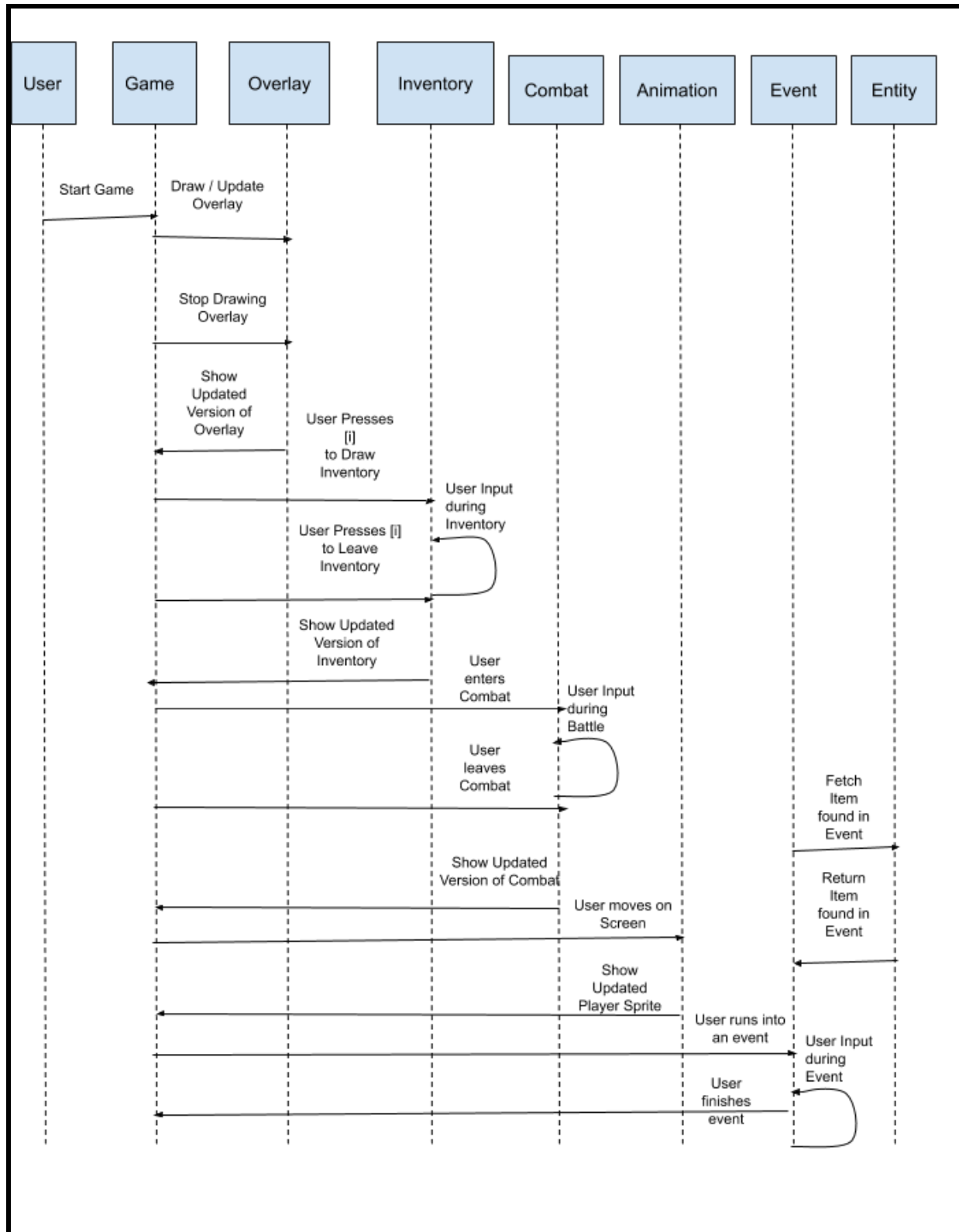
Walk into events/trigger boss encounters/run combat

- Once the player triggers specific event tiles boss encounters will be non- randomly triggered, resulting in boss combat.

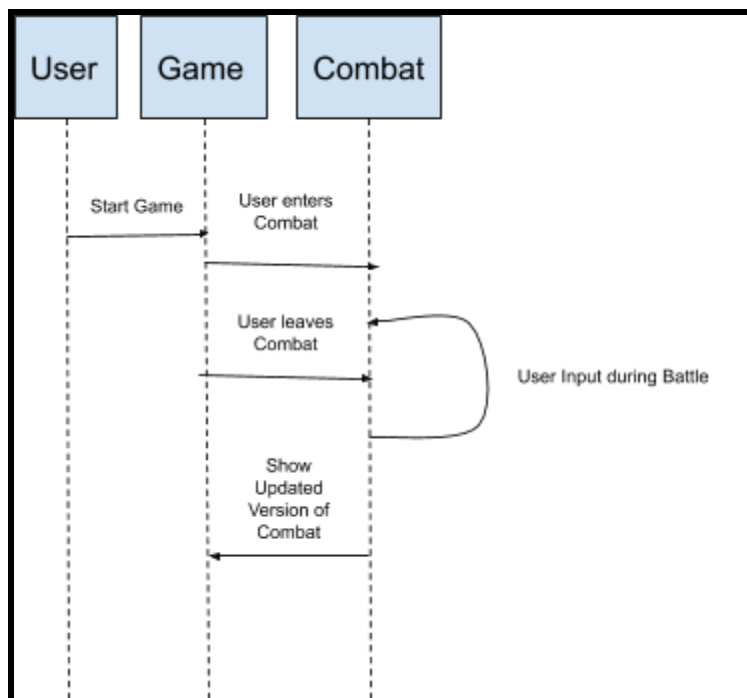
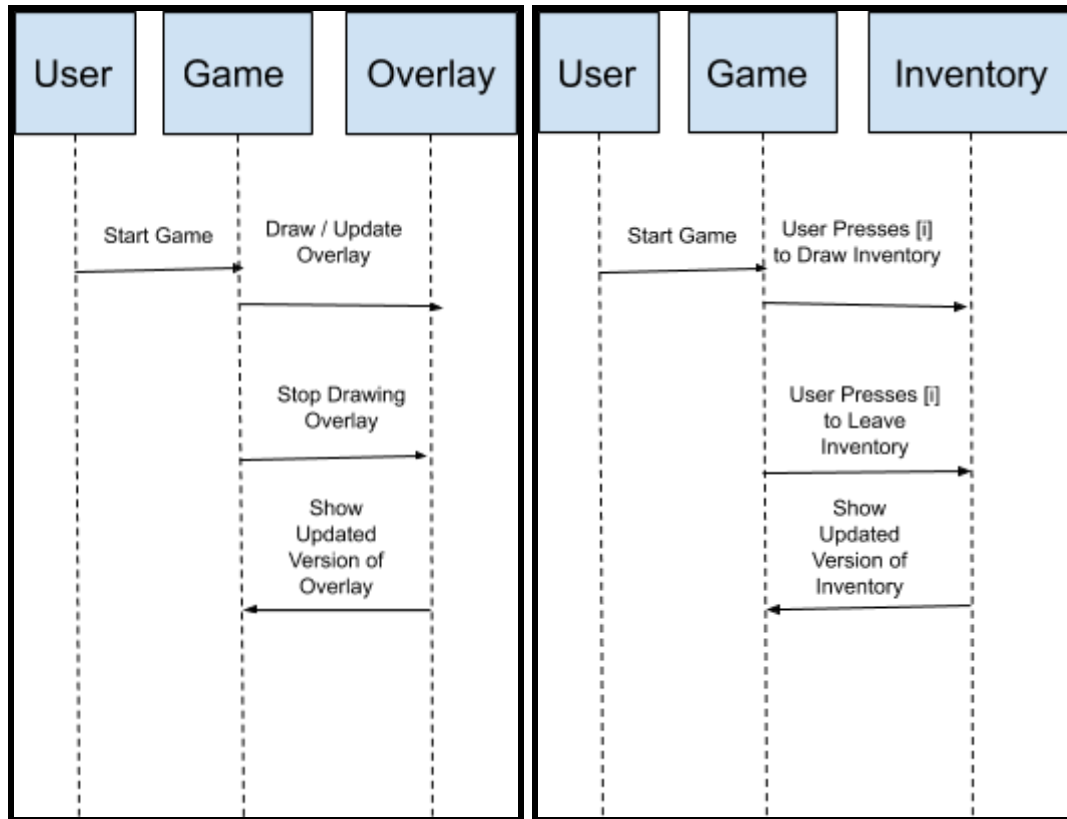
5. Class Diagram and/or Sequence Diagrams (15 points)



Sequence Diagram (whole)



Sequence Diagrams (Individual)



6. Operating Environment (5 points)

The software will operate on any PC whether it be desktop or laptop. The operating system/version of the PC should not have any effect on the user's ability to operate the software. In order for the software to run the user must have python3.6 or higher installed on their machine as well as the arcade library.

7. Assumptions and Dependencies (5 points)

Assumed factors:

- Assume that the arcade library is properly installed and remains functioning
- Assume that the user does not modify source code or integral components related to Korona Kingdom
- Assume that the player interphases with the game as intended (i.e not actively trying to exploit bugs or glitches)

Dependencies:

- Python3.6 or greater must be installed to run the software
- The python arcade library must be installed to run the software