

## ESC101 : Fundamental of Computing

Lab 2 for 14th August 2008

### 1. Finding if three numbers form an A.P. :

Declare three variables `a`, `b` and `c` of type `int`, and assign them any values. Write JAVA code to find out whether `a`, `b` and `c` form an arithmetic progression.

### 2. Calendar :

Given the number of days, `noOfDays` and start day of a month `startDay`, write JAVA program to print the calendar of that month.

In the beginning of the code, the variables `startDay` and `noOfDays` are declared to be of type `int` and are assigned suitable values.

If the start day is *sunday*, then `startDay` is assigned 0, if it is *monday* then `startDay` is assigned 1, if it is *tuesday* then `startDay` is assigned is 2, and so on.

For example, if `noOfDays` is 31 and `startDay` is 2(tuesday) then the output should be like this:

<i>SUN</i>	<i>MON</i>	<i>TUE</i>	<i>WED</i>	<i>THU</i>	<i>FRI</i>	<i>SAT</i>
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

Note: `System.out.print()` function is used to print in the same line, i.e., without printing a newline.

### 3. Finding whether a number is a factorial :

Declare a variable `n` of type `int`, and assign it some nonnegative value. Write a JAVA code to determine if there exists an integer `r` such that  $n = r!$ , if yes, then also print the value of `r`. Print appropriate messages for each input.

### Exploratory problem [this problem is optional and not to be graded] :

The following code was written to output zeroes in every line.

```
class Zero
{
    public static void main(String args[])
    {
        int i,j;
        i = 2;
        j = -2;

        System.out.println("i+j+i+j");
        System.out.println("i+j"+"i+j");
        System.out.println("i+j"+i+j);
        System.out.println("i+j"+"(i+j)");
        System.out.println((i+j)+i+j);
    }
}
```

```
        System.out.println(i+j+(i+j));
        System.out.println((i+j)+(i+j));
        System.out.println((i+j+i+j));
        System.out.println(i+j+i+j);
    }
}
```

But, it prints zeroes in some lines and in some, it doesn't. Try to give reason for the output this program gives.