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CIS-5

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## Final Project: Blackjack

## Introduction:

The objective of Blackjack is to get the sum of your cards as close to equalling 21 without going over. To beat the dealer, your sum has to be greater than theirs, while not exceeding 21. If the player/dealers sum exceeds 21 then they bust. If both the dealer, and the player bust then it is a tie. It is also a tie if the dealers sum and the players sum both equal each other while being under 21.

### The Players Turn:

The game begins with the the dealer and player getting 2 cards, one of the dealer's card will be right side up. If the player would like to get closer to 21, they hit and receive another card. If the player is okay with their sum then they stay and it is the dealers turn. Because the player goes 1st, this gives the dealer an advantage, giving the player a chance to bust before the dealer even has to go.

### The Dealers Turn:

The dealer flips over their other card, now showing the second value to the player. The dealer will then hit and receive another card until their sum is equal to or greater 17.

## The Game:

- 1) The game begins with a menu. There are 4 options available in the menu
  - a) To play the user enters (P)
  - b) To add money to their stash, they enter (M)
  - c) To check how much money they have in their stash, they enter (S)
  - d) To exit the program the user enters (E)

```
Output x
k_Final_v8 (Build, Run) #2 x BlackJack_Final_v8 (Run) #2 x BlackJack_Final_v8 (Build, Run) x BlackJack_Final_v8 (Run) x
Welcome to BlackJack!
-To Play, Enter (P)
-If You Would Like To Add Money To Play With, Enter (M)
-To Check How Much Money You Have In Your Stash, Enter (S)
-To Exit Program, Enter (E)
```

- 2) If they don't listen, Validates User Input and repeats question

```
Output x
Run x BlackJack_Final_v8 (Build, Run) #2 x BlackJack_Final_v8 (Run) #2 x BlackJack_Final_v8 (Build, Run) x BlackJack_Final_v8 (Run) x
Welcome to BlackJack!
-To Play, Enter (P)
-If You Would Like To Add Money To Play With, Enter (M)
-To Check How Much Money You Have In Your Stash, Enter (S)
-To Exit Program, Enter (E)
1
Invalid Input, must be either (P), (M), (S) or (E);
Welcome to BlackJack!
-To Play, Enter (P)
-If You Would Like To Add Money To Play With, Enter (M)
-To Check How Much Money You Have In Your Stash, Enter (S)
-To Exit Program, Enter (E)
```

- 3) If the User enters (M)

```
-----
How Much Money Would You Like To Add?
Warning: If you enter a letter, it will break :'(
```

- 4) If The User enters (S)

```
-----
Money currently in your stash = $40
Welcome to BlackJack!
-To Play, Enter (P)
-If You Would Like To Add Money To Play With, Enter (M)
-To Check How Much Money You Have In Your Stash, Enter (S)
-To Exit Program, Enter (E)
```

### 5) If the User enters (E)

```
Welcome to BlackJack!
-To Play, Enter (P)
-If You Would Like To Add Money To Play With, Enter (M)
-To Check How Much Money You Have In Your Stash, Enter (S)
-To Exit Program, Enter (E)
e

RUN SUCCESSFUL (total time: 13m 18s)
```

### 6) When the user inputs (P), they are then asked how much money they would like to bet.

```
Welcome to BlackJack!
-To Play, Enter (P)
-If You Would Like To Add Money To Play With, Enter (M)
-To Check How Much Money You Have In Your Stash, Enter (S)
-To Exit Program, Enter (E)
p

-----
Enter the Amount of money you would like to bet.
Minimum bet = $5-----Max Bet = $500
Bet =
```

### 7) The user then chooses whether they want to hit or not with (Y), or (N)

#### a) Validates User input if they enter anything besides y or n

```
-----
Card 1 = Ten
Card 2 = Queen
Dealers Card is Ace
-----
Would you like to hit?-Input 'Y' for yes and 'N' for no
```

### 8) If the user enters (Y), they receive another card

```
Would you like to hit?-Input 'Y' for yes and 'N' for no
Y
Card 1 = Seven
Card 2 = King
Card 3 = Six
Dealers Card is King
-----
Would you like to hit?-Input 'Y' for yes and 'N' for no
```

9) If the user enters (N), they stay and their sum gets calculated and displayed

```
-----  
You decided to stay  
Card 1 = 7  
Card 2 = 10  
Sum = 17  
Dealers card is Five  
-----  
Type 'Y' for the dealer to show their 2nd Card  
█
```

10) In this case the player wins, the game then asks the user if they want to play again. If the user enters (Y), the game restarts. If they enter (N) the game ends.

```
Output x  
rcx_Final_v7 (Build, Run) x BlackJack_Final_v7 (Run) x BlackJack_Final_v8 (Build, Run) #2 x BlackJack_Final_v8 (Build, Run)  
Your sum = 20  
The Dealer busts. Congrats, you win!!  
You won 5 $  
-----  
Would you like to play again? Input 'Y', for yes or 'N' for no.  
n  
-----  
Thank you for playing.  
RUN SUCCESSFUL (total time: 1m 16s)  
█
```

### Special Note: If the user gets an Ace

If the user receives an ace, they pick the value of that card when they decide to stay. The sum is then calculated.

```
Would you like to hit?-Input 'Y' for yes and 'N' for no
y
Card 1 = Ten
Card 2 = Five
Card 3 = Ace
Dealers Card is Jack
-----
Would you like to hit?-Input 'Y' for yes and 'N' for no
n
-----
You decided to stay

Card 3 is an Ace!
If you would like the value to = '11', input Y. If you would like the input to = '1', input 'N'
n
Card 1 = 10
Card 2 = 5
Card 3 =1
Sum = 16
Dealers card is Jack
-----
Type 'Y' for the dealer to show their 2nd Card
y
```

## Another Sample Game

```

BLACKJACK_Final_V/ (RUN) #2 x BLACKJACK_Final_V/ (BUILD, RUN) x BLACKJACK_Final_V/ (BUILD, RUN) x
Welcome to BlackJack!
-To Play, Enter (P)
-If You Would Like To Add Money To Play With, Enter (M)
-To Check How Much Money You Have In Your Stash, Enter (S)
-To Exit Program, Enter (E)
p

-----
Enter the Amount of money you would like to bet.
Minimum bet = $5-----Max Bet = $500
Bet = 5

-----
Card 1 = Ten
Card 2 = Three
Dealers Card is Eight

-----
Would you like to hit?-Input 'Y' for yes and 'N' for no
y
Card 1 = Ten
Card 2 = Three
Card 3 = Eight
Dealers Card is Eight

-----
Would you like to hit?-Input 'Y' for yes and 'N' for no
n

-----
You decided to stay

Card 1 = 10
Card 2 = 3
Card 3 = 8
Sum = 21
Dealers card is Eight

-----
Type 'Y' for the dealer to show their 2nd Card
Y
Dealers 1st Card = Eight
Dealers 2nd Card = Ace
Dealer's Sum = 19
Your sum = 21
Congrats, you win!!
You won 5 $

-----
Would you like to play again? Input 'Y', for yes or 'N' for no.
n

```