

Project 1

Blackjack

CSC-5

48978

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Author

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Introduction

Blackjack, also known as twenty-one, is a comparing card game. Its first recorded history was in Spain in the early 15th century. In the game cards are given a value 1 to 11. At the start the player and dealer are both given two cards, if the cards do not add up to 21, then each player may ask for more cards, up to 8 cards total, in order to reach a number that is close to 21. If your cards value exceed 21, then you automatically lose the game, that is referred to as a bust.

Summary

Total lines of code: 193

Total Variables: 12

Total Functions: 7

Total Libraries: 5

Created a blackjack game based off traditional rules.

Certain features were unable to be implemented due to time restraints.

Description

The game starts by welcoming the user to the table, then telling the user to press ENTER to begin.

The “dealer” then deals cards to himself and the user to play the game.

Then the value of the user cards are displayed. If the value of the user cards are low and not high enough to be close to the value of 21 the user may ask for another card added to their hand. If the card total exceeds to the allowed limit 21, then a messages is displayed letting the user know they have lost the game due to exceeding the limit. If the user is within the range then the game continues and the game displays who the winner is based off both the dealer and users cards total value.

Pseudo Code

```
//System Libraries
//Input - Output Library
//Time for rand
//Srand to set the seed
//File I/O
//Format the output NOT USED
//Strings, not for puppets
//everyone loves math NOT USED
//The Standard namespace for system libraries

//Function Prototypes Here

//function to display winner
//function to display loser, how sad.
//function to display if card conditions are met
//function to add another card to user hand
```

```
//string to let user know if they've exceeded maximum value 21
//function to shuffle dealer cards
//function to shuffle user cards

//Program Execution Begins Here
//Input File
//Output File
//set random number seed

//variables for dealer cards
//first dealer card variable
//second dealer card variable
//dealer card total variable

//first card variable for user
//second card variable for user
//user card total variable

//char command for user input.

//additional card variable for user hand

//boolean expression for user error to display bust string

//output to user program greeting
//lets user know name of game
//first user input ENTER

//input data
//String Name
//Character Array Name
//Open the Input file
//Open the Output file

//call function dealer cards to be dealt
//call function for second dealer card
//call function user cards to be dealt
//call function for second user card
//call additional hand for user deck

//output dealer card results
//first card output to user
//second card output to user
//pause exit until user presses enter

//output to user card results
//first card output to user
//second card output to user
```

```
//output to user total card number
//pause exit until user presses enter

//ask user if they would like to add card to current hand

//call play card function
//ask user if they want to add another card to hand
//lets user know if they have won or loss

//output to user total card number

//ask user if they want to keep current cards

//output to user total card number

//display if user has exceeded 21

//if user card less than 21 display loser

//display winner if user card is 21 (blackjack)

//Exit

//Function Prototypes
//function to shuffle user cards
//highest value in blackjack is 11
//shuffle second card

//function to shuffle dealer cards
//highest value in blackjack is 11
//shuffle dealer second card

//function to display if user has won, cheer!

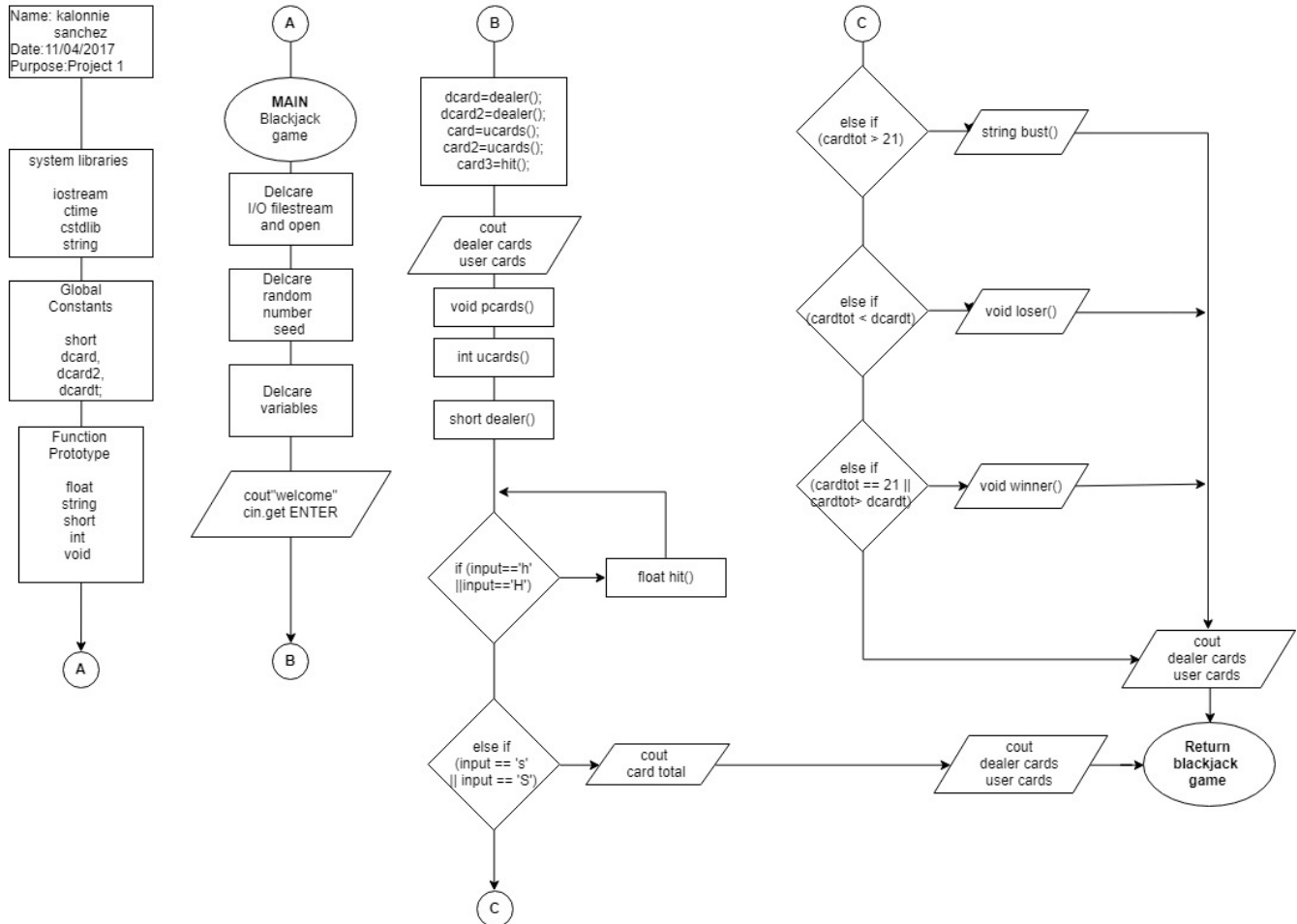
//function to display if user has lost, how sad.

//add card function

//string letting user know they've exceed card limits

//ask user if they want to add another card to hand
```

Flowchart Blackjack



Variables

Short	Variable Data Type
dcard	first dealer card variable
dcard2	second dealer card variable
dcardt	total dealer card variable
Int	Variable Data Type
card	first card variable for user
card2	second card variable for user
cardtot	user card total variable
Char	Variable Data Type
input	char command for user input.

Float	Variable Data Type
card3	additional card variable for user hand
Bool	Variable Data Type
error	boolean expression to display error string

Program

```

#include <iostream>
#include <ctime>
#include <cstdlib>
#include <fstream>
// #include <iomanip>
#include <string>
// #include <cmath>

using namespace std;

void
winner(),
loser(),
pcards();

float
hit();

string
bust();

short
dealer();

int
ucards();

int main(int argc, char** argv) {
    ifstream in;
    ofstream out;

    srand(time(0));

    short
    dcard,
    dcard2,
    dcardt;

```

```

int
card,
card2,
cardtot;

char
input;

float
card3;

bool
error(0);

cout
    <<"Welcome to the table\n"
    "Today's game is BLACKJACK\n"
    "Pull up a seat and press ENTER to continue\n";
cin.get();

//input data
string inName="GameInfo.dat";
char outName[]="GameStats.dat";
in.open(inName.c_str());
out.open(outName);

dcard=dealer();
dcard2=dealer();

card=ucards();
card2=ucards();

card3=hit();

cout//output dealer card results
    <<"\nDEALER card 1:["<<"?"<<"]"
    <<"\nDEALER card 2:["<<dcard2<<"]";
cin.get();

cout
    <<"\ncard 1:["<<card<<"]"
    <<"\ncard 2:["<<card2<<"]"

    <<"\nYour total is :["<<card+card2<<"]";
cin.get();//pause exit until user presses enter

cout
    <<"\nWould you like to Hit or Stay?\n"

```

```

        "Press (h) to Hit or press (s) to Stay.\n";
    cin
        >>input;

    pcards();

    if (input=='h' || input=='H'){
    cout
        <<"\nYour total is :["<<card+card2+card3<<"]"
        <<"\nDealer total is :["<<dcard+dcard2<<"]";
    }
    else if (input == 's' || input == 'S'){
        cout//output to user total card number
        <<"\nYour total is :["<<card+card2<<"]"
        <<"\nDealer total is :["<<dcard+dcard2<<"]";
    }
    else if (cardtot > 21){
        error=1;
        bust();
    }
    else if (cardtot < dcardt){
        loser();
    }//display winner if user card is 21 (blackjack)
    else if (cardtot == 21 || cardtot> dcardt){
        winner();
    }
    in.close();
    out.close();
    return 0;//Exit
}

int ucards(){
    int
    card,
    card2,
    cardtot;
    card = 11 + rand() / (RAND_MAX / (1 - 11) + 1);
    card2 = 11 + rand() / (RAND_MAX / (1 - 11) + 1);
}

short dealer(){
    short
    dcard,
    dcard2,
    dcardt;
    dcard = 11 + rand() / (RAND_MAX / (1 - 11) + 1);
    dcard2 = 11 + rand() / (RAND_MAX / (1 - 11) + 1);
}

```



```

void winner(){
    cout
        <<"\nGood job, you're a winner.";
}

void loser(){
    cout
        <<"\nSorry, You've lost.";
}

float hit(){
    char
    input;
    int
    cardtot;
    float
    card3;
    if (input=='h' || input=='H'){
        card3 = 11 + rand() / (RAND_MAX / (1 - 11) + 1);
        cardtot+=card3;
    }
    return cardtot;
}

string bust(){
    return "Oh no, you've been BUSTED.\n";
}

void pcards(){
    char
    input;
    int
    cardtot;
    short
    dcardt;
    if (input=='h' || input=='H'){
        hit();
    }
}

```

References

Gaddis, Tony. *Starting Out with C++ from Control Structures to Objects 8th* Pearson, 2015. Print
<http://www.cplusplus.com>