

EEE 210: Software Engineering

Lab 4 Exercises for Week 5 (5 Jan. – 11 Feb.), Spring 2018

Note:

- Project folder nomenclature: Lab4_*yourname*
- After completion, zip your project folder and upload it to your Moodle account by the end of today's session.
- Any queries during the lab should be discussed merely with the Instructor/TA.
- The output of each exercise you complete should be included (as screenshots) in the report named Report4_*yourname*.
- You are **not allowed** to use the Internet while doing these exercises. Consider this as a quiz!

Exercise 1:

Write a Java program to print out the Pascal triangle using loops.

Input The user should enter the height of the triangle h .

Output The corresponding Pascal triangle should be displayed (shown below)

```
Enter the height: 10
The Pascal triangle of height 10 is:

1
1 1
1 2 1
1 3 3 1
1 4 6 4 1
1 5 10 10 5 1
1 6 15 20 15 6 1
1 7 21 35 35 21 7 1
1 8 28 56 70 56 28 8 1
1 9 36 84 126 126 84 36 9 1
```

Exercise 2:

Write a Java program to perform in-place swapping of two numbers. Note that, in this exercise, you are not allowed to use any temporary variable. You should in-place swap two integer variables, say a and b , using two approaches:

1. In-place swap using the XOR operation.
2. In-place swap using addition and subtraction.

Input The user provides the integer variables a and b as inputs.

Output The corresponding output is shown below:

```
Enter a and b: 1234 5678

Before swapping:
a = 1234
b = 5678

After XOR swapping:
a = 5678
b = 1234

After add and sub:
a = 5678
b = 1234
```