

# Craps

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Allows you to play a game of craps via a GUI.

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- **Course:** Period 1 AP CS, Dr. Miles
- **Files:**
  - CrapsGame.java
  - Die.java
  - DieTest.java
  - RollingDie.java
- **Due:** 10/20/2015

# CrapsGame.java

The source code **added** for CrapsGame.java .

```
/**
 * Calculates the result of the next dice roll in the Craps game.
 * The parameter total is the sum of dots on two dice.
 * point is set to the saved total, if the game continues,
 * or 0, if the game has ended.
 * Returns 1 if player won, -1 if player lost,
 * 0 if player continues rolling.
 */
public int processRoll(int total) {
    int result;
    if (this.point == 0) {
        if (total == 7 || total == 11) {
            result = 1;
        }
        else {
            if (total == 2 || total == 3 || total == 12) {
                result = -1;
            }
            else {
                result = 0;
                this.point = total;
            }
        }
    }
    else if (total == this.point) {
        result = 1;
        this.point = 0;
    }
    else if (total == 7) {
        result = -1;
        this.point = 0;
    }
    else {
        result = 0;
    }

    return result;
}
```

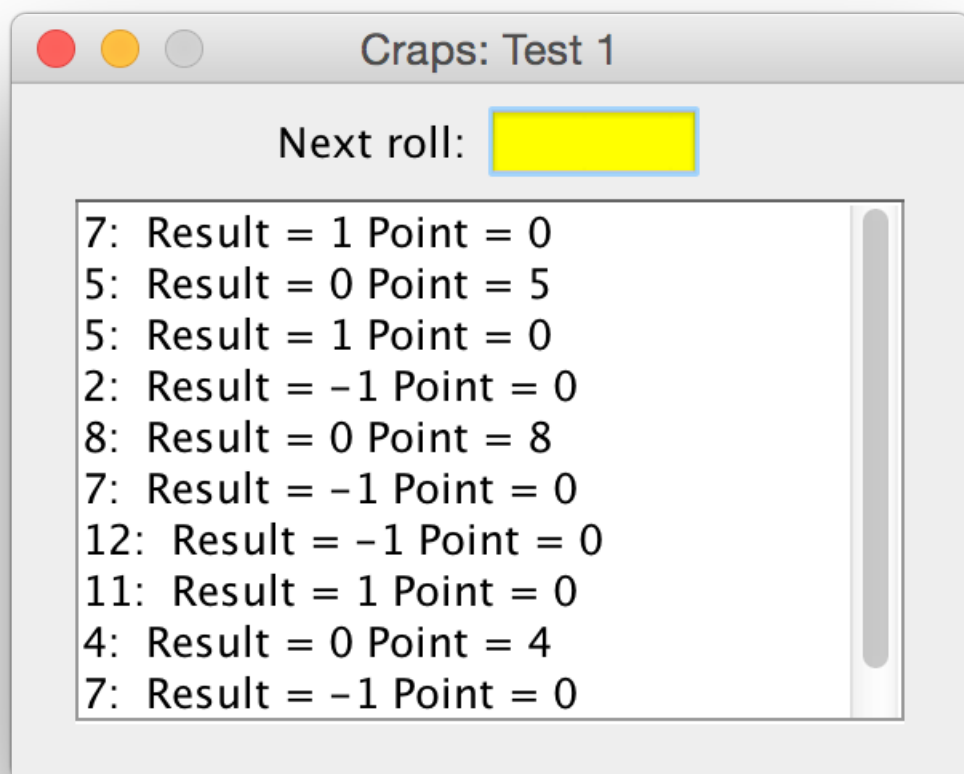
## RollingDie.java

The source code **added** for RollingDie.java

```
...../**
.....* Creates circles based on the number of dots using the "coordinate"
.....* like system calculated above, with `x1`, `x2`, `x3`, `y1`, etc.
.....*/
.....switch (numDots) {
.....case 1:
.....    g.fillOval(x2, y2, dotSize, dotSize);
.....    break;
.....case 2:
.....    g.fillOval(x1, y1, dotSize, dotSize);
.....    g.fillOval(x3, y3, dotSize, dotSize);
.....    break;
.....case 3:
.....    g.fillOval(x1, y1, dotSize, dotSize);
.....    g.fillOval(x2, y2, dotSize, dotSize);
.....    g.fillOval(x3, y3, dotSize, dotSize);
.....    break;
.....case 4:
.....    g.fillOval(x1, y1, dotSize, dotSize);
.....    g.fillOval(x1, y3, dotSize, dotSize);
.....    g.fillOval(x3, y1, dotSize, dotSize);
.....    g.fillOval(x3, y3, dotSize, dotSize);
.....    break;
.....case 5:
.....    g.fillOval(x1, y1, dotSize, dotSize);
.....    g.fillOval(x1, y3, dotSize, dotSize);
.....    g.fillOval(x2, y2, dotSize, dotSize);
.....    g.fillOval(x3, y1, dotSize, dotSize);
.....    g.fillOval(x3, y3, dotSize, dotSize);
.....    break;
.....case 6:
.....    g.fillOval(x1, y1, dotSize, dotSize);
.....    g.fillOval(x1, y2, dotSize, dotSize);
.....    g.fillOval(x1, y3, dotSize, dotSize);
.....    g.fillOval(x3, y1, dotSize, dotSize);
.....    g.fillOval(x3, y2, dotSize, dotSize);
.....    g.fillOval(x3, y3, dotSize, dotSize);
.....    break;
.....}
```

## java CrapsTest1

The result of running `java CrapsTest1` and testing various rolls to test the game functionality.



## DieTest.java

The source code for DieTest.java .

```
import java.util.Scanner;

public class DieTest {
    public static void main(String[] args) {
        Scanner keyboard = new Scanner(System.in);
        System.out.print("How many times would you like to roll? ");

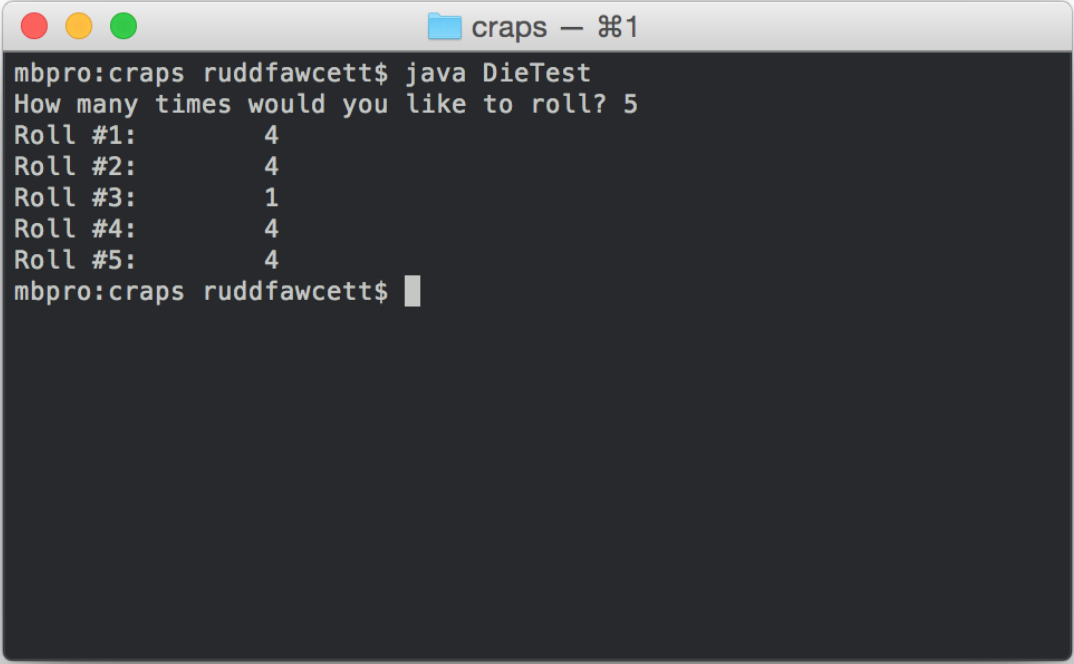
        int times = keyboard.nextInt();

        testRoll(times);
    }

    private static void testRoll(int times) {
        Die die = new Die();
        for(int i = 1; i <= times; i++) {
            die.roll();
            System.out.println("Roll #" + i + ":\t" + die.getNumDots());
        }
    }
}
```

## java DieTest

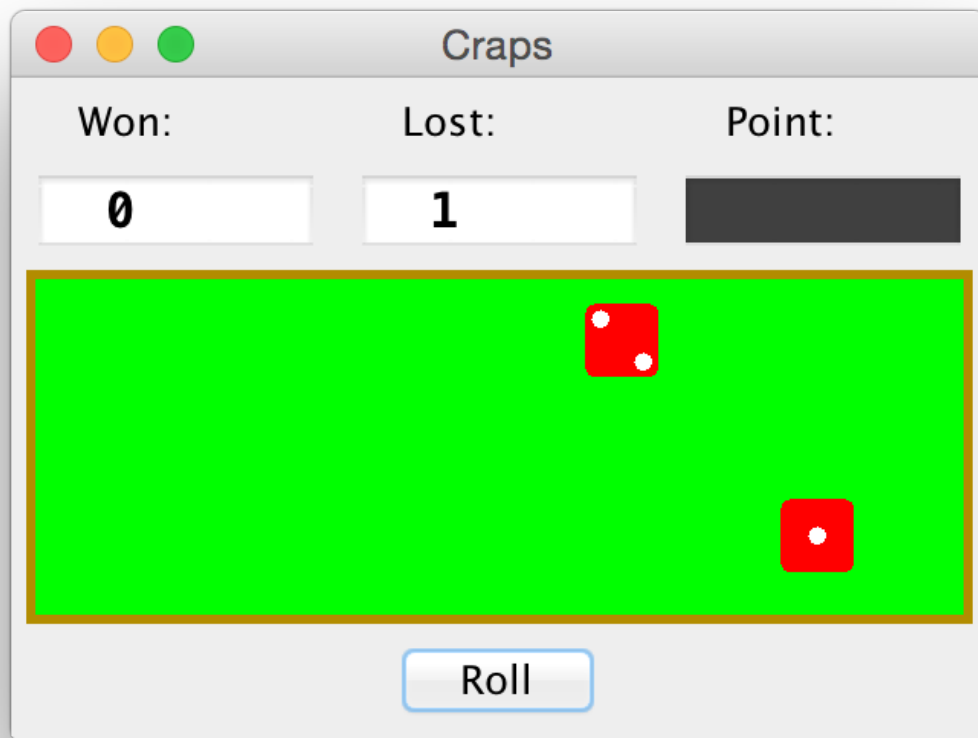
An example of running `DieTest.java` -- you can choose how many rolls to test for.

A screenshot of a macOS terminal window. The title bar shows three colored window control buttons (red, yellow, green) on the left, a folder icon and the text "craps — %1" in the center. The terminal content shows a user at the "mbpro:craps ruddfawcett" prompt running "java DieTest". The program prompts "How many times would you like to roll?" and the user enters "5". The program then displays five rolls: Roll #1: 4, Roll #2: 4, Roll #3: 1, Roll #4: 4, and Roll #5: 4. The prompt returns to "mbpro:craps ruddfawcett\$".

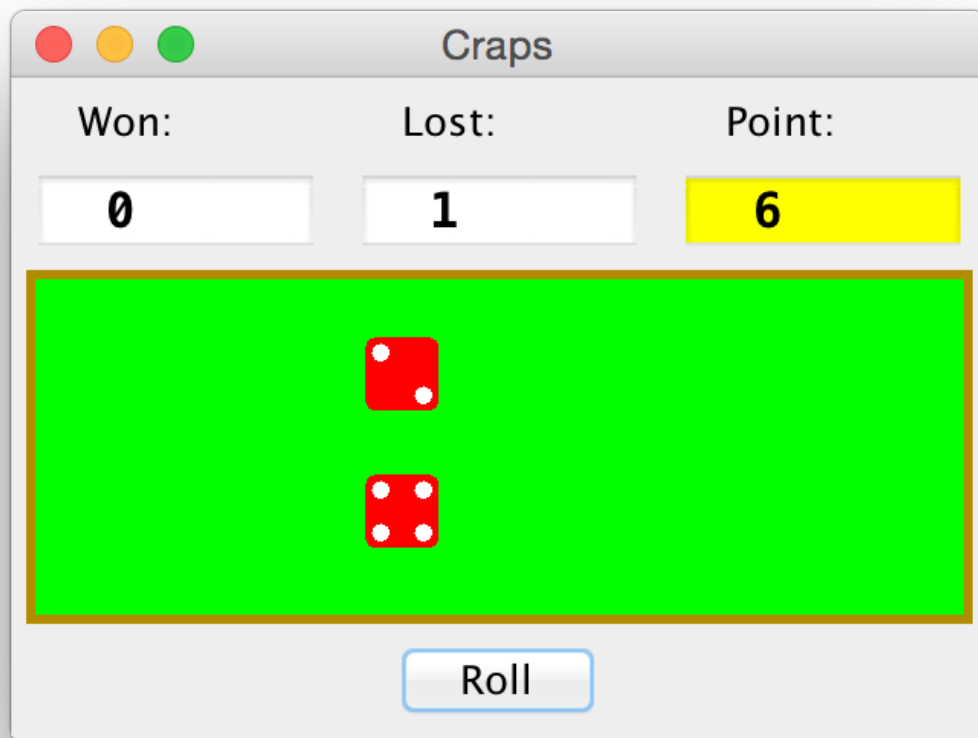
```
mbpro:craps ruddfawcett$ java DieTest
How many times would you like to roll? 5
Roll #1:      4
Roll #2:      4
Roll #3:      1
Roll #4:      4
Roll #5:      4
mbpro:craps ruddfawcett$
```

## java Craps

The result of playing the Craps game.

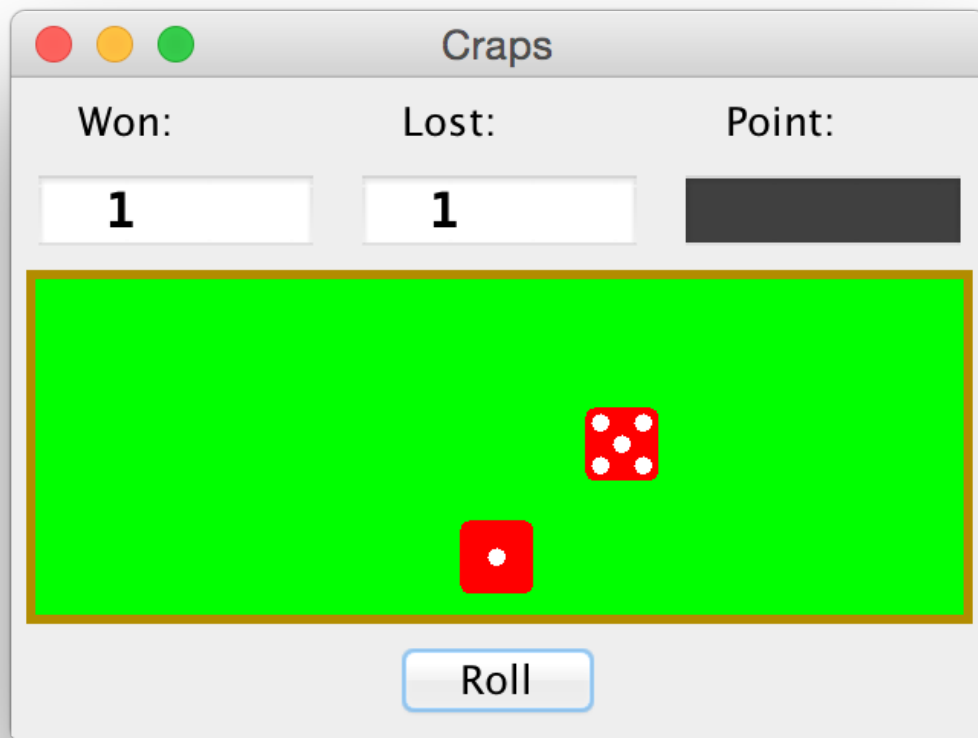


I lost the first roll here because I rolled a 3.



I didn't lose or win here because I rolled a 6.





I won here because I rolled the correct number of points on a subsequent roll.