Project 2

<Cheapo Casino>

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Introduction

Title: Cheapo Casino

This is a collection of simple games that were featured in the movie Vegas Vacation. They are all very simple pieces of code, but combined into an entire body of work became more encompassing and issues were not completely avoided.

This program uses the menu function provided by Dr. Lehr, and puts the spin of games into it. For the future, I intend to have all of the individual games run one after the other in a ‘gauntlet’ type of function. I tried to figure it out in this iteration, but to no luck.

As well, I intend to add WAR, the last game from that scene. I need to learn some other portions (class, vectors, etc) to utilize the programming, but I expect to figure it out for the final project assignment.

Summary

The Coin Toss game asks the user to enter heads or tails and through the random function compares the choice with a computer driven value, then repeats

The Guess Which hand game is very similar, with the user selecting left or right, and compares it with a random computer driven value

The Pick 1 through 10 function is the same with a random value being generated and the user guessing, and receiving a note of too high or too low

The Rock Scissors Paper function generates 1 through 10 again, but this time assigns values between three different ranges and compares it against the users choice. This comparison is done with one line of a literal user input vs the number value in a boolean statement.

Project 2 Note: The War Function utilizes strings and structure, and the high score function handles sorting and structure packaged in a file I/O process.

Notes

Since three of the functions are very similar, I expect only one function to count toward the 100 line requirement, but I am still within the line requirement on my original code (also excluding the professor’s menu function)

Pseudocode

Menu Function
    Display Choices
    Get choice
    Switch choice

Coin Toss
    Initialize
        integer variables
        random function

    do
        output problem statement
        input guess

        set coin=rand() %2+1 (1 or 2)

        if coin=1 --> heads
        if coin!=1 --> tails

        if guess=coin
            correct
            increment correct++

        else
            incorrect

        if correct reaches 10, break back to menu

    while guess is 1 or 2

Guess Which Hand
    Initialize
        integer variables
        random function

    do
        output problem statement
        input guess

```
            set hand=rand() %2+1 (1 or 2)

            if hand=1 --> left
            if hand!=1 --> right

            if guess=hand
                    correct
                    increment correct++

            else
                    incorrect

            if correct reaches 10, break back to menu

        while guess is 1 or 2

Pick Number 1 to 10
        Initialize
                integer variables
                random function

        do
                output problem statement
                input guess

                set answer=rand() %10+1 (1 through 10)

                if answer=1 --> left
                if answer!=1 --> right

                if guess=answer
                        correct
                        increment correct++

                else
                        too high or too low

                if correct reaches 10, break back to menu

        while guess is 1 to 10
```

Rock Paper Scissors

Initialize
integer variables
random function

input choice: (rock, paper, scissors)

set comp=rand() %10+1 (1 through 10)

less than three == rock
three to six == paper
seven to ten == scissors

if 'rock' ->scissors, 'scissors'->paper, 'paper'->rock (choice->comp)

output
you win, correct++

else
you lose

Source Code

```
/*
 * File: main.cpp
 * Author: William Brahams
 * Created on: July 17, 2015, 7:30 PM
 * Purpose: Project 2*/

//System Libraries
#include <iostream>
#include <iomanip>
#include <cstdlib>
#include <time.h>
#include <cstring>
#include <stdio.h>
#include <fstream>
using namespace std;

//Global Constants

//Function Prototypes
void Menu();
int getN();
void def(int);
void HighSco();
void cointos();
void guessha();
void picknum();
void rocscip();
void war();
void gauntlet();
void DispDat();
void CollDat ();

//Execution begins here
int main(){
    int inN;
    clock_t start,finish;
    int duration = 0;
    do{
        Menu();
        inN=getN();
        switch(inN){
```

```
        case 1: cointos();break;
        case 2: guessha();break;
        case 3: picknum();break;
        case 4: rocscip();break;
        case 5: war();break;
        case 6: gauntlet();break;
        case 7: HighSco();break;
           default:;
        };
    }while(inN<8);
    /*do{
        Menu();
        inN=getN();
        switch(inN){
        start = clock();
        case 8: cointos();
        case 9: guessha();
        case 10: picknum();
        case 11: rocscip();
        finish = clock();
        duration = ((finish - start)/CLOCKS_PER_SEC);
            default:;
        };
    }while(inN>7);
      */
    return 0;
}

//Menu Function
void Menu(){
    int duration=0;
    clock_t start, finish;

    cout<<"Welcome to the Griswald Cheapo Casino, where 'none of these"<<endl;
    cout<<"games are found at the Mirage!"<<endl<<endl<<endl;
    cout<<"Type 1 for Coin Toss"<<endl;
    cout<<"Type 2 for Guess Which Hand"<<endl;
    cout<<"Type 3 for Pick a Number"<<endl;
    cout<<"Type 4 for Rock, Scissor, Paper"<<endl;
    cout<<"Type 5 for War"<<endl;
    cout<<"Type 6 to run the first 4 for a time trial"<<endl;
    cout<<"Type 7 for the high scores"<<endl;
    cout<<"Type 8 to exit \n"<<endl;
```

```
}

/*******************************************************
 ***************** getN** ****************************
 *******************************************************
 * Purpose:  To pull the selection for the switch statement
 * Input:
 *      int 1-7
 * Output:
 *      int 1-7
 *///Choose problem number function
int getN(){
    int inN;
    cin>>inN;
    return inN;
}




/*******************************************************
  ***************HighSco*******************************
 *******************************************************
 * Purpose: Record the time into a .txt file
 * Input/Output: Seconds elapsed
 *
 */

void HighSco(){

        fstream infile("scores.txt",ios::in);
        if(!infile){cerr<<"file could not be found!";exit(1);}

        fstream outfile("average.txt",ios::out);
        if(!outfile){cerr<<"file could not be created!";exit(1);}


        char fname[20];
```

```
        char lname[20];
        int scores;
        char c;
        int lines=1;
        double avg=0;

        while(infile.get(c))
        {if(c=='\n') lines++;}
        infile.clear();
        infile.seekg(0);

        for(int k=0;k<lines;k++)
           {
              infile>>fname;
              infile>>lname;
              outfile<<fname<<" "<<lname<<" ";
              int sum=0;
              for(int i=0;i<10;i++)
              {
                 if(infile>>scores)
                 {sum+=scores;
                 outfile<<scores<<" ";}
              }

              outfile<<(double)sum/10.0<<endl;
           }



}
/**************************************************
 ***************** cointos*****************************
 **************************************************
 * Purpose:  Coin toss
 * Input:
 *      1 or 2 (heads or tails)
 * Output:
 *      win or loss
 */
void cointos(){
   //initialize random with time
        srand(time(NULL));
           int guess;
```

```
    int correct=0;
  //Set correct to zero

      do{
            cout<<"Try to guess the coin flip"<<endl;
            cout<<"Heads or tails? (1 or 2)"<<endl;
            cin>>guess;

            if(!cin)
                  break;
            //If no entry, send back through loop
            int coin=rand()%2+1;
            //Mod2 + 1 => outputs 1 or 2
            string HeadorT;
            if (coin==1)
                  HeadorT = "heads";
            else
                  HeadorT = "tails";
            //Assign heads or tails

         //Output statement
            if (guess == coin){
            correct++;
            //Increment correct up if chosen correctly
                  cout<<"Correct, flip is " <<HeadorT<<endl;
            cout<<"Total correct: "<<correct<<endl;
         }
            else if (guess != coin){
                  cout<<"Sorry, the flip was " <<HeadorT<<endl;
            cout<<"Total correct: "<<correct<<endl;
         }
         if (correct==10)
            break;
      }while (guess !=1 || guess !=2);
    //Maintain loop as long as inputs are 1 or 2
   }

//Coding for guesshand() and picknum() are practically identical functions

/*****************************************************
 ***************guesshand*****************************
 *****************************************************
 * Purpose:  Guess which hand the item is in
```

```
 * Input:
 *      1 or 2 (left or right)
 * Output:
 *      win or loss
 */
void guessha(){
   srand(time(NULL));
         int guess;
       int correct=0;

          do{
             cout<<"In one of my hands is a half-dollar"<<endl;
                   cout<<"Guess which hand I am holding it in"<<endl;
                   cout<<"Left or Right? (1 or 2)"<<endl;
                   cin>>guess;

                   if(!cin)
                            break;

                   int hand=rand()%2+1;

                   string LeftorR;
                   if (hand==1)
                            LeftorR = "right";
                   else
                            LeftorR = "left";

                   if (guess == hand){
                   correct++;
                            cout<<"Correct, its in my " <<LeftorR<<" hand "<<endl<<endl;
                   cout<<"Total correct: "<<correct<<endl;
              }
             else if (guess != hand){
                            cout<<"Sorry, its in my " <<LeftorR<<" hand."<<endl<<endl;
                   cout<<"Total correct: "<<correct<<endl;
             }
              if (correct==10)
                 break;
          }while (guess !=1 || guess !=2);
}

/*****************************************************
 ****************picknum*********************************
```

```
 ******************************************************
 * Purpose:  Guess which hand the item is in
 * Input:
 *      1 thru 10
 * Output:
 *      win or loss
 */
void picknum(){
   srand(time(NULL));
         int guess;
       int correct;

         do{
            cout<<"I'm thinking of a number between 1 and 10"<<endl;
                  cout<<"Guess which number I am thinking of (1-10)"<<endl;

                  cin>>guess;

                  if(!cin)
                           break;

                  int answer=rand()%10+1;


                  if (guess > answer){
                   cout<<"Too high, it was " <<answer<<endl<<endl;
                   cout<<"Total correct: "<<correct<<endl;
            }
                  else if (guess < answer){
                           cout<<"Too low, it was " <<answer<<endl<<endl;
                   cout<<"Total correct: "<<correct<<endl;
            }
            else if (guess==answer){
               correct++;
               cout<<"correct!";
               cout<<"Total correct: "<<correct<<endl;
            }
            if (correct==5)
               break;
         }while (guess<=10);
}

/******************************************************
```

```
 ***************rocscip*******************************
 ****************************************************
 * Purpose:  Play rock scissors paper
 * Input:
 *      rock, scissors or paper
 * Output:
 *      win or loss
 */
void rocscip(){
   do{
                    string choice;

                    int comp;
              int correct=0;

                    cout<< "Welcome to Rock, Paper, Scissors!"<<endl<<endl;
                    cout<< "Play against the computer for a chance to win!"<<endl;
                    cout<< "Please choose rock, paper, scissors or quit"<<endl;

                    cin>>choice;

                    cout<<"You: "<<choice<<endl;

                    srand(time(0));

                    comp=rand() %10+1;

                    if (comp <=3)
                    {
                              cout<<"Computer: Rock"<<endl;
                    }
                    else if(comp<=6)
                    {
                              cout<<"Computer: Paper"<<endl;
                    }
                    else if (comp>=7)
                    {
                              cout<<"Computer: Scissors"<<endl;
                    }


                    if((choice=="rock" && comp>=7) || (choice=="paper" && comp<=6) ||
(choice=="scissors" && comp<=3))
```

```
                {
                cout<<"You win!" <<endl<<endl;
                correct++;
                cout<<"Total wins: "<<correct<<endl;

            }
            else
            {
                cout<<"You lose!"<<endl<<endl;
                cout<<"Total wins: "<<correct<<endl;
            }
        } while (cin.get());

        cin.get();
}

//Solution to problem 5
void war(){

  int money;
  int bet;
  int PlayCar=0;
  int CompCar=0;
  string PlayCarName;
  string CompCarName;

  int PSuitNu=0;
  int CSuitNu=0;
  string PlaSuit;
  string ComSuit;
  char keePlay;


cout << endl;
cout<<"How many dollars go you have?"<<endl;
cin>>money;
cout<<"Enter bet amount ($)"<<endl;
cin>>bet;

  do{


  // Generates a random number from 2 to 14
```

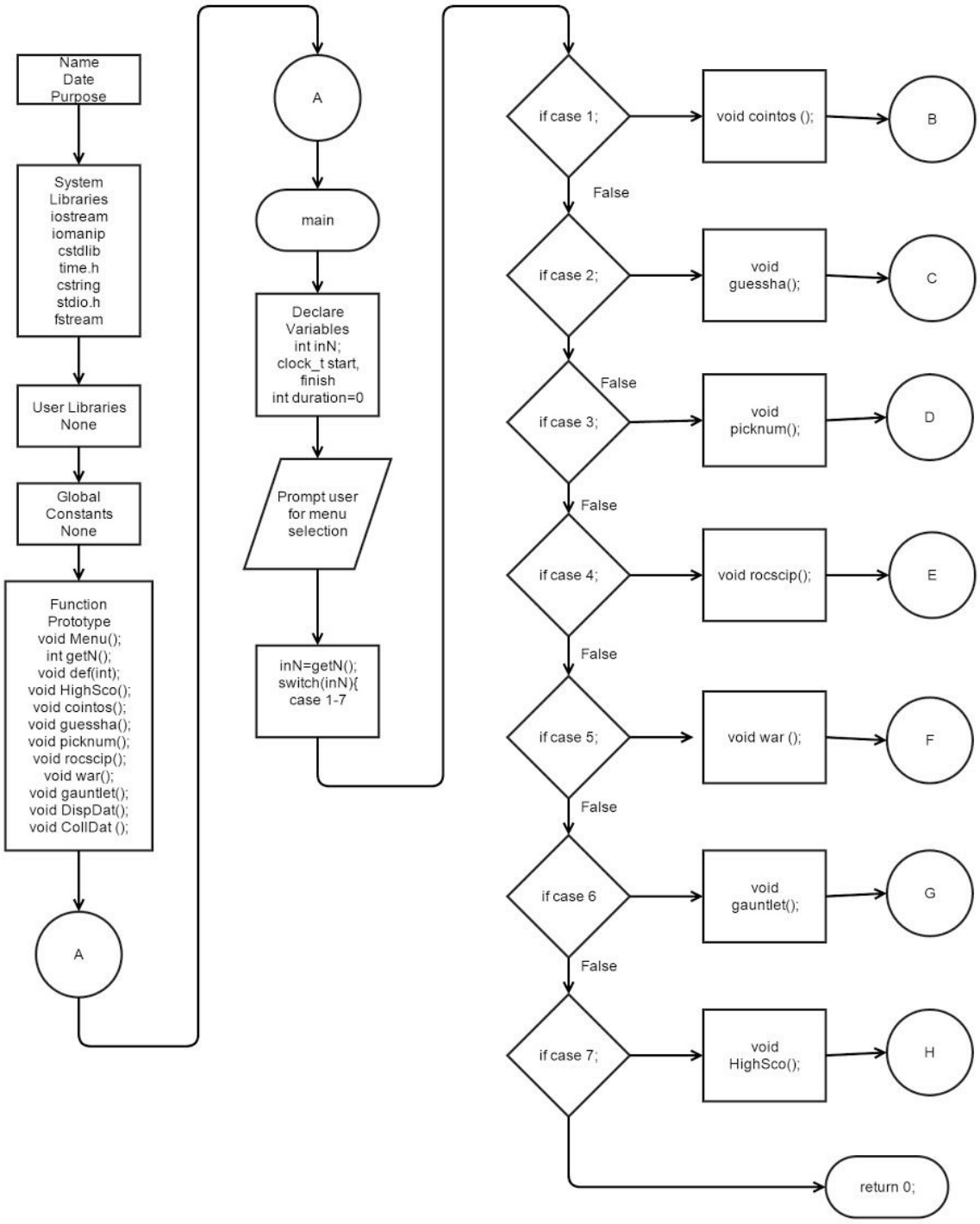
```
PlayCar =  2 + (rand() % 13);
CompCar =  2 + (rand() % 13);

// Assigns Player card value
if (PlayCar < 11)
  PlayCarName = PlayCar;
if (PlayCar == 11)
  PlayCarName = "Jack";
if (PlayCar == 12)
  PlayCarName = "Queen";
if (PlayCar == 13)
  PlayCarName = "King";
if (PlayCar == 14)
  PlayCarName = "Ace";

// Assigns computer card value
if (CompCar < 11)
  CompCarName = CompCar;
if (CompCar == 11)
  CompCarName = "Jack";
if (CompCar == 12)
  CompCarName = "Queen";
if (CompCar == 13)
  CompCarName = "King";
if (CompCar == 14)
  CompCarName = "Ace";

// Generates a random number from 0 to 3
PSuitNu = rand() % 3;
CSuitNu = rand() % 3;

// Assigns suit to Player card
if (PSuitNu == 0)
  PlaSuit = "Spades";
if (PSuitNu == 1)
  PlaSuit = "Diamonds";
if (PSuitNu == 2)
  PlaSuit = "Hearts";
if (PSuitNu == 3)
  PlaSuit = "Clubs";

// Assigns suit to computer card
if (CSuitNu == 0)
```

```
  ComSuit = "Spades";
 if (CSuitNu == 1)
  ComSuit = "Diamonds";
 if (CSuitNu == 2)
  ComSuit = "Hearts";
 if (CSuitNu == 3)
  ComSuit = "Clubs";

 // Output statements to display card suit and value
 if (CompCar < 11)
  cout << "Computer's card is a " << CompCar << " of " << ComSuit << endl;
 else
  cout << "Computer's card is a " << CompCarName << " of " << ComSuit << endl;
 if (PlayCar < 11)
  cout << "Player's card is a " << PlayCar << " of " << PlaSuit << endl;
 else
  cout << "Player's card is a " << PlayCarName << " of " << PlaSuit << endl;


 // If statements to evaluate which player wins
 if (PlayCarName == CompCarName)

  cout << "WAR, bet again!" << endl;

 if (PlayCarName > CompCarName){
  cout << "--<< The Player wins! >>--" << endl;
  money += bet;
 }
 if (PlayCarName < CompCarName){
  cout << "--<< Computer wins! >>--" << endl;
  money -= bet;
 }
cout<< endl;
cout<<"You now have "<<money<<" dollars"<<endl;
cout<<"Keep Playing?"<<endl;
cin>>keePlay;
  } while ((keePlay == 'Y') || (keePlay == 'y'));



  if(keePlay == 'N' || keePlay == 'n') {
```

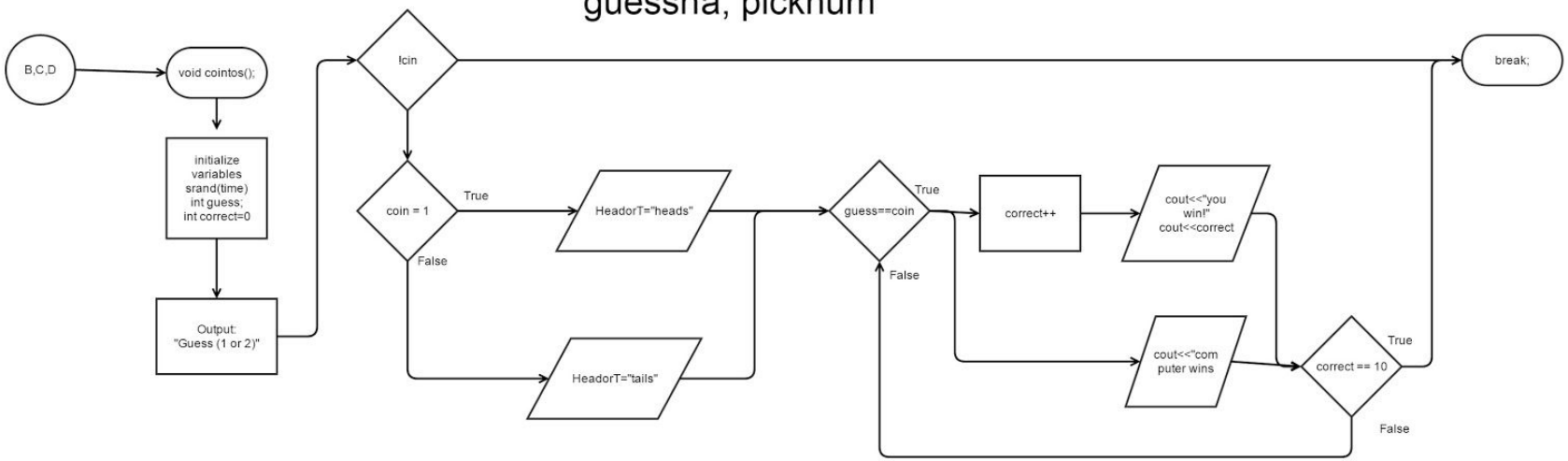
```
    }


}


//Solution to problem 6
void gauntlet(){


    cout<<"You have chosen to run the gauntlet.\n "<<endl<<endl;
    cout<<"Good Luck     Please press enter."<<endl;
    int inN;
    clock_t start;
     inN=getN();
        switch(inN){
        start = clock();
        case 9: cointos();
    int inN;
    clock_t start,finish;

        inN=getN();
        switch(inN){
        start = clock();
        case 9: cointos();
        case 10: guessha();
        case 11: picknum();
        case 12: rocscip();
        finish = clock();

     HighSco();
            default:;


}
        }
}


void CollDat(ofstream& fout)
{
           string name = "", date = "", score = "";
```

```
	do
	{
		cout << "Enter the first 4 letters of your name" << endl;
		cin >> name;
		cout << "Enter the score" << endl;
		cin >> score;
		cout << "Enter the date (mm/dd/yy) "<< endl;
		cin >> date;
		fout << name << " " << score << " " << date << endl;
	} while (name != "quit" || score != "quit" || date != "quit");
	  // type "quit" for name, score, or date to stop
}

void DispDat(ifstream& fin)
{
	string line = "";
	while (!fin.eof())
	{
		getline(fin, line, '\n');
		cout << line << endl;
	}

}
//Exit Comment
void def(int inN){
   cout<<"You typed "<<inN<<" to exit the program"<<endl;
}
```

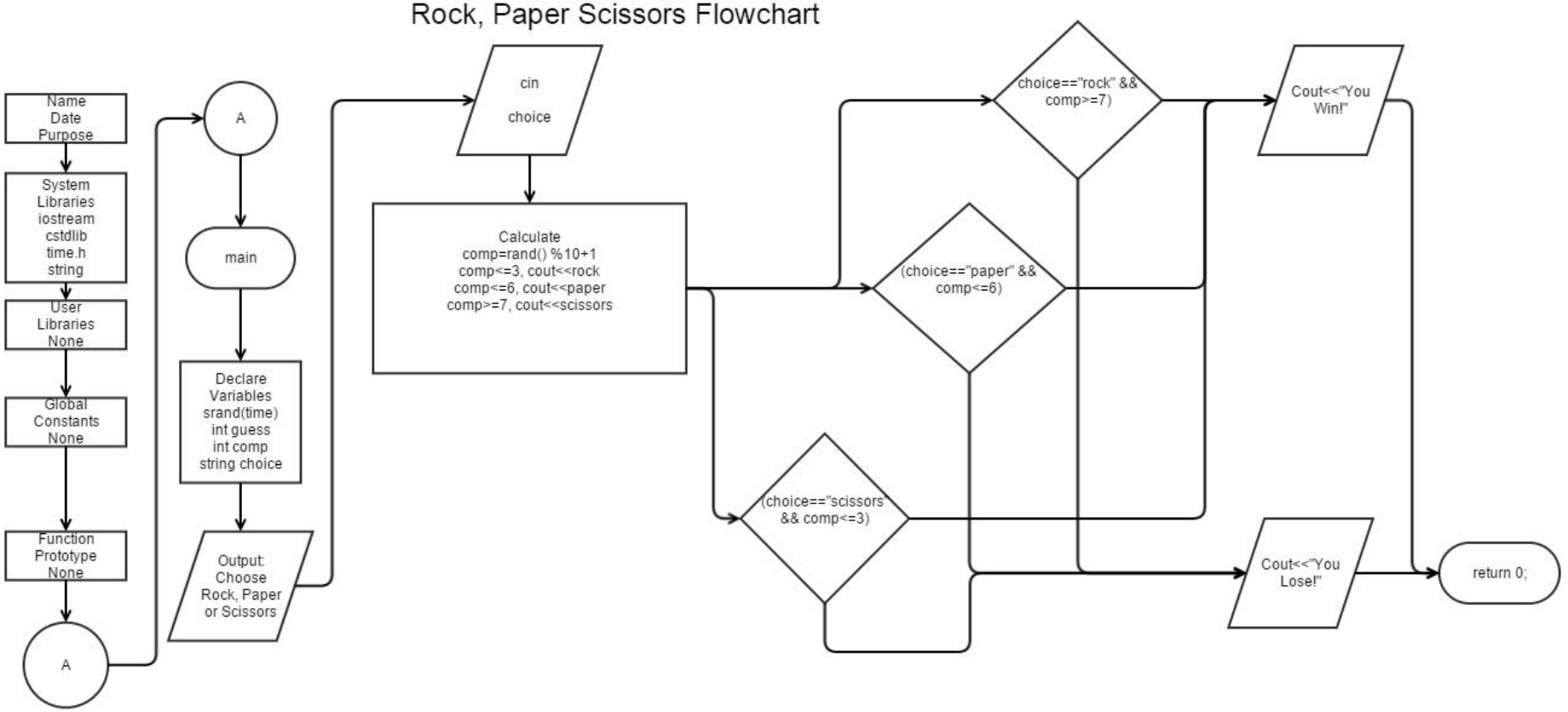
Project 2 Main
Menu Flowchart



Flowchart for cointos, guessha, picknum



Rock, Paper Scissors Flowchart



War Flowchart