CSCI 132:
Basic Data Structures and Algorithms

More Java (while loops, practice)

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Announcements

Lab 2 is due **tomorrow** at 11:59PM
- Look back at the Student example if you get stuck

While loops can be used to iterate _if_ a condition is true.

```java
int x = 100;
while(x > 0) {

    System.out.println(x);
    x--;


}
```

1. Check Condition
2. If condition is true, execute body of loop
3. Repeat

```java
int x = 100;
while(x > 0) {

    System.out.println(x);
    x++;


}
```

You do have to worry about the possibility of infinite loops….

The **do/while** loop will always execute the body of the loop once, and then check the condition

```java
int i = 0;
do {
    System.out.println(i);
    i++;
}
while (i < 5);
```

1. Execute body of loop
2. Check condition
3. Repeat

!!! You are guaranteed at least one execution of the loop body

Practice

Write a Java program that will simulate dice being rolled. The Java program should keep track of the frequencies of how much each dice number was rolled (# of 1s rolled, # of 2s rolled, etc) and print it out to the screen like a Histogram

```
Enter # of times to roll dice:
20
Enter # of sides of dice:
6
0:
1: **
2: *****
3: ****
4: **
5: ****
6: ***
```

Random Numbers

```java
import java.util.Random;


public static void main(String args[]){

        // create instance of Random class
        Random rand = new Random();

        // Generate random integers in range 0 to 999
        int rand_int1 = rand.nextInt(1000);
        int rand_int2 = rand.nextInt(1000);

        // Print random integers
        System.out.println("Random Integers: "+rand_int1);
        System.out.println("Random Integers: "+rand_int2);

        // Generate Random doubles
        double rand_dub1 = rand.nextDouble();
        double rand_dub2 = rand.nextDouble();

        // Print random doubles
        System.out.println("Random Doubles: "+rand_dub1);
        System.out.println("Random Doubles: "+rand_dub2);
}
```
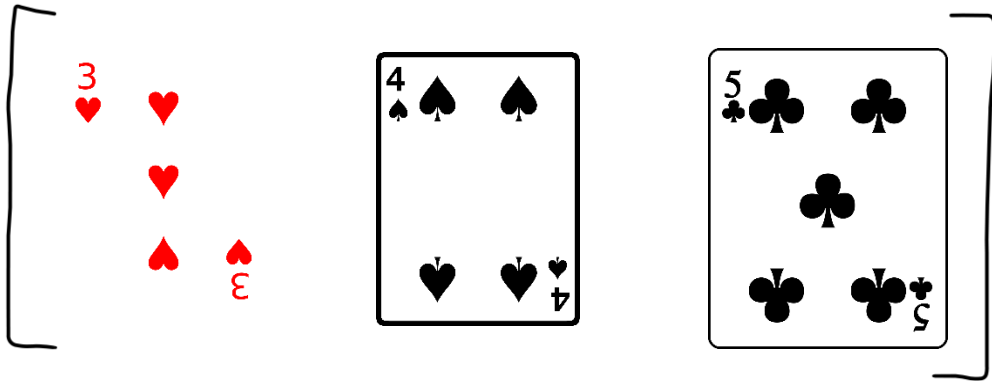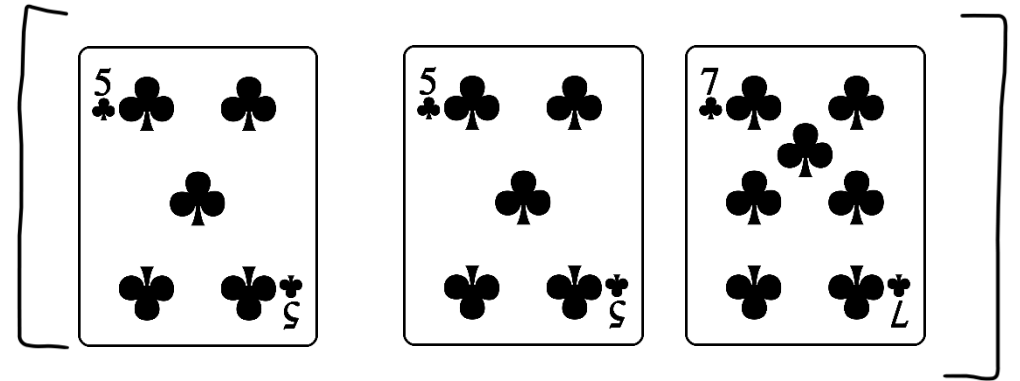
Easiest way to generate random numbers is with `Random.nextInt()`

Write a program that will evaluate a three card poker hand. Your program should be able to identify
1. Three of a kind
2. Flush
3. Sequence
4. Two of a kind

Sequence

Flush
Two of a kind