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| **Date: 11/4** | **SI Facilitator: Christopher Simon** | **SI Course: CSC 15** |

**Objective(s):**What are the most important concepts that the students need to work on today?

* Understanding and using the Random class.
* Knowing how to implement while loops and converting them to for loops.
* Applying the concepts learned in classes practically through a rock, paper, scissors game.

**Opening technique(s):**

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| **Time** | **Content to be Covered** | **Description of Activity/Process** |
| 3:00 | Started out class covering the basics of while loops | While loops are an important concept in CSC 15. When the students gave me the impression that they had not been “formally” taught while loops yet in class, even though they were to have gone over this concept by now, I made sure to teach this concept myself. |
| 3:20 | Using while loops in practice. And comparing them to for loops. | Wanting to get the students to understand the differences and similarities between for loops and while loops, I decided to guide the students through an example that would only work properly strictly with the use of a while loop, as opposed to a for loop. |
| 3:40 | Demonstrating the similarities of while loops to our existing understanding of for loops | After completing the above example successfully with the students, I showed how a conventional for loop could possibly be substituted for a while loop with minimal effort. After highlighting the certain circumstances where this practice is in fact possible, I introduced the other possibilities which require either one or the other. |
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*\*Possible activities to use: Informal Quiz, Reciprocal Questioning, Paired Problem Solving, Note Review, Text Review, Board work Model, Sequencing, Incomplete Outline, Jigsaws, Preview, Review, Matrix, Chart Timeline, One-Minute Writing, Concept Map*

**Why did you implement these activities and process?**

* To help students to understand the purpose of these new classes and their importance and usefulness
* To make the learning process fun and interactive in creating something practical. Practicality is quite valuable to engineering students.

**Reflections on effectiveness of activity/process, challenges, insights to improve for the future and assess how you are developing as a SI leader:**

* Gauge the students’ understanding of the lesson being taught in class. Ask if necessary. Communication is key here.
* The code didn’t end up compiling correctly in class. To compensate, I sent out an email with the working code, explaining why it wasn’t working in class.

**import** **java.util.Random**;

**import** **java.util.Scanner**;

**public** **class** **rpc** {

**public** **static** void main(String[] args) {

Scanner user = **new** Scanner(System.in);

*// Ask for the input from the user*

System.out.print("Pick r p or s: ");

String u = inputUser(user);

System.out.println("User Picks: " + u);

*// Ask the input from the computer*

String c = inputComputer();

System.out.println("Computer picks: " + c);

*// Process input. If true, user wins. if false computer wins*

System.out.println(choice(u, c));

}

**public** **static** String inputUser(Scanner user) {

*// Get input from user*

String x = user.nextLine();

*// We need to remove the extra enter key from the input.*

*// We can do this by getting the substring of x only containing*

*// the first letter of the string, 0.*

*// Here's a visual of the issue:*

*// Say the user enters p:*

*// x = "p\n"; <--- The \n is the enter key*

*// Character: "p\n"*

*// Index Value: 0 1*

*// x = x.substring(0) will give us the character at 0, which is just "p"*

*// so, x is now equal to "p" without the enter key (\n)*

x = x.substring(0);

**return** x;

}

**public** **static** String inputComputer() {

*// Get computer input*

Random rand = **new** Random();

*// Generate a random number from 0 - 2. Excluding 3.*

*// rand.nextInt(2) will give us a number from 0 - 1.*

int number = rand.nextInt(3);

*// If else chain*

*/\**

*if(number == 0) {*

*return "r";*

*} else if(number == 1) {*

*return "p";*

*} else if(number == 2) {*

*return "s";*

*} else {*

*// Fall back. Just in case the program messes up,*

*// indicate that an error occurred*

*return "None";*

*}*

*\*/*

*//case switch*

**switch**(number) {

**case** 0:

**return** "r";

*//break;*

**case** 1:

**return** "p";

*//break;*

**case** 2:

**return** "s";

*//break;*

*// For any other case, if number is not 0, 1 or 2:*

**default**:

**return** "Error";

}

}

**public** **static** String choice(String u, String c) {

*// See who wins*

**if**(u.equals(c)) {

*// Tie*

**return** "Tie";

} **else** **if**(u.equals("r") && c.equals("s")) {

*// User: Rock beats Scissors*

**return** "User Wins";

} **else** **if**(u.equals("s") && c.equals("p")) {

*// User: Scissors beats Paper*

**return** "User Wins";

} **else** **if**(u.equals("p") && c.equals("r")) {

*// User: Paper beats rock*

**return** "User Wins";

} **else** **if**(c.equals("r") && u.equals("s")) {

*// Computer: Rock beats Paper*

**return** "Computer Wins";

} **else** **if**(c.equals("s") && u.equals("p")) {

*// Computer: Scissors beats Paper*

**return** "Computer Wins";

} **else** **if**(c.equals("p") && u.equals("r")) {

*// Computer: Paper beats Rock*

**return** "Computer Wins";

}

*// Fall back. If an error occurs, indicate so*

**return** "Error! Please pick r, p or c!";

}

}