Week 5, Lecture 1

Coding and Using Methods

Announcements

- The deadline for the first three lab assessments is **this week**.
- Assignment 1 has been marked. Your marks and commented code can be accessed via the course web page.

This Week

Lecture 1: Coding and using methods

Lecture 2: Exploring methods

***Java Genesis*:**

–Ch6: Methods

Lab Assessment 4 (deadline Week 8)

Quick Quiz for Chapter 5

Problem 1

Generate three random integers as follows:

- first is in the range 1 to 6;
- second is in the range -5 to 5;
- third is in the range 0 to 100.

Problem 2

Write a method to find the average of the numbers in an array of integers.

That is, the method takes an array of integers and returns the (floating point) average of the numbers in the array.

Problem 3

Write a method to print in the Transcript window all the integers in an array of integers.

That is, the method takes an array of integers and prints in the Transcript window each integer in that array.

Problem 4

Write a method to test if all the integers in an array of integers are even.

That is, the method takes an array of integers and returns **true** if all the integers in the array are even, else returns **false**.

Problem 5

Write a method to extract an element at random from an array of integers.

That is, the method takes an array of integers and returns one of the elements in that array selected at random.

Problem 6

Write a method to extract a colour at random from an array of colours.

That is, the method takes an array of colours and returns one of the colours in that array selected at random.


```
public static int randIntInRange (int from, int to) {
   int randInt = (int)((to-from+1)*Math.random( )) + from;
   return randInt;
}


public static double getAverage (int [ ] xs) {
     int sum = 0;
     for (int i=0; i<xs.length; i++) {
          sum = sum + xs[i];
     }
     return (double)sum/xs.length;
}
```



```
public static boolean isEven (int [ ] xs) {
     for (int i=0; i<xs.length; i++) {
          if (xs[i] % 2 != 0) return false;
     }
     return true;
}
```



```
import genesis.*;
import java.awt.*;
public class Fun {
  public static void printIntArray (int [ ] xs) {
     for (int i=0; i<xs.length; i++) {
          Transcript.print(xs[i] + "  ");
     }
     Transcript.println( );
  }
  public static int randElement(int [ ] xs) {
     int posn = (int)(xs.length*Math.random( ));
     return xs[posn];
  }
  public static Color randElement(Color [ ] xs) {
     int posn = (int)(xs.length*Math.random( ));
     return xs[posn];
  }
}
```