

BlackJack Recommendation Generator (Project 2)

FullStack Java Extended

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Technical Report

**Abstract**

This report chronicles the technical accomplishments of the FullStack Java Extended associates on the Revature Training program and its impact on the company. The project consist of a BlackJack Recommendation generator using applications like Eclipse IDE for our backend using technologies likes Java, Spring Boot, Spring MVC and Visual Studio Code (VSC) for our frontend using technologies like Typescript, html, Bootstrap and Angular as our framework.

**Introduction**

The Blackjack Recommendation Calculator will recommend the best move for a user inputted blackjack hand. Recommendations such as splitting the cards, hitting, staying, and doubling. The system also allows for registered users to keep track of past hands, including information such as game outcome, whether the recommendation was followed, and the amount won or lost on each hand. Users can also quickly input multiple games at once and view the analysis rather than getting recommendations one at a time. This history is displayed for each user in both a table and in graphical form for easy analysis. An Admin can view history from all users, as well as the history of each individual user.

**User Stories**

* Users can log in/log out (1 pt)
* Users can see the odds of winning at any stage of the game (2 pt)
* Users can create a profile with a win/loss history (1 pt)
* User can see a random hand and associated odds (2 pt)
* User can choose specific cards to have in their hand (1 pt)
* Users can customize other player's hands in the game (2 pt)
* User can see Dealer's odds at winning at any stage of the game (1 pt)
* User can store information about wins or losses in their profile (2 pt)
* User can view chart to see their odds. (2 pt)
* Users can have a betting balance to track if they're "up" or "down" (2 pt)
* Users can select how many players at the table (2 pt)
* User can start a game (1 pt)
* System can recommend to "hit" or "stay" to a user (2 pt)
* User can split their hand (2 pt)
* ADMIN can view all history and all user information besides passwords. (1 pt)

User roles: USER, ADMIN

DB: User, History

API checked on Postman to check deck creator:

https://deckofcardsapi.com/api/deck/new/shuffle/?deck\_count=1

ERD:

USER TABLE

UserID | Primary Key int

First name | varchar (30) not null

Last name | varchar (50) not null

Password | varchar (20) not null

Email | varchar (80) unique

Role | int default 0

Wins | int

Losses | int

Balance | int default 0

HISTORY TABLE

Game\_id | Primary Key

Player\_Id | references UserID

Outcome | int

InitialHand | varchar(50)

Recommend | varchar(60)

Numofdecks | int

Dealerhand | varchar(5)

Bet | int

FollowedRec | Boolean

UserBalance | int

**Login System**

As a user, either as a normal user or admin can login to the application. The user must enter their personal email or the email they used in order to register to the page as well as a password. The email must be valid and the password must be at least 3 characters long. Once the required fields are entered, the system will identify whether the user that just logged in is either a User or an Admin. The Admin user has more functions than a normal user and that is because an Admin can view the history of all users, as well as their information.

A screenshot of a computer

Description automatically generated

A screenshot of a computer

Description automatically generated with medium confidence

**Register System**

As a new user, you must enter the following fields: First Name, Last name, email and a password. The first name and last name must be at least three characters long and twenty at the most. The email filled in the system must exist in order to register. The password must be at least three characters long and there’s no limit to the length of the number of characters for the password. Once all the fields are filled in and entered successfully, the user is now registered and now the user can login to the application.

A screenshot of a computer

Description automatically generated

**User profile**

As a user, you can edit your profile details like firstname, lastname and password. You can see the previous User information on the top of the page and that’s because once you’re logged in to the application, a token of the user is stored. The first name and last name must be at least three characters long and twenty at the most. The password must be at least three characters long and there’s no limit to the length of the number of characters for the password. Once the user finished filling out the new information, it is automatically changed in the database and it is shown in the upper part of the application. The information that is displayed in the middle part of the page, is the history of the user while playing BlackJack.

Graphical user interface, application

Description automatically generated

A screenshot of a computer

Description automatically generated

**Admin Board**

As an admin, you can check a table where the information of all the users is stored except password, for security measures. The admin can also see a history table of all the games that are stored in the application. The information can be sorted my bet, game id, player’s id, wins and losses.

Graphical user interface, application

Description automatically generated

**Quick Add**

A user can declare his initial hand, then the dealer will show off his card. The user can either follow a recommendation or not and bet money to play. The System can recommend a user to hit or stay at the game.

A screenshot of a computer

Description automatically generated

**Recommendation**

The system will give a recommendation to a user according to the cards that they have on their hand. The user can decide whether to follow the recommendation according to the cards that they have in their hand and the dealer's face up card. The recommendations are as follows: stand, hit, split, double, surrender. The recommendations are based upon best BlackJack practice to diminish house edge. A unique feature added is that everytime you select a card, an actual image of the card will show up next to the dropbox.

A screenshot of a computer

Description automatically generated