syst 17796 Deliverable 1

design document template

# Overview

## Project Background and Description

I will be creating a Blackjack game for my project, I have done so primarily because it is one of the card games I am more familiar with. Blackjack is a simple card game, the player is competing with the dealer to see who can get closest to a total of 21 without going over. It works by each the player and the dealer starting with two face up cards, the dealer starts with one face up and one face down . The player and must then decide if they would like to hit (receive more cards) or stand (keep current cards) based on their current total, and the dealers face up card. Blackjack dealers also have specific rules that must be considered: they must hit if they are below 16, and stand if they are at or above 17. There are many more complicated rules such as splitting pairs, insurance, and doubling down.

My goals for this project are: -implement ALL rules of blackjack, even the ones most people wouldn’t know about.

-Player account functionality so usernames, balance etc can be remembered

-functional interface with card images

## Project Scope

I will be completing this project alone, so I will be completing everything/fulfilling all roles myself.

I would like the interface to display the players current cards, the dealers cards (that are visible) their current score in number form, feature buttons for all functions (hit, stand, split, insurance, double down etc), explanations on what all of those buttons do in info boxes. I would also like to implement a fake currency and display the users balance. I will know the project is finished when I can play multiple consecutive hands (no limit but will test ~50), and am satisfied with the appearance of the UI.

## High-Level Requirements

* Ability for each player to register with the game (and simple accounts)
* Currency/betting system and replenishment system (free ofc) in case user runs out of currency to bet
* saving player data on each update
* proper implementaion of casino blackjack rules

## Implementation Plan

https://github.com/emmettlaw10/SYST17796-Project

I expect to update my repository every time I make significant (stable) progress, which will be done weekly. I will store all documents under a seperate folder from my code. I will be storing all relevant files there as a backup of my local ones.

To build the project I will be using Java, and doing so in IntelliJ as it is my preferred IDE.

## Design Considerations

Talk about how the current code is structured as it relates to the following OO principles. Each principle should have 2 or 3 specific examples from the base code or your intended additional code (i.e. potential for improvement).

* Encapsulation
  + keep all changing numbers encapsulated (score, currency balance etc)
  + keep user passwords hidden but display usernames
  + create user account class
* Delegation
  + have delegated functions to update player balance etc. and save to users account at same time
  + Delegated functions to generate both the user and dealer hand
* Flexibility/Maintainability
  + will hardcode group of cards size to 2 as it will always be 2 initially to avoid setters and getters
  + ensure ace value adjusts properly based on hand
  + ensure all code in same classes is relevant to eachother and that ALL relevant code is there