Card Game GUI

[Github link](https://github.com/GH-DS/project-JSarasua/blob/main/Docs/Directed%20Focus%20Study%20Project%20Proposal.docx)

# Introduction

The goal of this project is to create a GUI for a card game. Card games require GUI features like drag and drop, scaling, and animations to feel good. In industry there have been more and more virtual card games like Hearthstone, Legends of Runeterra, and Gwent. Also, the GUI features card games require cover many areas that are common in all games. The artifact will be a rogue-like deckbuilding game like Slay the Spire.

Give a high-level overview of your project.

* What problem will you solve?
* Why is your project significant to the game industry?
* What artifacts will be produced?

# Detailed Feature Description

Features:

* GUI System
  + Widget-based
    - Widgets inside widgets
    - Click and Drag
    - Transform hierarchy
    - Scroll, Horizontal, Vertical boxes
    - Animations
    - Event based
    - Properties
    - XML
* Card game mechanics
  + Card definitions
  + Tracking gamestate
  + Play card by click and drag
  + Can look at cards in deck unordered
  + Can look at discard pile
  + End turn
  + Health of player and enemy
* Enemy AI
  + Basic actions in sequential order
* Rogue-like mechanics
  + Between fights choice of what card to add/remove/upgrade
  + Fight -> event -> fight order

List each feature and generate the associated user stories. Break the list into two parts “core” and “stretch” features for both Midterm presentation and Final presentation.

Download and review this template on how to write Agile user stories: [Writing Agile User Stories](https://www.projectmanagementdocs.com/template/agile-templates/agile-product-backlog/%23axzz6kkXb7ZC0)

Download and review this template on developing an Agile product backlog: [Developing an Agile Product Backlog](https://www.projectmanagementdocs.com/template/agile-templates/agile-product-backlog/%23axzz6kkYeaSrU)

# Technical Issues

Feature:

* Widgets
  + Poorly understood
  + Don’t know what parameters a widget should take and how to keep track of them
  + Don’t know how to edit them
  + Don’t understand transitions between states
  + Writing layout in XML
  + Risk: High
* Card game versus enemy
  + Card Definitions
    - Could be a lot of work if cards are complicated, so I will try to keep them simple
    - Risk: medium
  + Tracking gamestate
    - Player deck, hand, play area, and discard pile/ player and opponent health shouldn’t be too difficult as I have done it before for thesis
    - Risk: medium
  + Playing cards
    - Click and drag using Widget system. Difficulty is on the widgets
    - Risk: low
  + Viewing deck
    - Deck viewable in uno

List the technical issues for each feature.

* How well do you currently understand the technical issues associated with the feature?
* What is unknown about the feature and what do you believe you need to learn to successfully implement the feature?
* Rate the risk of successfully implementing the feature: high, medium, and low.

# Performance

* What performance issues might arise?
* What tools will you use to solve the issues?

# Testing

* GUI System Automated
  + I can test the widget transform hierarchies by making sure widgets inside widgets are at the correct location
  + I can test the states by making sure they change correctly
  + I can test a widget with default properties uses its parents
* Card Game Automated
  + I can test to make sure only valid moves can be played
  + The deck to hand to play are to discard pile order is maintained
  + Make sure no cards are lost
* No special software should be needed
* Features to test by hand
  + How the GUI visually looks
  + Rendering GUI pipeline

# Bibliography

You must cite all relevant literature you are using.