**How to Run the Program:**

Open the src folder using android studio and run the program

**Bug Report:**

No bugs found

**Feature Report**:

**Missing features**: Saving the game. User is able to read the game but does not include feature to save a playing game

**Extra features**: No extra features

**Data Structures/classes**:

Card: Class that creates object with member variable suit and face. Represents a single card object that is used in a deck class.

Deck: Composed of vector of pointer to Card objects. Creates a deck of 52 unique cards and stores it in a vector of pointer to cards. Provides functionality to shuffle the cards that are present on the vector.

Game: Provides the options to start a new game or load a saved game. When a round ends, provides option to start another round. If user wants to quit the game, fetches the result of the game from player class and displays the winner.

Round: Represent a single round in a game. Contains logic that implements that determines turn of the player changes turn and provide option to play, serialize, ask for help for human player, and exit the game. Data structure used is vector of pointer to card and an array of players

Player: Represents a player in the game. Contains a virtual function play which is implemented by human and computer class. Also contains strategy for playing from the stockpile for human and computer. Provides all the necessary functionalities that are common to both human and computer class. Data structure used is vector of pointer to cards.

Human: Class that Inherits from the player class and implements the virtual function play which is in player class and also implements the strategy of play from hand for human player.

Computer: Inherits from the player class and implements the virtual function play which is in player class and also implements the strategy of play from hand for computer player.

Serializer: Provides human user an option to serialize the state of the game at any point in the game to a text file and also provides an option to load a saved state of the game. Data structure used is vector of pointer to cards

**Screenshots:**

**Help**

**A close up of electronics

Description automatically generated**

**Save Game**

**A screenshot of a cell phone

Description automatically generated**

**Loaded Game Case 3**

**A close up of electronics

Description automatically generated**

**Result, Exit Game, Next Round, and Display Winner**

A screenshot of a cell phone

Description automatically generated

Entry Screen

A screenshot of a cell phone

Description automatically generated

**ROUND with human hand, computer hand, layout, stock pile, computer score, human score**

**A screenshot of a computer

Description automatically generated**

**Capture pile for human, computer, layout, and stock pile**

**A screenshot of a computer

Description automatically generated**

**Log:**

March 27

Read the description of the for java and how to separate Model from View and learned more about MVC pattern

Time spent 1 hour

April 1

Transferred all the basic class like Card, Deck, Player class basic functionalities, Human Class with no implementation, Computer Class with no implementation, Game Class basic functionalities to Java

2.5 hours spent

April 21

Started experimenting with activities in android studio and designing the GUI portion of the project.

1 hour

April 22

Created Main Activity that provides entry screen to the game, Round Activity.

2 hours

April 24,25

Wrote the controller class and linked the activities with the model classes using the controller class. Got all the information of a round and displayed it in the Round Activity in android GUI

4 hours spent

April 26

Created the Result Activity class to display the result at the end of a round and provide option to play next round, end game or display winner.

1 hour

April 27

Implemented the serialization part in Java. Used Asset manager to read the test cases and added the readFromFile function that reads the text from text file and uploads it to the round when the user clicks the load game option.

2 hours

April 28

Synced the console output with the Activity actions to display cards on console when any card is clicked on the Round Activity.

1 hour

April 28,29

Documented the majority of the code and worked on the manual to finish up the project.

5 hours