Homework Assignment 7

Due: 11:59PM, Friday, March 10th, 2017

Write a Rock-Paper-Scissor game. The human player plays the game against the computer (AI player).

Requirements:

1. Your program should provide a simple user interface to tell the user when to choose a shape.
2. The user will use the keyboard to choose a shape.
3. The user will use the key ‘R’ (or ‘r’) to choose rock, the key ‘P’ (or ‘p’) to choose paper, and the key ‘S’ (or ‘s’) to choose scissor.
4. Your program should work no matter the user types an uppercase letter (‘R’, ‘P’, or ‘S’) or a lowercase letter (‘r’, ‘p’, or ‘s’).
5. If the user types any key that is not one of the above keys, your program should show a message and terminate.
6. Your program should let the computer randomly choose a shape.
7. Your program should display what shape the human player chose as well as what shape the AI player chose.
8. Your program must be able to judge who wins (or if it’s a draw) and display the result.

Hints:

(1) To make sure the computer generates a random number, you need to include these header files:

#include <cstdlib> ← for rand() and srand()

#include <ctime> ← for time()

You also need to add this statement before you begin to use rand() to generate the random number:

srand( static\_cast<unsigned int> ( time(0) ) );

(2) Use % operator to constrain the range of the random numbers.

For example, rand() % 3.

The output of your program should be like these:

1. For example, if the human player chooses rock, and the AI player chooses scissor:

Rock-Paper-Scissor Game

Please choose your shape:

R for rock; P for paper; S for scissor.

R

You chose rock.

Computer chose scissor.

You won.

1. For example, if the human player chooses paper, and the AI player also chooses paper:

Rock-Paper-Scissor Game

Please choose your shape:

R for rock; P for paper; S for scissor.

P

You chose paper.

Computer chose paper.

Draw.

1. For example, if the human player chooses scissor, and the AI player chooses rock:

Rock-Paper-Scissor Game

Please choose your shape:

R for rock; P for paper; S for scissor.

S

You chose scissor.

Computer chose rock.

You lose.

1. For example, if the human player typed an invalid key:

Rock-Paper-Scissor Game

Please choose your shape:

R for rock; P for paper; S for scissor.

1

Invalid input. Game over.