1. In your lab4, please exclude all source files from build, and add a new cpp file, named “quiz0313.cpp”. This file contains just a program shell in which you will write all the programming statements needed to complete the program. Here is a copy of the current contents of quiz0313.cpp.

// This program is a simple game (paper, scissors, stone).

// The player enter the choice he makes, the computer chooses by random numbers.

// Finally, use if/else if statements to judge who wins the game.

//Include needed library here.

using namespace std;

int main()

{

// Declare needed variables

int choice\_player, choice\_computer;

// "Seed" the random generator

unsigned seed = time(0);

//cout<<seed<<endl;

srand(seed);

// Explain the game and get the player's choice

cout << "This is a machine of playing paper, scissors, stone.\n"

<< "The player enter a number (between 1 and 3) to choose paper, scissors, or stone.\n"

<< "And the three numbers corresponds to the three gestures respectively.\n"

<< " 1. paper \n 2. scissors \n 3. stone \n\n";

// get player’s choice

cout << "Please make your decision (enter 1, 2, or 3): ";

// Print out your choice (\*\*\* You may use switch-case statement \*\*\*)

// Computer's choice, Randomly generate an integer between 1 and 3.

// Print out computer’s choice (\*\*\* You may use switch-case statement \*\*\*)

// Use branching logic to decide who wins, player or computer

return 0;

}

1. Design and implement the quiz0313.cpp program so that it correctly meets the program specifications given below in the following table. You may find it helpful to use pseudo code to work out the program logic before you begin coding the program in C++.

**[Specifications]**

This program is a simple game (paper, scissors, stone). The player can enter a number between 1 and 3 to choose what gesture he wants, and the computer chooses by random numbers. You may need the function “time(0)” in <ctime> library to get the current computer time as your seed, to generate the random number for the computer’s choice. For convenience of judging the result, please print what choice the computer obtains. Finally, use if-else statements to judge who wins the game. (You win / You lose / Tie)

**[Sample Run]**

This is a machine of playing paper, scissors, stone.

The player enter a number (between 1 and 3) to choose paper, scissors, or stone.

And the three numbers corresponds to the three gestures respectively:

1. paper

2. scissors

3. stone

Please make your decision (enter 1, 2, or 3): 3

Your choice: stone

Computer's choice: scissors

You win !!!

1. Once you have your program working, test it with several data, and ask TAs to check your results.
2. Copy the codes and your test output to your answer file. Upload your “quiz0313.cpp” and the answer file to the “online\_quiz\_lab4” section on iLMS.

**[Reference Code] (ONLY for TAs)**

// This program is a simple game (paper, scissors, stone).

// The player enter the choice he makes, the computer chooses by random numbers.

// Finally, use if/else if statements to judge who wins the game.

//Include needed library here.

#include <iostream>

#include <string> // Needed to use strings

#include <cstdlib> // Needed for random numbers

#include <ctime>

using namespace std;

int main()

{

// Declare needed variables

int again = 0;

int choice\_player, choice\_computer;

// "Seed" the random generator

unsigned seed = time(0);

//cout<<seed<<endl;

srand(seed);

// Explain the game and get the player's choice

cout << "This is a machine of playing paper, scissors, stone.\n"

<< "The player enter a number (between 1 and 3) to choose paper, scissors, or stone.\n"

<< "And the three numbers corresponds to the three gestures respectively.\n"

<< " 1. paper \n 2. scissors \n 3. stone \n\n";

do{

cout << "Please make your decision (enter 1, 2, or 3): ";

cin >> choice\_player;

// Print out your choice

switch(choice\_player){

case (1): cout << "Your choice: paper" << endl;break;

case (2): cout << "Your choice: scissors"<< endl;break;

case (3): cout << "Your choice: stone" << endl;break;

default: cout <<"Not a valid number.Please enter 1, 2,or 3.\n";break;

}

// Computer's choice, Randomly generate an integer between 1 and 3.

choice\_computer = 1 + rand() % 3;

switch(choice\_computer){

case (1): cout << "Computer's choice: paper" << endl;break;

case (2): cout << "Computer's choice: scissors"<< endl;break;

case (3): cout << "Computer's choice: stone" << endl;break;

default: cout << "Computer has generated a invalid number.\n";break;

}

// Use branching logic to decide who wins, player or computer

if ((choice\_player-1==choice\_computer) || ((choice\_player==1)&&(choice\_computer==3)))

cout << "\nYou win !!!\n";

else if ((choice\_player==choice\_computer-1) || ((choice\_player==3)&&(choice\_computer==1)))

cout << "\nYou lose !!!\n";

else if (choice\_player == choice\_computer)

cout << "\nTie\n";

//ask if try again

do{

cout<<"Do you want to try again, Yes(1) or No(0)?";

cin >> again;

}while((again!=0)&&(again!=1));

}while(again==1);

return 0;

}