

Department of Computer Science Northern Kentucky University NKU Summer Programming Workshop 2015

Project 8: Rock, Paper, Scissors

It's time for that most boring game ever: Rock, Paper, Scissors.

This serves as a good introduction to methods that can lead us to more complex games later. On the website, you will find a skeleton for this program: RockPaperScissors.java. Take a look at it and you will see some of the code in place and comments explaining what you need to fill in.

Specifically, you need to do the following:

- 1. Declare the various variables, you will need a Random generator, a char to store the user's response about playing again (Y or N), the user's pick (0-2) and the computer's pick (0-2). Use the names as shown in the program code (pick1, pick2, answer, g) for these variables.
- 2. Write the methods
 - a. instructions will consist of one println statements to output the directions of the game.
 - b. getUserPick will have two local variables, a Scanner and the user's choice (an int). Ask the user to input 0-2 describing what each is (0 = rock, 1 = paper, 2 = scissors) and data verify that the user entered a 0-2. Return the number.
 - c. getComputerPick is already written for you.
 - d. determineWinner this is the most complicated method, you need to take the two picks (0-2, 0-2) and figure out who won. For instance, if the user picked 0 (rock) and the computer picked 2 (scissors) then the user wins. The method returns a number indicating the winner (0 for tie, 1 for user, 2 for computer).
 - e. askAgain will use an showInputDialog to ask they user if they want to play again and return the 0th character uppercased. You might want to data verify it.

Enhancements:

- 1. Alter getUserPick so that the user inputs one of 'R', 'P' or 'S' and you use if statements to convert the user input into the proper int value to return.
- 2. Add four new int variables numGames, numWins, numTies, and numLosses. In main after winner=determineWinner(...), add instructions to update numGames and the proper value of numWins/numTies/numLosses to keep track of how many games the winner has won/tied/lost. After the do-while loop, output a summary of this information.
- 3. Change the computer's pick as follows. Store in an array the user's choice for the first five turns. The computer's first five attempts are random. Afterward, count the number of each user selection. If there is one that occurs more often, have the computer pick the option that will defeat that selection (for instance, if rock is picked most often, the computer will pick paper).

