Project 1

<Pig Dice Game>

CSC-5
Edana Gonzalez
07/18/17

Introduction

Title: Pig Dice Game

Pig is a dice game that is played with a 6 sided dice and is recommend at least two players to play making it more efficient, but one player is possibly . The objective of the game is to be the first one to score 100 points once you have reached 100 points you are the winner.

The Gameplay:

Player 1 rolls the dice repeatedly until the player rolls a 1 or the player chooses to hold. Rolling a 1 ends the player's turn and no points are earned. If the player chooses to hold, all points rolled during that play are then added together and becomes the score of player 1. Player 2 would then repeat the same steps above. Player 3 would then repeat the same steps above. This process would continue until a player reaches the score limit of 100 point. Meaning that that player is considered the winner of the game.

Summary

Project size: 264 lines
The number of variables:11
The number of methods:

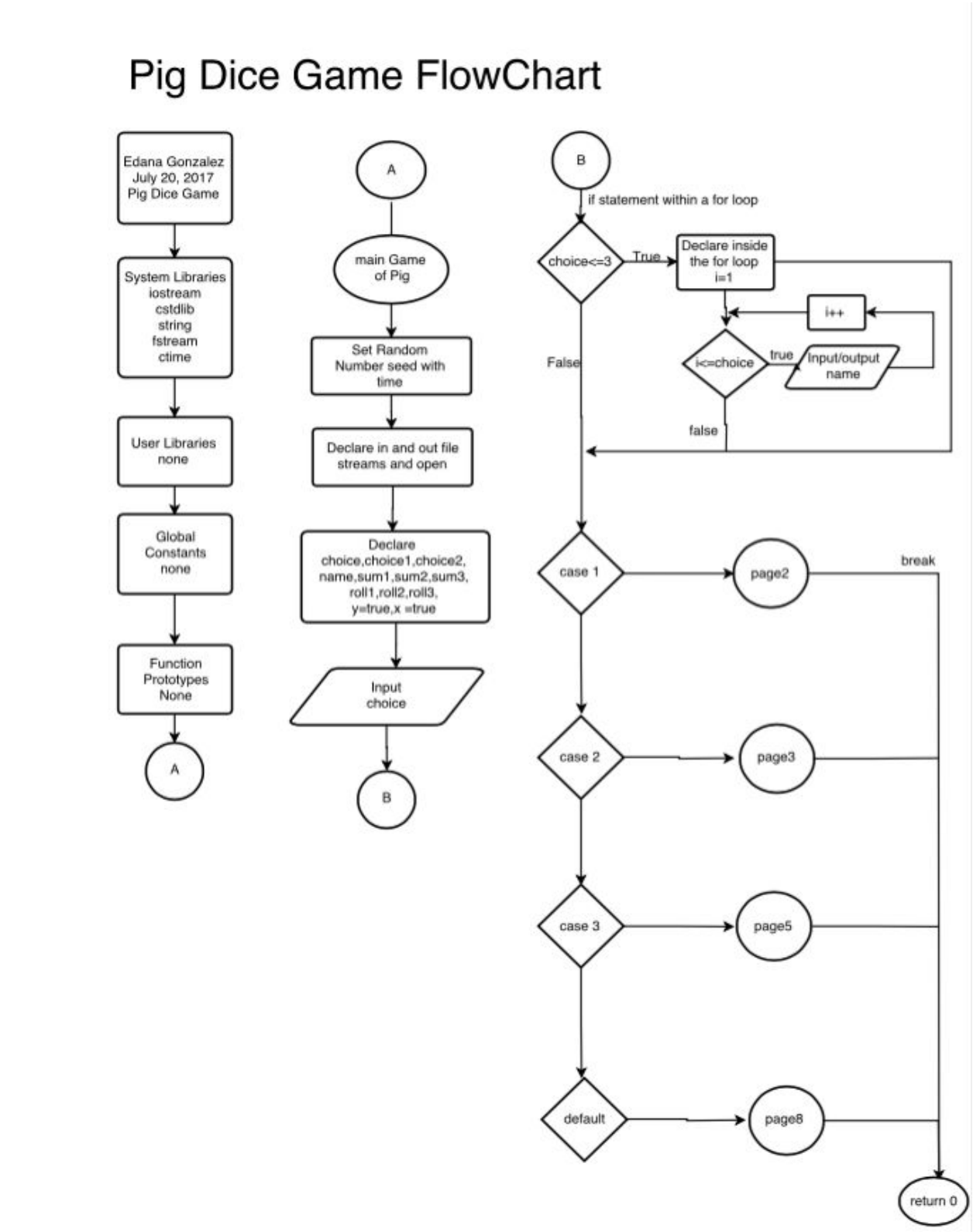
This project includes many of concept that we learned from Chapter 2 to Chapter 5 in our textbook Gaddis 8thEd. The interaction of the user and the program can be improved program to be more user friendly with an active GUI.

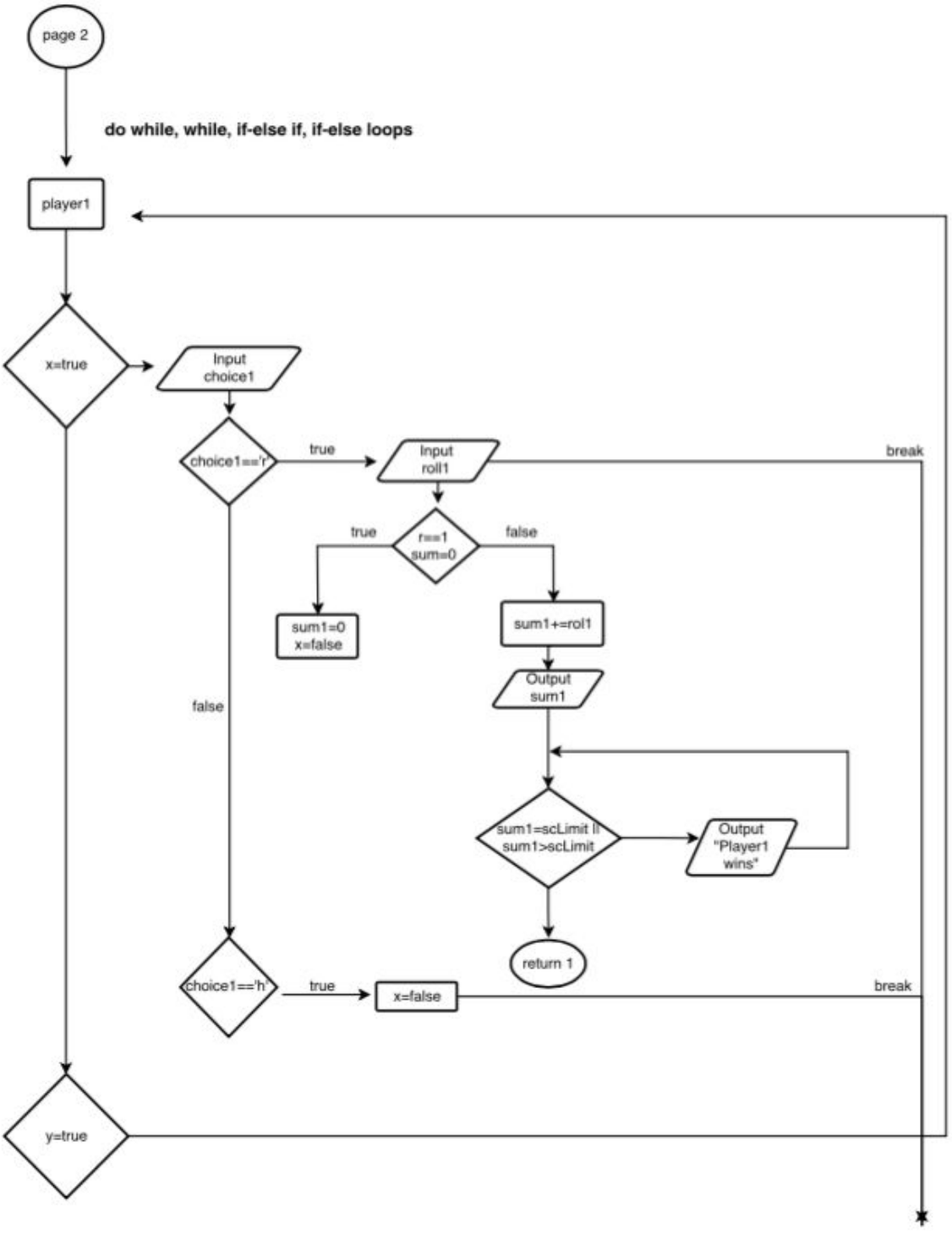
This program approximately took me about a week to complete which was the give time to complete the project. I came across many obstacles along the way, but that did not stop me from continuing. One of the main problems that I came along the way was making the project go back to the top of the code. I first got it to go from player 1 to player 2, but once player 2 turn finished the program would not go back to player 1 and would stop, but I did some research to see what was something helpful to make it work. Although my project is not the best at the moment I believe I can improve it for project 2.

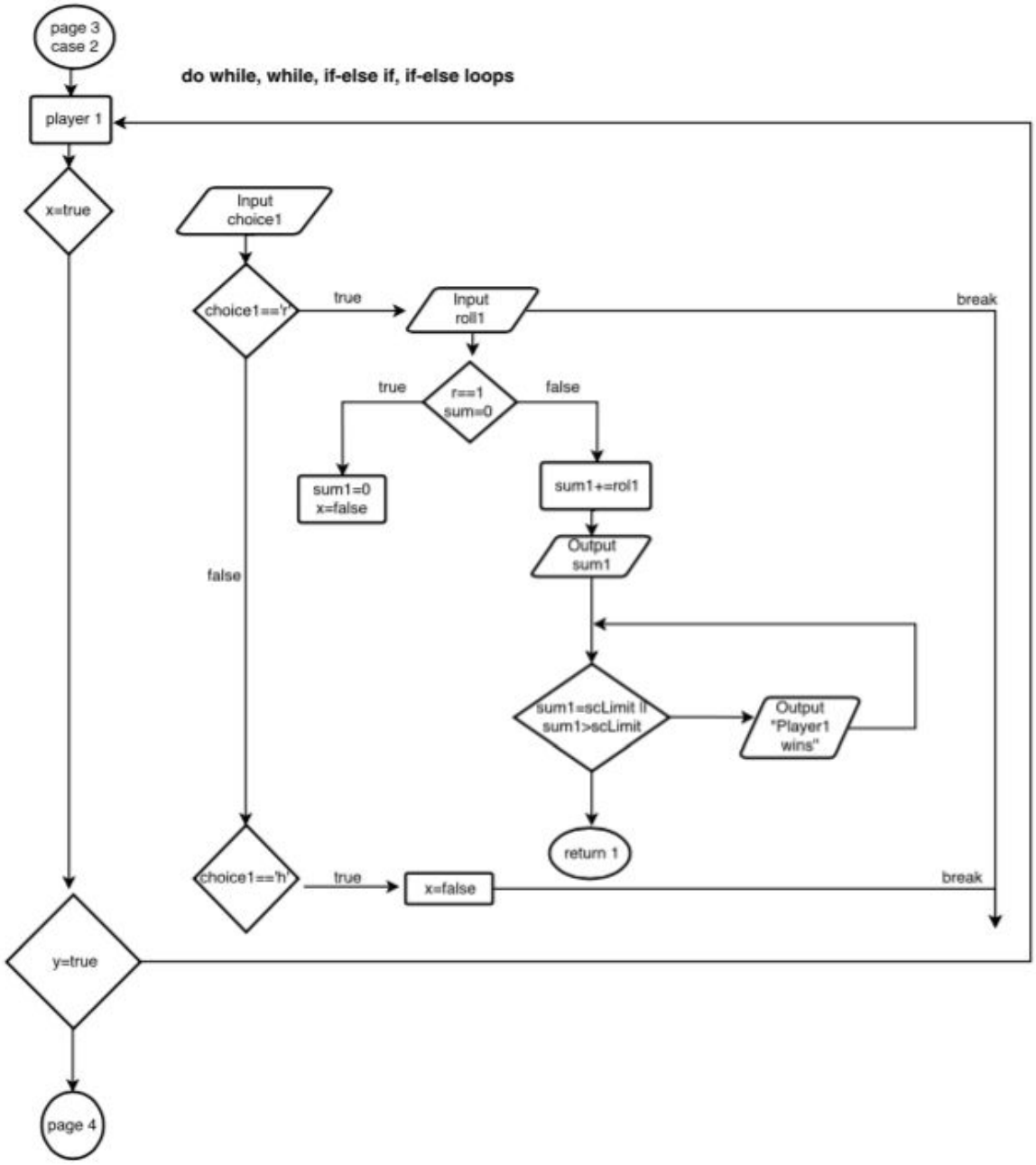
Description

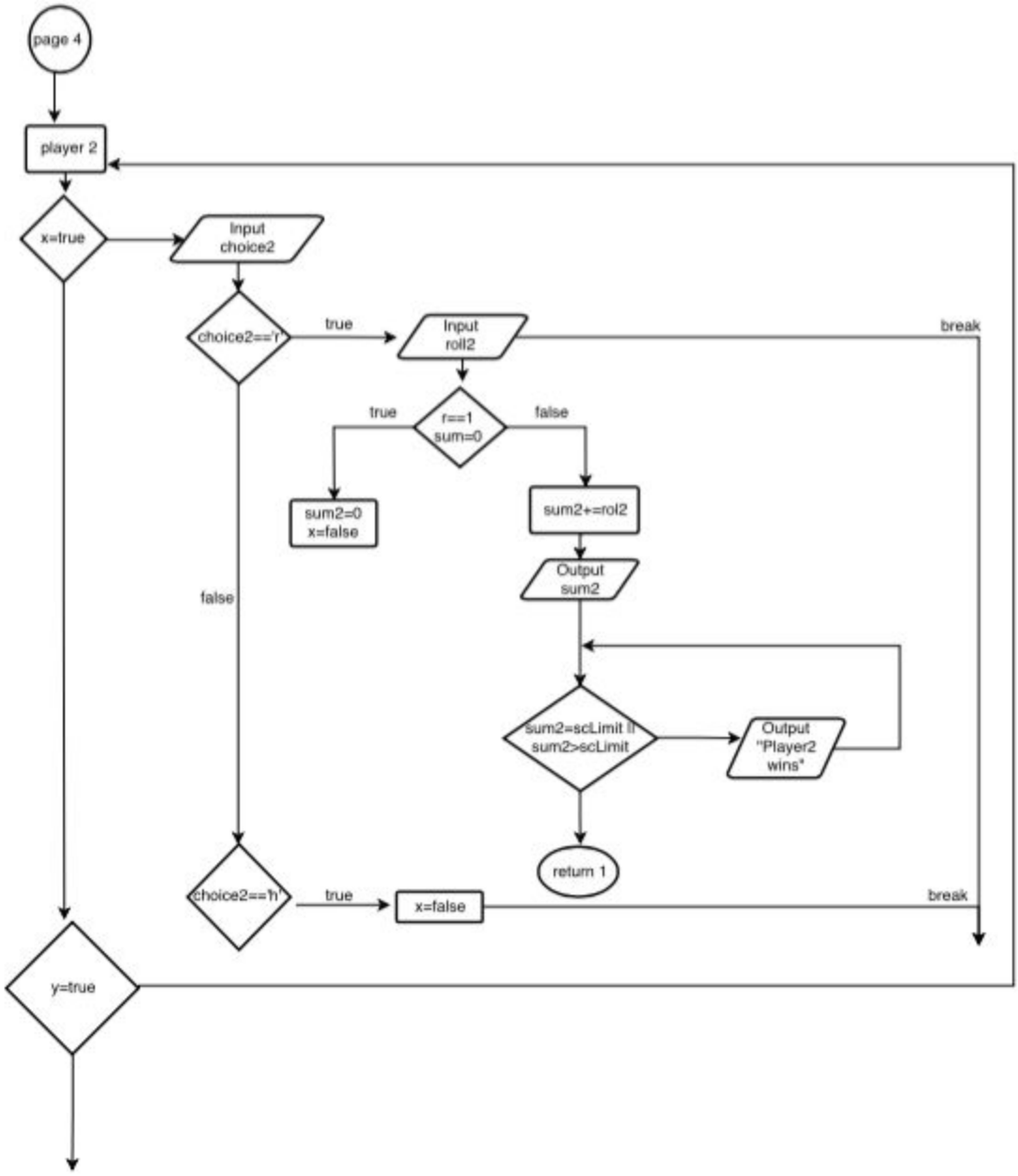
The program stats off by asking the user the amount of player and their names. Then it goes off to rolling the dice back and forth from the players involved until they finally reach the score limit of 100.

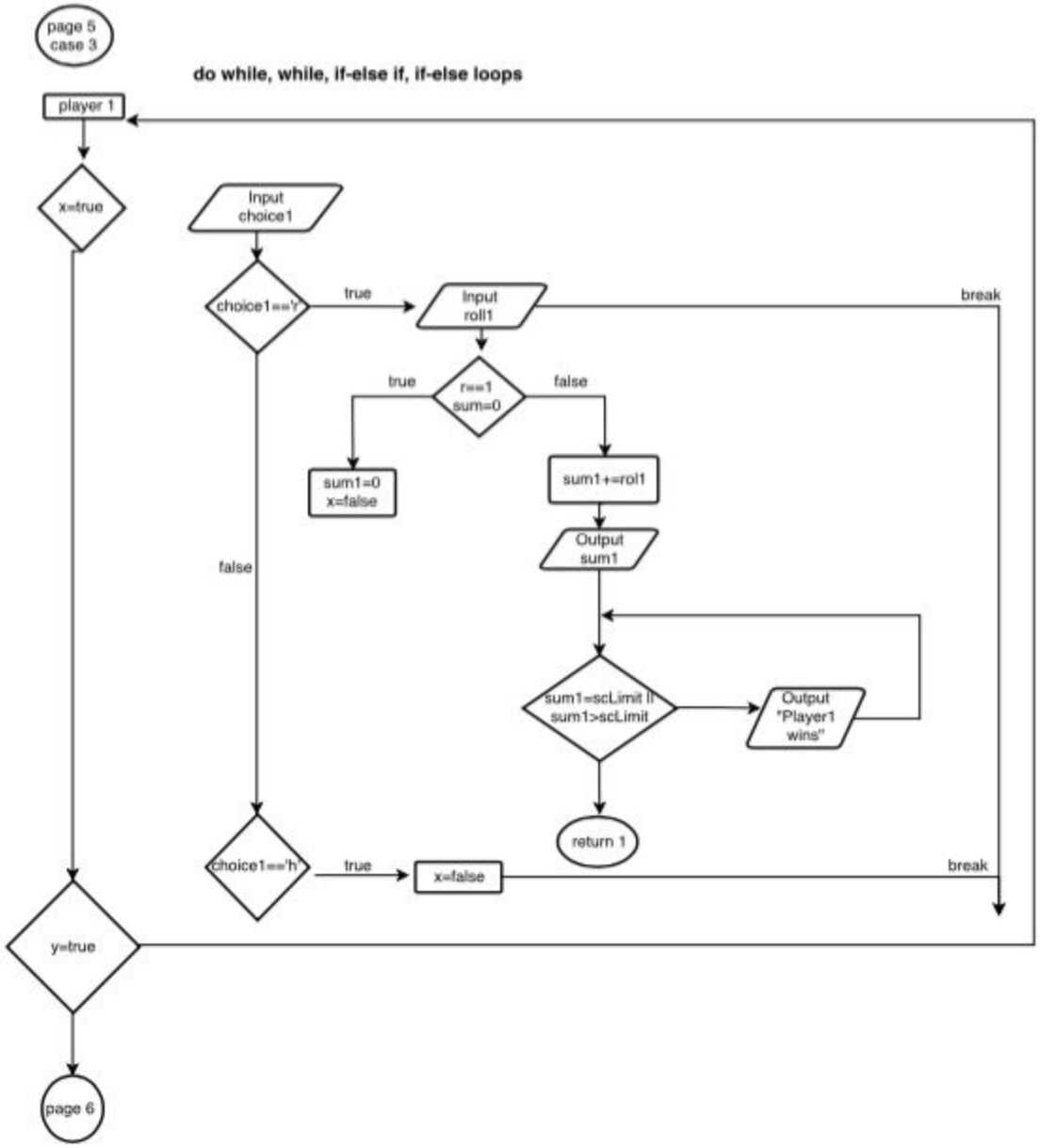
FlowChart

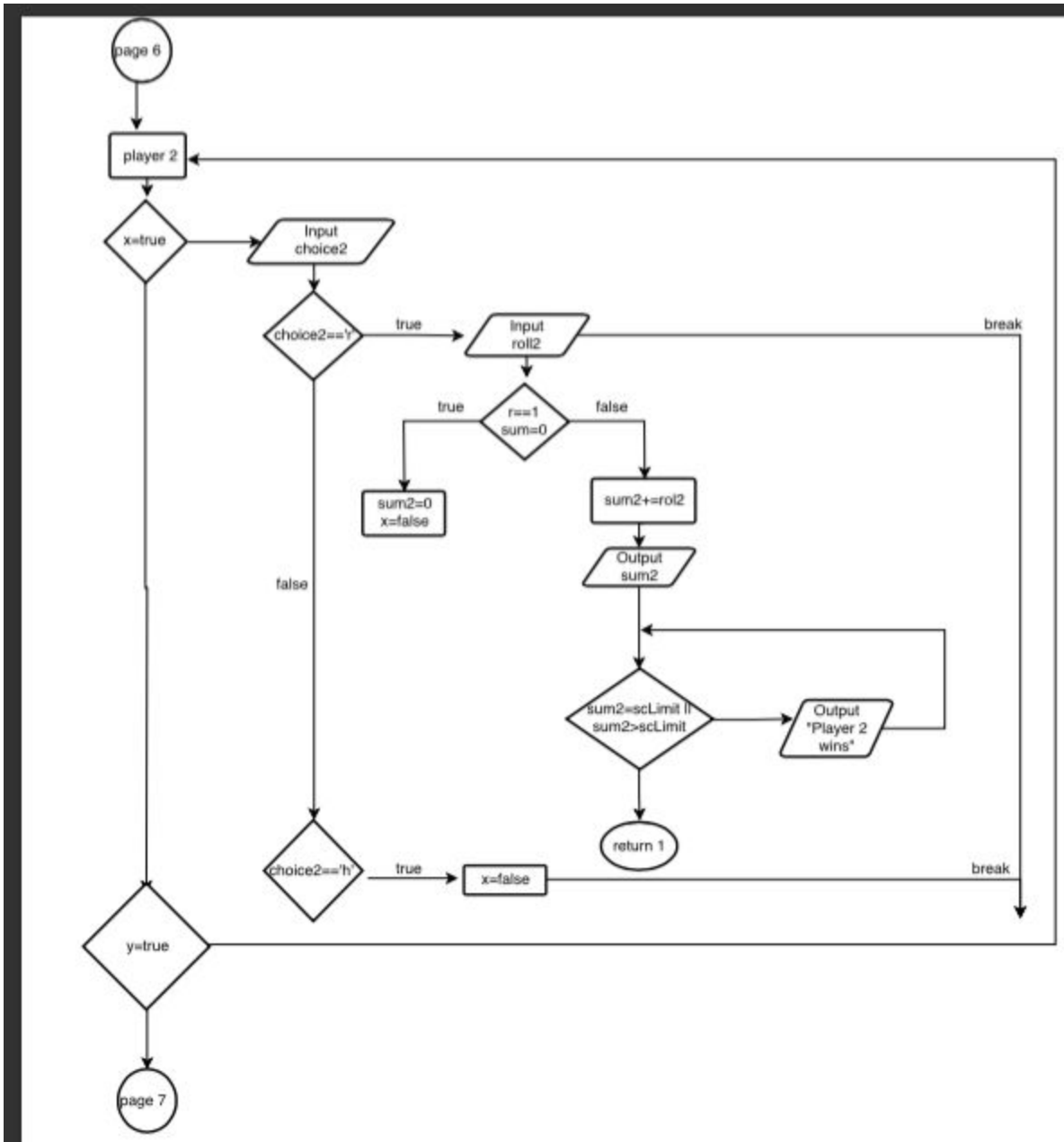

Pig Dice Game FlowChart
Edana Gonzalez
July 20, 2017
Pig Dice Game
System Libraries
iostream
cstdlib
string
fstream
ctime
User Libraries
none
Global
Constants
none
Function
Prototypes
None
A
A
main Game
of Pig
Set Random
Number seed with
time
Declare in and out file
streams and open
Declare
choice,choice1,choice2,
name,sum1,sum2,sum3,
roll1,roll2,roll3,
y=true,x =true
Input
choice
B
B
if statement within a for loop
choice<=3
True
Declare inside
the for loop
i=1
i++
i<=choice
true
Input/output
name
false
False
case 1
page2
break
case 2
page3
case 3
page5
default
page8
return 0

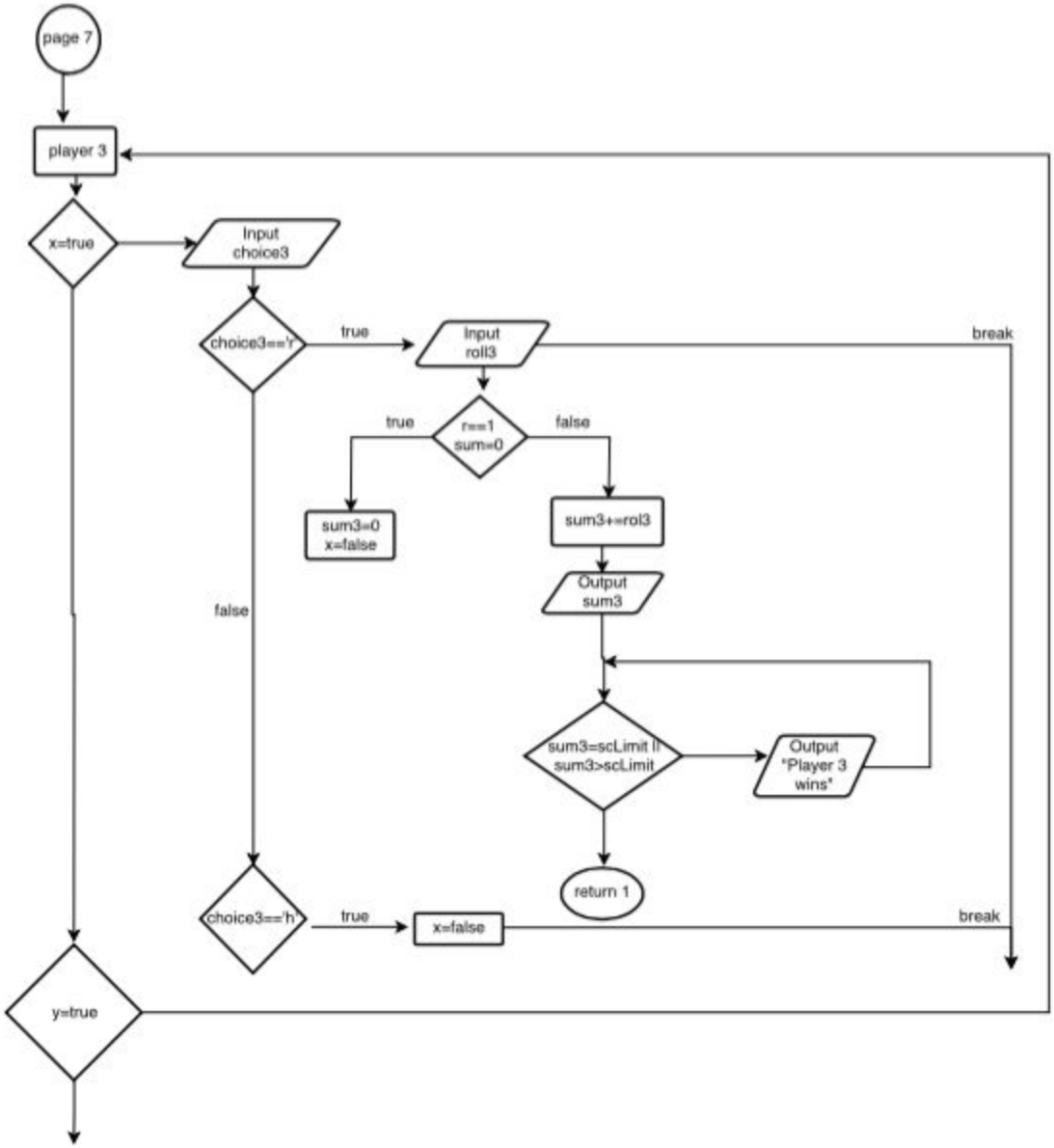

page 2
do while, while, if-else if, if-else loops
player1
x=true
Input
choice1
choice1=='r'
true
Input
roll1
break
true
r==1
sum=0
false
sum1=0
x=false
sum1+=roll1
Output
sum1
false
sum1=scLimit ||
sum1>scLimit
Output
"Player1
wins"
return 1
choice1=='h'
true
x=false
break
y=true

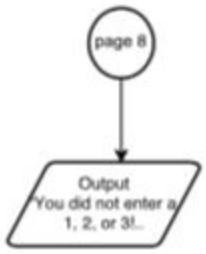

page 3
case 2
do while, while, if-else if, if-else loops
player 1
x=true
Input
choice1
choice1=='r'
true
Input
roll1
break
true
r==1
sum=0
false
sum1=0
x=false
sum1+=roll
Output
sum1
false
sum1=scLimit ||
sum1>scLimit
Output
"Player1
wins"
return 1
choice1=='h'
true
x=false
break
y=true
page 4


page 4
player 2
x=true
Input
choice2
choice2=='r'
true
Input
roll2
break
true
r==1
sum=0
false
sum2=0
x=false
sum2+=rol2
Output
sum2
false
sum2=scLimit ||
sum2>scLimit
Output
"Player2
wins"
return 1
choice2=='h'
true
x=false
break
y=true


page 5
case 3
do while, while, if-else if, if-else loops
player 1
x=true
Input
choice1
choice1=='r'
true
Input
roll1
break
true
r==1
sum=0
false
sum1=0
x=false
sum1+=roll1
Output
sum1
false
sum1=scLimit ||
sum1>scLimit
Output
"Player1
wins"
return 1
choice1=='h'
true
x=false
break
y=true
page 6


page 6
player 2
x=true
Input
choice2
choice2=='r'
true
Input
roll2
break
true
r==1
sum=0
false
sum2=0
x=false
sum2+=rol2
Output
sum2
false
sum2=scLimit ||
sum2>scLimit
Output
"Player 2
wins"
return 1
choice2=='h'
true
x=false
break
y=true
page 7


page 7
player 3
x=true
Input
choice3
choice3=='r'
true
Input
roll3
break
true
r==1
sum=0
false
sum3=0
x=false
sum3+=roll3
Output
sum3
false
sum3=scLimit ||
sum3>scLimit
Output
"Player 3
wins"
return 1
choice3=='h'
true
x=false
break
y=true


page 8
Output
"You did not enter a
1, 2, or 3!..

Pseudo Code

Add the libraries for Random time, time ,file I/O,string, and etc.

Create the Random Number Generator

Declare the input and output files

Declare variables for the players (choice ( ),sum ( ), roll( )),
the string for player's name, bool

Initialize the variables for input/output files

State the objective of the game

Ask for the number of players

If the number of players are 1, 2 , or 3 ask to input their names, but if user enters any other number it ask to run the program again

The output for the number of players 1, 2, or, 3

If user enters 1 then the player will roll the dice until they reach the score limit of 100

Rolling a 1 causes player's turn to end, but otherwise continues to roll until the call hold

If user enters 2 then the players will roll the dice until they reach the score limit of 100

Rolling a 1 causes player's turn to end, but otherwise continues to roll until the call hold

Outputs who wins

If user enters 3 then the players will roll the dice until they reach the score limit of 100

Rolling a 1 causes player's turn to end, but otherwise continues to roll until the call hold

Outputs who wins

Project Check of Sheet

Chapter	Section	Topic	Line number
2	2	cout	50,52,57,59,68,69,70,74,76,83,85, 102,103,104,108,111,117,119,130, 131,133,137,139,147,149,167,168, 169,173,176,182,184,196,197,199, 203,205,213,215,225,226,228,232, 234,242,244,258
	3	libraries	9-13
	4	variables/literals	29-40
	5	Identifiers	25,29-40,56,
	6	Integers	30,36,37,38
	7	Characters	31-33
	8	Strings	34,43-44
	9	Floats No Doubles	35
	10	Bools	39,40
	11	Sizeof*****	
	12	Variables 7 Characters or less	27-40
	13	Scope ***** No Global Variables	
	14	Arithmetic Operators	56,65,67,72,77-78,82,91,96,98-99, 101,106,110,112,116,125,132,135, 140-141,146,159,162-164,166,171, 175,177,180,190,198,201,207-208, 212,226,229,235-236,240,254
	15	Comments 20%+	24,28-38,42-47,49,55,62,63,64,97, 161,256
	16	Named Constants	29,84,118,148,183,214,242
	17	Programming Style*****Emulate	
3	1	cin	53,58,71,105,134,170,200,229

	2	Math Expression	77,82,110,116,142,146,175,181,208, 212,236,240
	3	Mixing data type*****	
	4	Overflow/Underflow*****	
	5	Type Casting	25
	6	Multiple assignment*****	
	7	Formatting output	
	8	Strings	34,43-44
	9	Math Library	
	10	Hand tracing*****	
4	1	Relational Operators	55,56,73,75,90,107,109,118,124, 136,138,148,154,172,174,183,189, 202,204,214,220,230,232,242,248
	2	if	55,84-87,118-121,148-151,183-186, 214-217,242-245
	4	If-else	75-88,109-122,138-152,174-187, 204-218,232-246,
	5	Nesting	73-93,107-127,136-156,172-192, 202-222,230-250
	6	If-else-if	73-93,107-127,136-156,172-192, 202-222,230-250
	7	Flags*****	
	8	Logical Operators	84
	11	Validating user input	53,58,71,105,134,170,200,229
	13	Conditional Operator	
	14	Switch	63-258
5	1	Increment/Decrement	56

	2	While	67-95,101-129,132-157,166-194, 198-223,226-251,
	5	Do-While	66-96,100-159,165-255,
	6	For Loop	56-60
	11	Files Input/Output both	43-46,260-261,
	12	No breaks in loops*****	
*****Not	Required	to show	

Reference

1. TextBook

Program

```
//System Libraries
#include <iostream>  //Input - Output Library
#include <cstdlib>   //Random Time Seed
#include <ctime>     //Time Library
#include <fstream>   //File I/O
#include <string>    //Strings
using namespace std; //Name-space under which system libraries exist
//User Libraries
//Global Constants
//Function Prototypes
//Execution begins here
int main(int argc, char** argv) {
    //Setting the Random Number Seed
    srand(static_cast<unsigned int>(time(0)));
    //Declare variables
    ifstream in;       //Input File
    ofstream out;      //Output File
    const int scLimit=100; //Score Limit
    int choice;        //Choice for how many players the user wants
```

```
char choice1;      //Choice Roll or Hold for player 1
char choice2;      //Choice Roll or Hold for player 2
char choice3;      //Choice Roll or Hold for player 3
string name;       //Name of Players
float sum1,sum2,sum3;//Sum of player 1, Sum of player 2, Sum of player 3
int roll1;         //Roll for player 1
int roll2;         //Roll for player 2
int roll3;         //Roll for player 3
bool y=true;
bool x =true;
//Initialize variables
string inName="GameInfo.dat";   //String Name
string outName="GameInfo.dat";  //String Name
in.open(inName.c_str());        //Open the Input file
out.open(outName.c_str());      //Open the Output file
while(in>>choice);              //Last value becomes the number of choice
//The objective of the Game and the number of players
cout<<"The Objective of the dice game Pig is to be the first to score 100 points"
   <<endl;
cout << "how many players want to play PIG 1, 2,or 3"<<endl;
cin>>choice;

if(choice<=3) {//The names of the players
   for (int i=1;i<=choice;i++){
      cout << "Please enter your name: " <<endl;
      cin>>name;
      cout<<name<< " is player " <<i<<endl;
   }
}
//Output for Number of players 1 , 2 , or 3
switch (choice) {//Switch Statement for number of players
   case 1://For One Player in Pig Dice Game
         roll1=rand()%6+1;
         do{
            while(x=true){
               cout<<" "<<endl;
               cout<<"PLayer 1"<<endl;
               cout<<"Enter r to roll or h to hold: "<<endl;
               cin>>choice1;
```

```
            roll1=rand()%6+1;
            if(choice1=='r'){
               cout<<"Your Roll: "<<roll1<<endl;
               if(roll1==1){
                  cout<<"0 points"<<endl;
                  sum1=0;
                  x=false;
                  break;
               }
               else{
                  sum1+=roll1;
                  cout<<"Sum: "<<sum1<<endl;
                  if(sum1=scLimit||sum1>scLimit){
                  cout<<"Player 1 Wins!!"<<endl;
                  return 0;
                  }
               }
            }
            else if(choice1=='h'){
               x=false;
               break;
            }

         }
         }while(y=true);
case 2://For Two Players in Pig Dice Game
      roll1=rand()%6+1;
      roll2=rand()%6+1;
      do{
         while(x=true){
            cout<<" "<<endl;
            cout<<"PLayer 1"<<endl;
            cout<<"Enter r to roll or h to hold: "<<endl;
            cin>>choice1;
            roll1=rand()%6+1;
            if(choice1=='r'){
               cout<<"Your Roll: "<<roll1<<endl;
               if(roll1==1){
                  sum1=0;
```

```
            cout<<"0 points"<<endl;
            x=false;
            break;
        }
        else{
            sum1+=roll1;
            cout<<"Sum: "<<sum1<<endl;
            if(sum1>=scLimit){
            cout<<"Player 1 Wins!!"<<endl;
            return 0;
            }
        }
    }
    else if(choice1=='h'){
        x=false;
        break;
    }

}
cout<<" "<<endl;
cout<<"PLayer 2"<<endl;
while(x=true){
    cout<<"Enter r to roll or h to hold: "<<endl;
    cin>>choice2;
    roll2=rand()%6+1;
    if(choice2=='r'){
        cout<<"Your Roll: "<<roll2<<endl;
        if(roll2==1){
            cout<<"0 points"<<endl;

            x=false;
            sum2=0;
            break;
        }
        else{
            sum2 += roll2;
            cout<<"Sum: "<<sum2<<endl;
            if(sum2>=scLimit){
                cout<<"Player 2 WIns"<<endl;
```

```
                    return 0;
                }
            }
        }
        else if(choice2=='h'){
            break;
        }
    }
    continue;
}while(y=true);

case 3://For Three Players in Pig Dice Game
    roll1=rand()%6+1;
    roll2=rand()%6+1;
    roll3=rand()%6+1;
    do{
        while(x=true){
            cout<<" "<<endl;
            cout<<"PLayer 1"<<endl;
            cout<<"Enter r to roll or h to hold: "<<endl;
            cin>>choice1;
            roll1=rand()%6+1;
            if(choice1=='r'){
                cout<<"Your Roll: "<<roll1<<endl;
                if(roll1==1){
                    sum1=0;
                    cout<<"0 points"<<endl;
                    x=false;
                    break;
                }
                else{
                    sum1+=roll1;
                    cout<<"Sum: "<<sum1<<endl;
                    if(sum1>=scLimit){
                    cout<<"Player 1 Wins!"<<endl;
                    return 0;
                    }
                }
            }
```

```
    else if(choice1=='h'){
        x=false;
        break;
    }

}

cout<<" "<<endl;
cout<<"PLayer 2"<<endl;
while(x=true){
    cout<<"Enter r to roll or h to hold: "<<endl;
    cin>>choice2;
    roll2=rand()%6+1;
    if(choice2=='r'){
        cout<<"Your Roll: "<<roll2<<endl;
        if(roll2==1){
            cout<<"0 points"<<endl;

            x=false;
            sum2=0;
            break;
        }
        else{
            sum2 += roll2;
            cout<<"Sum: "<<sum2<<endl;
            if(sum2>=scLimit){
                cout<<"Player 2 Wins!"<<endl;
                return 0;
            }
        }
    }
    else if(choice2=='h'){
        break;
    }
}
cout<<" "<<endl;
cout<<"PLayer 3"<<endl;
while(x=true){
    cout<<"Enter r to roll or h to hold: "<<endl;
```

```
                cin>>choice3;
                roll3=rand()%6+1;
                if(choice3=='r'){
                   cout<<"Your Roll: "<<roll3<<endl;
                   if(roll3==1){
                      cout<<"0 points"<<endl;

                      x=false;
                      sum3=0;
                      break;
                   }
                   else{
                      sum3 += roll3;
                      cout<<"Sum: "<<sum3<<endl;
                      if(sum3>=scLimit){
                         cout<<"Player 3 Wins!"<<endl;
                         return 0;
                      }
                   }
                }
                else if(choice3=='h'){
                   break;
                }
             }
             continue;

          }while(y=true);

       default://If the number 1,2, or 3 is not entered
          cout<<"You did not enter a 1, 2, or 3! Run the program again and select 1-3
players"<<endl;
       }
   //Exit stage right!
   in.close();
   out.close();

   return 0;
}
```