Name : Faricha Aulia

NIM : 2141720155

Class : 1 I / D-IV Informatics Engineering

Basic Programming

Jobsheet 3

Question Experiment 1

1. Please change the variable name, so the variable will be created in a standard model.
    Answer : I changed the name with MyVariable to make it simple and easy to input. I also change the data in it to be my personal data.

```java
public class MyVariable{
    public static void main (String args[]){
        String oneOfMyHobbiesIs = "Cooking";
        boolean isSmart = true;
        char gender = 'F';
        byte _age = 18;
        double gpa = 3.65, height = 1.62;

        System.out.println(oneOfMyHobbiesIs);
        System.out.println("Are you smart? "+isSmart);
        System.out.println("What is your gender? "+gender);
        System.out.println("How old is she? "+_age);
        System.out.println(String.format("She has GPA %s" +  " and height %s", gpa, height));
    }
}
```

2. Run the code that you have created and observe the results.
    Answer : After creating the variable and filling it, we can print to the variable content layer whose contents should match the previous input. If some code is written incorrectly, the program cannot be executed, if the writing is correct, it will appear in CMD according to the input data and variables as below

```
Microsoft Windows [Version 10.0.19042.1165]
(c) Microsoft Corporation. All rights reserved.

C:\Users\ASUS> cd C:\Users\ASUS\Dasar Pemrograman

C:\Users\ASUS\Dasar Pemrograman>javac MyVariable.java

C:\Users\ASUS\Dasar Pemrograman>java MyVariable
Cooking
Are you smart? true
What is your gender? F
How old is she? 18
She has GPA 3.65 and height 1.62
```

Question Experiment 2

1. Why, when we are displaying Blood group value, the result is not A?
    Answer : Because when output we use bytes which should not be used as variable names

2. What does the syntax of byte distance = (byte) 130 mean? then why when displayed, the results change?
   Answer : It seems that the byte type has a range of -128 to 127, as it is signed. So when you assign a number 130 to a byte variable, the variable undergoes overflow and for 128 the output moves to the highest negative number, -128. So when the input is 130, the number overflows to -126 and thus you get the output -126.

3. At float temperature = 60.50F, please remove F then run it again. What happened?
   Answer : There will be an error like this

```
C:\Users\ASUS\Dasar Pemrograman>javac MyTypeData.java
MyTypeData.java:6: error: incompatible types: possible lossy conversion from double to float
            float suhu = 60.50;
                         ^
1 error
```

4. Why when displaying the heavy value, the results change?
   Answer : An instruction is executed after previously executed instructions. The sequence of instructions the final result of a yahoo. If you change the order of writing there is a difference, the final result will also change.

5. What is the purpose of initialization 0x10 in the decimal variable?
   Answer : Using (int)0x10 will convert it to base 10 decimal value 16, whereas using (int)"0x10" will end up with decimal value 0: since "x" is not a numeric value, anything after that will be ignored.

Question Experiment 3

1. Explain in your opinion the difference between x++ and ++x?
   Answer :
   - x++ is called postincrement (returns the value of x and then increments)
   - ++x is called preincrement (increments the value of x and then returns x)

2. What is the result of int z = x ^ y; , please do the calculations manually!
   Answer : XOR ⟶ x = 11 = 1011
   $$\frac{y = 12 = 1100}{0111 = 7 \text{ (z)}}$$

```
public class ManualOperator{
    public static void main(String[] args){
        int x1 = 10;
        int y1 = 12;
        int z1 = x1 ^ y1;
        System.out.println("Hasil x1 ^ y1 " + z1);

        int x2 = 11;
        int y2 = 12;
        int z2 = x2 ^ y2;
        System.out.println("Hasil x2 ^ y2 adalah " + z2);
    }
}
```
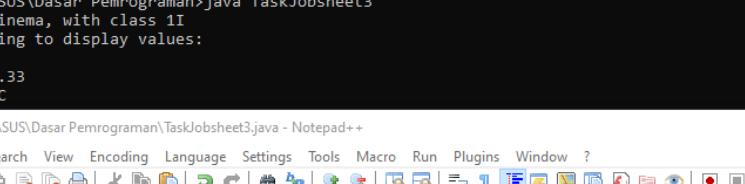
Question Experiment 4

1. Explain why you have to make a Scanner declaration in the 4th experiment above?
   Answer : Command to enter a value in the form of a String to the variable Name. perform the process of storing the value that has been entered into the Name variable.

2. Explain what the use of the program snippet below is!
   Answer : To retrieve data from the data type used is integer

Task

1. From the information table, make a program to display the results as in the output below!
   Answer :

```
C:\Users\ASUS\Dasar Pemrograman>javac TaskJobsheet3.java

C:\Users\ASUS\Dasar Pemrograman>java TaskJobsheet3
I am a Polinema, with class 1I
I am learning to display values:
Integer 10
Fraction 3.33
Character C
```

C:\Users\ASUS\Dasar Pemrograman\TaskJobsheet3.java - Notepad++

File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?

TaskJobsheet3.java

```java
public class TaskJobsheet3{
    public static void main (String args[]){
        int grade = 1;
        int integer = 10;
        double fractionNumber = 3.33333;
        char Character = 'C';
        char clas = 'I';
        String campus = "Polinema";

        System.out.println(String.format("I am a %s, with class %s%s ", campus, grade, clas));
        System.out.println("I am learning to display values:");
        System.out.println("Integer " + integer);
        System.out.println(String.format("Fraction %.2f ", fractionNumber));
        System.out.println("Character " + Character);
    }
}
```

2. Mr. Edi works in a company with a basic salary of X. Every month Mr. Budi gets a commission from his sales plus the Basic Salary. The commission received by Mr. Budi is 15% of the amount of sales he gets. Make a program that can help Mr. Edi to calculate the salary that Mr. Budi receives!
   Answer :

```
Microsoft Windows [Version 10.0.19042.1165]
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C:\Users\ASUS> cd C:\Users\ASUS\Dasar Pemrograman

C:\Users\ASUS\Dasar Pemrograman>javac Task2Jobsheet3.java

C:\Users\ASUS\Dasar Pemrograman>java Task2Jobsheet3
Enter the Basic Salary
```

C:\Users\ASUS\Dasar Pemrograman\Task2Jobsheet3.java - Notepad++

File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?

Task2Jobsheet3.java

```java
import java.util.Scanner;
public class Task2Jobsheet3{
    public static void main (String args[]){

        Scanner sc = new Scanner(System.in);
        int commission, basicSalary, amountOfSalesHeGets;
        long totalSalary;

        System.out.println("Enter the Basic Salary");
        basicSalary = sc.nextInt();
        System.out.println("Enter the Amount Of sales he gets");
        amountOfSalesHeGets = sc.nextInt();
        commission = 15 * amountOfSalesHeGets / 100;
        System.out.println("Total commission = " + commission);
        totalSalary = basicSalary + commission;
        System.out.println("Total salary = " + totalSalary);
    }
}
```

3. Implement the designed flowchart into the program using the java programming language!

Answer :

```java
import java.util.Scanner;
public class TempScan{
    public static void main(String args[]){

        Scanner sc = new Scanner(System.in);
        float temperature, celcius, reamur, fahrenheit, kelvin;

        System.out.println("Enter Temperature");
        temperature = sc.nextInt ();
        celcius = temperature;
        reamur = celcius * 4 / 5;
        fahrenheit = (9/5 * celcius)+32;
        kelvin = celcius + 273;
        System.out.println("show celcius :" + celcius);
        System.out.println("show reamur :" + reamur);
        System.out.println("show fahrenheit :" + fahrenheit);
        System.out.println("show kelvin :" + kelvin);
    }
}
```