# Project Proposal

## SOFT352 Client-Side Web Scripting

Proposal title: Blackjack Game

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## Functionality

The functionality for this will be a browser based game of blackjack which multiple users can join the game to play against the dealer (Computer controlled). The player will be given a bank of virtual currency to use during their play session, with this they bet the desired amount and aim to beat the dealer.

## Required properties

### Interactive

When the user joins the game, they will be assigned with a specific starting amount of virtual money (E.g. £1000) to which they can then input how much they would like to bet on the round they will be playing (Whether playing single player or multiplayer). The user will be able to then hit or stand with their cards and aim to have the outcome of beating the dealer with the highest set of cards and claim their virtual money prize.

### Distributed/Parallel

The application will be able to be distributed across multiple platforms via allowing 1-4 players to join the game from different computers and will each take turns on what they will do with their cards against the dealer.

### Structured

Here are some of the ways in how I aim to potentially structure my project:

* Implement Singleton, Factory or Abstract pattern (All could be potentially be added given the use case).
* I aim to keep the file structure for code relating to gameplay and networking separate to keep a smooth workflow.
* I will have classes relating to action states (Hit or stand), win/loss states and classes relating to waiting on other players.

## Planned Work

### Resources

Throughout this project here are some of the resources I aim to use:

* Browser based game which will function on all browsers (Potential to allow mobile or tablet users to play through browsers on their devices).
* Amazon Web Services will host the server for the game allowing multiple users to join the game from different computers (Up to 4 players).
* Bootstrap will be used to give the website and game an appealing look towards it.

### Testing

For this project testing will be very important, here are some of the ways I plan on testing this application:

* I plan on writing up BDD tests to test all forms of user actions that would take place when joining or playing the game.
* The BDD tests will be written up using Specflow to make them human readable with the appropriate steps added for functionality.
* With these BDD’s I aim to potentially use Selenium to fully test the functionality of the application.

### Work Plan

Whilst developing this application the way that I plan on breaking my work schedule down would be as follows:

* At the start of creating the application I will first off create a webpage with the initial HTML and CSS layout for the game.
* I will then create simple BDD’s which will fail initially before implementation.
* Then I will work on the functionality of the game working focusing on the JavaScript based events, starting with one player against the dealer then add more player slots.
* Then I aim to have the game connectable through an AWS server, so I will work on all the required networking functionality and test this manually.
* I will then work on finishing the BDD’s for gameplay and networking tests and aim to have them all pass.