

# Faculty of Computing

Year 1 Semester 1 (2024)

IT1120 – Introduction to Programming

Lab Sheet 05

## Question 1 (Tutorial 4 – Q1)

Write a Java program to read three different integers from the keyboard and compute the smallest and largest of these numbers.

Save the file inside ‘**Lab 5**’ folder as: **ITxxxxxxxxLab5Q1.java**

Replace ‘ITxx xxx xxx’ of the filename, with your own Student ID.

Expected Output:

```
Microsoft Windows [Version 10.0.19045.4598]
(c) Microsoft Corporation. All rights reserved.

C:\Users\vidan\Desktop\Lab 5>javac ITxxxxxxxxLab5Q1.java

C:\Users\vidan\Desktop\Lab 5>java ITxxxxxxxxLab5Q1
Enter the first integer: 36
Enter the second integer: 14
Enter the third integer: 85

User entered numbers are : 36 14 85
The Smallest number is: 14
The Largest number is: 85
```

## Question 2 (Tutorial 4 – Q2)

A credit card company has a promotion for existing customers to introduce new members. Prizes are given to the customers depending on the number of new members they introduce. For example, if a customer has introduced 3 people, then he/she is entitled to a: Bag.

New Member	Prize
0	No Prize
1	Pen
2	Umbrella
3	Bag
4	Travelling Chair
$\geq 5$	Headphone

Write a Java program using **SWITCH statement** to input the number of new members a customer has introduced and print the prizes the customer is entitled to. Validate the entered number (should be greater than or equal to 0).

Save the file inside ‘Lab 5’ folder as: **ITxxxxxxxxLab5Q2.java**

Replace ‘ITxx xxx xxx’ of the filename, with your own Student ID.

Expected Output:

```
Microsoft Windows [Version 10.0.19045.4598]
(c) Microsoft Corporation. All rights reserved.
```

```
C:\Users\vidan\Desktop\Lab 5>javac ITxxxxxxxxLab5Q2.java
```

```
C:\Users\vidan\Desktop\Lab 5>java ITxxxxxxxxLab5Q2
Enter the number of new members introduced: 3
```

```
Prize is a : Bag
```

**Ideal Scenario 1**

```
C:\Users\vidan\Desktop\Lab 5>java ITxxxxxxxxLab5Q2
Enter the number of new members introduced: 0
```

```
No Prize
```

**Ideal Scenario 2**

```
C:\Users\vidan\Desktop\Lab 5>java ITxxxxxxxxLab5Q2
Enter the number of new members introduced: 10
```

```
Prize is a : Headphone
```

**Ideal Scenario 3**

```
C:\Users\vidan\Desktop\Lab 5>java ITxxxxxxxxLab5Q2
Enter the number of new members introduced: -5
Input must be a number 0 or greater
```

**Negative Validation**

### Question 3 (Tutorial 4 – Q3)

Ransiri Resort offers discount for full board reservations during the month of December as shown below. Discount is given only for the reservations done for more than 3 days. Room charges per day is Rs 48,000.00.

No of Days Reserved	Discount Rate (%)
< 3 days	No discount
3 – 4 days	10
5 or more	20

Write a Java program to enter the start date (day) and end date (day) of the reservation and find out the number of days reserved and the total amount to be paid. Use **CONSTANTS** to declare fixed values.

After the start date and end dates are entered, validate the below conditions. If the conditions fail, display error messages and exit from the program.

Validation 1 – **Start date and end date cannot be less than 1 or greater than 31**

Validation 2 – **Start date should be less than the end date**

Save the file inside ‘**Lab 5**’ folder as: **ITxxxxxxxxLab5Q3.java**

Replace ‘ITxx xxx xxx’ of the filename, with your own Student ID.

Expected Output:

```
Microsoft Windows [Version 10.0.19045.4598]
(c) Microsoft Corporation. All rights reserved.
```

```
C:\Users\vidan\Desktop\Lab 5>javac ITxxxxxxxxLab5Q3.java
```

```
C:\Users\vidan\Desktop\Lab 5>java ITxxxxxxxxLab5Q3
```

```
Enter Start Date (1-31): 12
```

```
Enter End Date (1-31): 15
```

```
Room Charge Per Day: Rs. 48000.0/=
```

```
Number of Days Reserved: 3
```

```
Total Amount to be Paid: 129600.0
```

**Ideal Scenario**

```
C:\Users\vidan\Desktop\Lab 5>java ITxxxxxxxxLab5Q3
```

```
Enter Start Date (1-31): 17
```

```
Enter End Date (1-31): 13
```

```
Error: Start Date must be less than End Date
```

**Validation 2**

```
C:\Users\vidan\Desktop\Lab 5>java ITxxxxxxxxLab5Q3
```

```
Enter Start Date (1-31): 32
```

```
Enter End Date (1-31): 0
```

```
Error: Days must be between 1 and 31
```

**Validation 1**