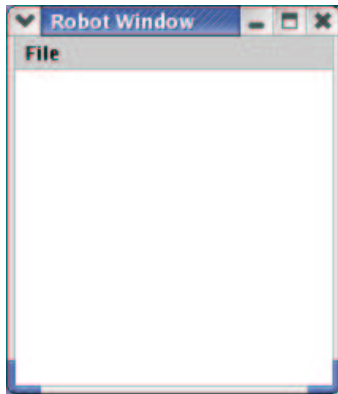


## Quiz 3, CSCI 150, Fall 2003

Name: \_\_\_\_\_

1. [5 pts] Explain in detail what HYMN does during the fetch phase of the fetch-execute cycle. (Your explanation should describe how the computer accesses values in registers and memory.)

2. [10 pts] Suppose the user runs the Java program at right, typing 20 when told to choose a number. What would the computer draw?

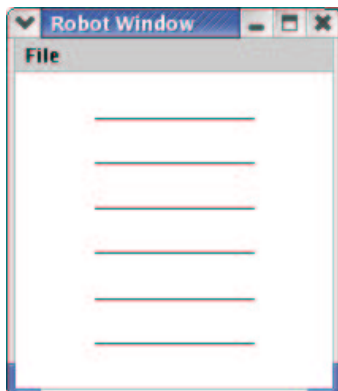


```
import csbsju.cs150.*;

public class Mystery {
    public static void main(String[] args) {
        RobotWindow win = new RobotWindow();
        win.show();

        double n = win.requestDouble();
        Robot robbie = new Robot(win, 100, 100);
        robbie.move(n);
        robbie.turn(n);
        robbie.move(n);
        robbie.turn(n);
        robbie.move(n);
        robbie.turn(n);
        robbie.move(n);
        robbie.turn(n);
        robbie.move(n);
        robbie.switchOff();
    }
}
```

3. [15 pts] Write a program that reads an integer  $n$  from the user and draws  $n$  horizontal lines evenly spaced down the window, with each line extending from  $x = 50$  to  $x = 150$ . For example, were the user to type 6, the program would display the following.



```
import csbsju.cs150.*;

public class DrawLines {
    public static void main(String[] args) {
        RobotWindow win = new RobotWindow();
        win.show();
    }
}
```

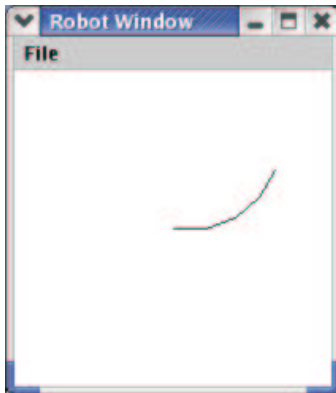
## Solutions, Quiz 3, CSCI 150, Fall 2003

### Statistics

mean	22.417 (538.000/24)
stddev	4.387
median	23.000
midrange	19.500-25.500
#1.	2.71 / 5
#2.	9.50 / 10
#3.	10.21 / 14

1. The CPU looks in the PC for a memory address, loads from memory at that address, and stores the data found there into the IR.

2.



3.

```
import csbsju.cs150.*;

public class DrawLines {
    public static void main(String[] args) {
        RobotWindow win = new RobotWindow();
        win.show();

        int num = win.requestInt();
        double gap = 200.0 / (num + 1);
        int y = gap;
        while(y < 200.0) {
            Robot line = new Robot(win, 50, y);
            line.move(100.0);
            line.switchOff();
            y += gap;
        }
    }
}
```