**Lab Report 03**

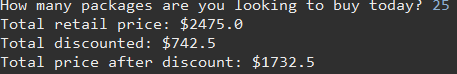
**In this lab, we are given that a software package is being sold for $99. We are provided a table of increasing quantities of packages bought, which are meant to determine the discount that will be applied to an order of that many packages. We are tasked with implementing an algorithm that calculates how much an order will cost before and after a discount is applied, if applicable.**

**In order to create an effective algorithm that will accomplish this task, I will make use of an if-else branch to apply discounts as needed and to validate the user’s input. For example, if the quantity of software packages bought if within the range of 10-19, a 20% discount will be applied to the order. Then, I will compute the discount amount, retail price, and discounted price using mathematical operators.**

**A group of white squares

Description automatically generated**

**In these instances, the program functioned normally because a positive integer was entered for the number of packages bought. Thus, the calculations were performed successfully and the new total prices were able to be computated.**

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**A screenshot of a computer screen

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**By using a try-catch block, I also ensured that the user could not proceed in the program if they entered an invalid value, such as a character or negative integer. In this instance, the program stopped because a symbol was entered instead of a number.**

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**This lab was a fun way to practice using conditionals and decisions in java programs. Making a flowchart helped me gain a better understanding of the decision branches and how to better structure my program. I also taught myself about the try-catch block, where it applies, and how to use it for input validation.**

Additional Questions:

1. **What is the difference between main memory and secondary memory?** Main memory is used to store data currently being used and is temporary. Secondary memory stores data permanently
2. **How many bytes of memory does the datatype *double* take?** 8
3. **Name the data type that only accepts the following 2 values: true, false** Boolean
4. **What cannot be the first character in a Java** **identifier?** A digit
5. **Can I use the word *float* as a variable name? Why/Why not?** No; It is a reserved word
6. **Given the** **following code snippet, what will the program print to the console?** “AE”

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”);

}