# Lab – 3

**Objective**:

- A company sells a software package for a retail price of $99

- For large orders, discounts are applied as shown in the table below:

| Quantity | Discount(%) |
|---|---|
| 10-19 | 20 |
| 20-49 | 30 |
| 50-99 | 40 |
| 100 or more | 50 |

**Task:**

- Write a Java program to calculate

  - the amount of discount(if any) and

  - total bill amount before & after the discount is applied.

**Instructions:**

- Prompt the user to enter the total number of software packages ordered.

- Make sure to perform input validation on user input.

  - If the user provides invalid values, do not perform any calculations and exit the program.

- Compute and display the following:        (see Sample Output)

  - Amount of discount

  - Total Bill Amount before discount

  - Total Bill Amount after discount

**Sample Output - 1**

Enter the total number of software packages ordered:

**25**

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Total Bill Amount (before discount) = $2475.0

Amount of discount = $742.5

Total Bill Amount (after discount) = $1732.5

**Sample Output - 2**

Enter the total number of software packages ordered:

**- 10**

Invalid value for package count! Exiting the program!

**Lab Submission:**

- At the beginning of your program, insert your full name as a comment.
- Include comments in your program wherever necessary.
- Upload the .java file on Dropbox.

**Lab Report Submission:**

- First, download the Lab Report Template document on Dropbox.
- Use this template to complete your lab report.
- Proposed Solution:
  - In the proposed solution section of your lab report, draw a flow chart based on your lab solution.
    - Make sure to put decisions in diamonds, actions/statements in boxes, and draw arrows showing the flow of the program.
    - Arrows coming from decisions must have the "TRUE" and "FALSE" branches clearly labeled.
- Additional Questions:
  1. (2 pts) What is the difference between main memory and secondary memory?
  2. (2 pts) How many bytes of memory does the datatype *double* take?

3.  (2 pts) Name the data type that only accepts the following 2 values: true, false

4.  (2 pts) What cannot be the first character in a Java identifier

5.  (2 pts) Can I use the word *float* as a variable name? Why/Why not?

6.  (10 pts) Given the following code snippet, what will the program print to the console?

```java
int number = 3;
if(number < 5)
{
        System.out.println("A");
}
else if(number < 100 && number > 5)
{
        System.out.println("B");
}
else if (number < 20)
{
        System.out.println("C");
}
else
{
        System.out.println("D");
}
if(number > 1 || number <=5)
{
        System.out.println("E");
}
else if(number > 2 && number <=40)
{
        System.out.println("F");
}
else
{
        System.out.println("G");
}
```

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