Hudson Whittaker

hjwhittaker

PROG 2 – CSIS 052-02

Simon Lab

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**Problem Summary**

Design a game that uses a robot to display a sequence like the original Simon game. Take the user’s input of the touch sensors and compare them to the sequence. If they are the same continue to next level with more in the sequence. If they differ end the game.

**Requirements**

Use nxt display

½ second wait in between redrawing next button

Use robots four touch sensors

Use correct data structure

Timing of use input is *not* required

**System design**

***Lab3 Class***

Purpose: run queue methods; ask and get user input; keep running until compare returns false then print loss message

Field Variables: String userInput;

Methods:

public static void main(String[] args)

CreateQ()

randQ()

print toString()

userInput = scnr.nextLine();

queueString(userInput)

while(compare())

randQ()

print toString()

userInput = scnr.nextLine();

queueString(userInput)

print you lose and end

***Queue Class***

Purpose: enqueue rand int; create user’s queue; comapare queues

Field Variables: ArrayQueue1: randQ1, userQ, randQ2; int holder = 2; int currInt;

Constructors:

public CreateQ()

instantiates all three queues with max of 100

Observers:

public String toString()

if holder is even return randQ1 string else return randQ2 string

public boolean compare()

if(holder%2==0)

while(!randQ1.isEmpty())

currInt = randQ1.dequeue;

if(currInt==userQ.dequeue)

enqueue currInt to randQ2

else return false;

else

while(!randQ2.isEmpty())

currInt = randQ2.dequeue;

if(currInt==userQ.dequeue)

enqueue currInt to randQ1

else return false;

holder++;

return true;

**Testing Report**

* Simple test cases with one input up to really complicated ones with multiple
* Same color twice in a row
* Exceptions for too few or too many user inputs
  + *Found out can’t actually happen*

**Testing Instructions**

* Plug robot into computer
* Open Lab3Robot.java
* Make sure using lejos in Compiler Workspace
* Make sure Robot is turned on
* Run Lab3Robot.java
* Follow onscreen instructions

**Management Report**

* Expected 2 hours to code and debug Lab3Robot
  + Took 1.5 hours
* Expected 3 hours to code and debug QueueRobot
  + Took 1.5 hours

**Lessons Learned**

* Robot will continually take button inputs resulting in an exhaustive amount of inputs per button press unless getButton() is edited.
* jGrasp likes when you make everything a String instead of an Integer

**Future Improvements**

* Using an int holder to switch between queues when it is even or odd works but I should have just made it a boolean and switched it between true and false.

**Appendices**