

ESC101 : Fundamental of Computing

Lab 2 for 5th August 2008

1. Printing a pattern :

The objective of this assignment is to invoke the artist in you, “the ASCII artist” in you, to be more precise. (“ASCII Art” - where normal screen characters are used to create artistic objects.)

(For more about ascii art, visit http://en.wikipedia.org/wiki/ASCII_art)

You are required to make an ASCII batman using your JAVA knowledge. A batman, like this -

```
-----
\          \ | \-| /          /
 \          \-|  |-/          /
  |          |          |
  |          |          |
  /          \          \
 /----- \----- \
      \ - - - - /
          \ /
```

Use the `System.out.println()` method and keep in mind, that -

(1) `System.out.println("-| /-");` generates

```
-| /-
```

and

(2) `System.out.println("\\");` generates

```
\
```

because the first ‘\’ is used as an escape character. To print few special characters like (") and (\), you need to append an extra ‘\’ before each such character in the `System.out.println()`.

2. Swapping without temporary variable :

Declare two integer variables `i` and `j`. Assign some positive value to `i` and some negative value to `j`. Now write a code to swap the values of these variables without using any temporary variable.

3. Surface area and volume of a cylinder :

Declare two variables `radius` and `height` of type `double`. Assign them some positive values. Assume that these variables correspond to the radius and height of a cylinder. Write a code to calculate and print its surface area and volume. You may use the following formulas.

$$\text{Surface Area of a Cylinder} = 2\pi r^2 + 2\pi r h$$

$$\text{Volume of a Cylinder} = \pi r^2 h$$

Note: Please take the value of π to be 3.142.