OOP WEEK 9 WORKSHOP QUESTION
TOPIC IN CS

You are going to build a C++ program which runs a single game of Rock, Paper, Scissors. Two players (a human player and a computer player) will compete and individually choose Rock, Paper, or Scissors. They will then simultaneously declare their choices and the winner is determined by comparing the players' choices. Rock beats Scissors. Scissors beats Paper. Paper beats Rock.

Your task is to produce a set of classes that will allow a human player to type instructions from the keyboard and interact with a computer player.

Your submission should contain:

main.cpp
Player.cpp
Person.cpp
Computer.cpp

as well as proper **header files**.

Part 1: Abstract Classes

Define and implement an abstract class named **Player** that has the following behaviours:

```
void move();
char getMove();                 //return r (rock), p (paper), s (scissors)
bool win(Player * opponent);    //compares players' moves to see who wins
```

Declare the move function as pure virtual and set proper access modifiers for the attributes and methods. If no one wins, the game should output "draw! go again", and the game continues until a winner is determined.

Part 2: Inheritance

2-1

Define and implement a class named **Computer** that inherits from Player. To make things simple, we assume that the computer player **only** plays Rock every game.

The Computer class has the following behaviour:

```
void move() ;       //return 'r' (rock)
```

2-2

Define and implement a class named **Person** that inherits from Player. The Person can choose Rock, Paper, or Scissors based on the user's input.

The Player class has the following behaviour:

```
void move() ;       //allow user to type in a single character to represent their move
                    //eg r = rock, p = paper, s = scissors
                    //if a move is impossible, "Move unavailable" is outputted and the user
                    inputs again
```

Write a main function that uses Computer and Person to play Rock, Paper, Scissors. The player should be asked to input a move which is then compared against the computer's move to determine who wins.

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Input:	**output:**
//expected inputs	
r	draw! go again
p	you win
s	you lose
//expected inputs (variant)	
R	draw! go again
P	you win
S	you lose
//unexpected inputs (string) - it should **only** use the first element of the string	
rppssss	draw! go again
aaaap	Move unavailable
//unexpected inputs (wrong char)	
b	Move unavailable
fda	Move unavailable
//unexpected inputs (int)	
1	Move unavailable
84932	Move unavailable
//unexpected inputs (odd char)	
*	Move unavailable
@	Move unavailable
%%%^	Move unavailable