Implementation Manual:

App

+private Deck deck;
+private Player player;
+private Player dealer;
+private Label playerScoreLabel;
+private Label dealerScoreLabel;
+private Button hitButton;
+private Button standButton;
+private Button playAgainButton;

+void main(String[] args)
+void start(Stage primaryStage)
+GridPane()
+VBox()
+Scene(gridPane, 400, 150)
+void startGame(String playerName)
+void updateGameScreen()
+void endGame()

Deck

+private int currentIndex

+ArrayList()
+Deck()
+shuffle()
+deal()

Card

+private final Rank rank
+private final Suit suit

+Card(Rank rank, Suit suit)
+getRank()
+getSuit()
+getValue()
+toString()

Suit

Club
Diamond
Heart
Spade
+private final String name

+toString()
+Suit(String name)

Rank

Two
Three
Four
Five
Six
Seven
Eight
Nine
Ten
Jack=10
Queen=10
King=10
Ace=1
+private final int value

+getValue()
+Rank(int value)

Player

+private final String name
+int score
+int numAces

+ArrayList()
+Player(String name)
+getName()
+getCards()
+addCard(Card card)
+getScore()
+getRank()
+getValue()
+isBust()
+wantsToHit()

Dealer

+Dealer()
+playTurn(Deck deck)
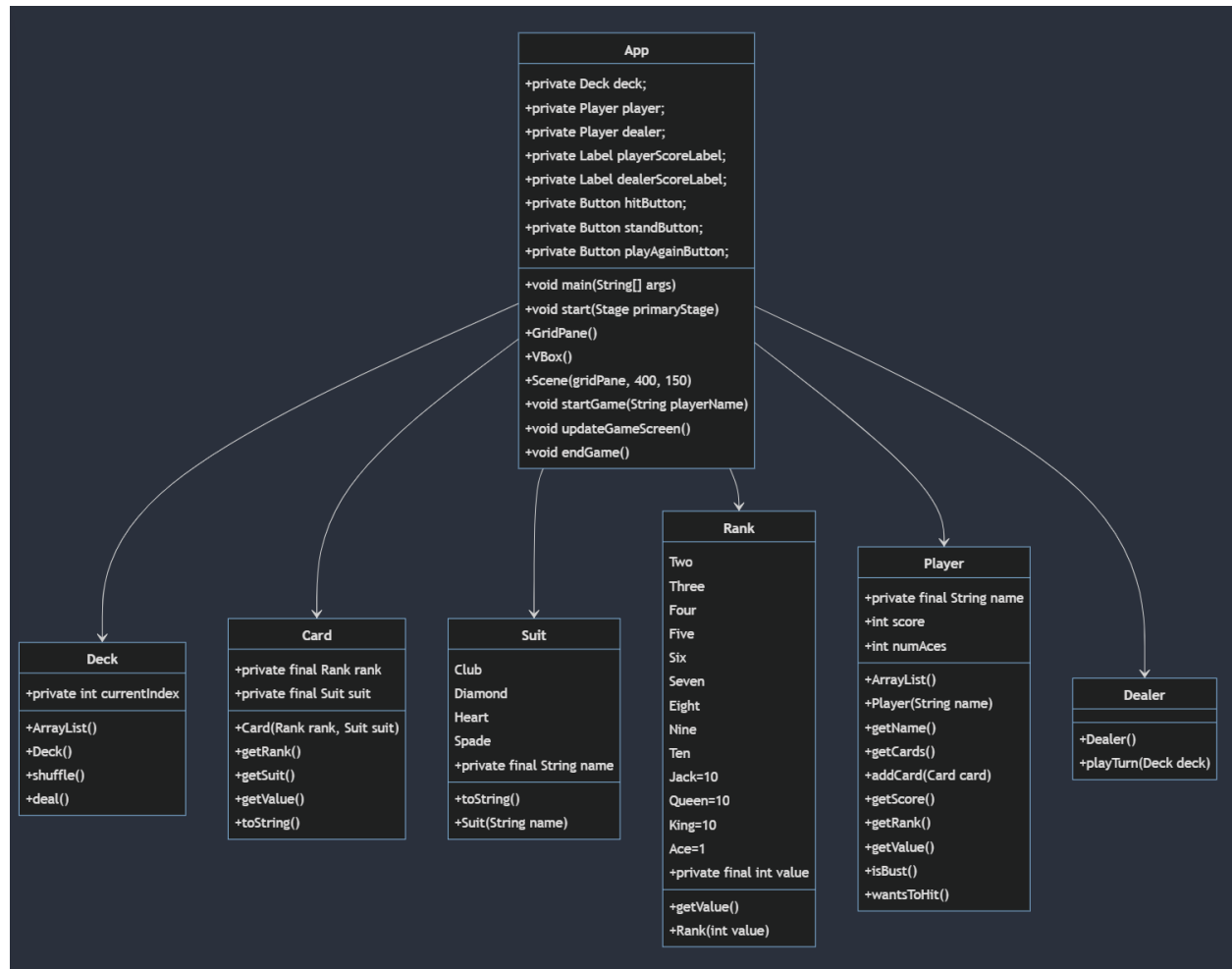
My application is written in Java and uses the JavaFX library for the GUI components.

Requirements

- JDK 11 or higher.
- JavaFX libraries.
- An Operating system like Windows or Mac.

Tech details

There are seven main components to my project:

1. First is the App.java which
2. Second is Player.java which basically determines all the things specific to the human player like their score, what suit of cards they have, etc.
3. Third is the Dealer.java which determines how the AI dealer functions and they will always hit while under seventeen.
4. Fourth is Card.java which helps return each specific type of card with the rank and suit.
5. Fifth is Deck.java which holds the full deck of cards and shuffles them so the cards are randomized.
6. Sixth is Rank.java which determines the value of each type of card.
7. Seventh is Suit.java which returns which type of card it is: Spade, Heart, Diamond, or Club.