# JOBSHEET 6

# Selection Part 2


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**Class**
1I

**Department**
Information Technology

**Study Program**
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# Labs Activity

## Question! (Experiment 1)

1. What is the output if the input is 2100? Please explain your answer! How to ensure that output complies with regulations (2100 is not a leap year)?
2. Modify the program according to answer number 1!
3. Commit and push the changes into your repository!
4. The year 2000 is a multiple of 4 and a multiple of 100, but it is a leap year. So that, there is an additional rule to determine leap year. If the year is a multiple of 100 and is also a multiple of 400 then that year is a leap year. Modify the program to adjust to these rule! (Create the algorithm without using logical operators)
5. Commit and push the modifications to the repository!

## Answer!

1. The output will be “Not a leap year”, but it would incorrectly indicate that it is a leap year. This is because the code only checks for divisibility by 4 and non-divisibility by 100, but it does not account for years that are divisible by both 100 and 400.
2.

```java
import java.util.Scanner;

public class Selection2Exp124 {
    Run | Debug
    public static void main(String[] args) {
        Scanner input24 = new Scanner(System.in);
        int year;

        System.out.print(s:"Input year = ");
        year = input24.nextInt();

        if(year%4 == 0)
            if(year%100 == 0 && year%400 == 0)
                System.out.println(x:"Leap year");
            else
                System.out.println(x:"Not a leap year");
        else
            System.out.println(x:"Not a leap year");
    }
}
```

4.

```java
import java.util.Scanner;

public class Selection2Exp124 {
    Run | Debug
    public static void main(String[] args) {
        Scanner input24 = new Scanner(System.in);
        int year;

        System.out.print(s:"Input year = ");
        year = input24.nextInt();

        if(year%4 == 0)
            if(year%100 == 0 && year%400 == 0)
                System.out.println(x:"Leap year");
            else
                System.out.println(x:"Not a leap year");
        else
            System.out.println(x:"Not a leap year");
    }
}
```

## Question! (Experiment 2)

1. Modify the source code, so that it can detect the other types of triangles (equilateral triangle and isosceles triangle)
2. Commit and push the changes into your repository.

## Answer!

1. 

```java
import java.util.Scanner;

public class Selection2Exp224 {
    Run | Debug
    public static void main(String[] args) {
        Scanner input24 = new Scanner(System.in);
        int angle1, angle2, angle3, totalAngle;

        System.out.print(s:"Input angle 1: ");
        angle1 = input24.nextInt();
        System.out.print(s:"Input angle 2: ");
        angle2 = input24.nextInt();
        System.out.print(s:"Input angle 3: ");
        angle3 = input24.nextInt();

        totalAngle = angle1+angle2+angle3;

        if(totalAngle == 180) {
            if(angle1==90 || angle2==90 || angle3==90) {
                System.out.println(x:"Right triangle");
            } else if(angle1==angle2 && angle2==angle3) {
                System.out.println(x:"Equilateral triangle");
            } else if(angle1==angle2 || angle2==angle3 || angle1==angle3) {
                System.out.println(x:"Isosceles triangle");
            } else {
                System.out.println(x:"Not a right triangle");
            }
        } else {
            System.out.println(x:"Not a triangle");
```

## Question! (Experiment 3)

1. Explain the function of **(int)** in the syntax **netSalary= (int) (income - (income * tax));**

2. Run the program by entering **category = BUSINESSMAN** and **income = 2000000.** Observe what happens! What is the use of **equalsIgnoreCase**?

3. Change **equalsIgnoreCase** to **equals**, then run the program by entering **category = BUSINESSMAN** and **income = 2000000**. Observe what happens! Why is the result like that? What is the use of **equals**?

## Answer!

1. In the syntax netSalary = (int) (income - (income * tax));, (int) is used for type casting, specifically casting the result of the expression (income - (income * tax)) to an int data type.

2. equalsIgnoreCase performs a case-insensitive comparison, ignoring the case differences in the strings.

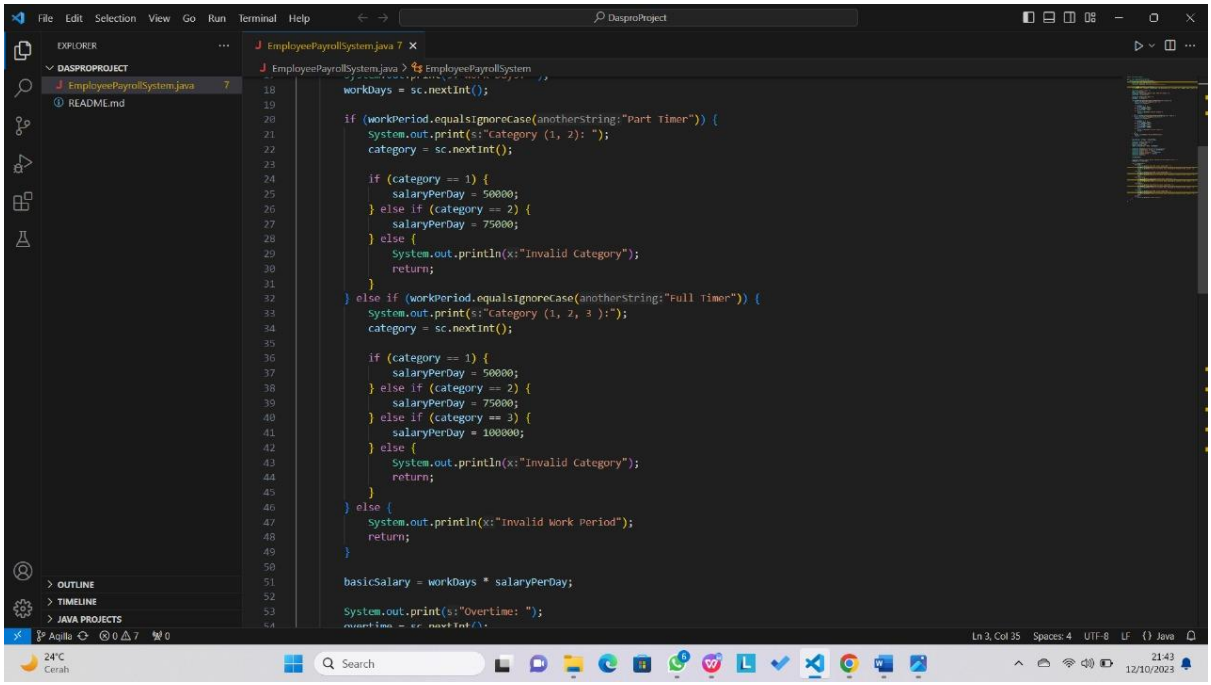
3. equals performs a case-sensitive comparison, so it only considers two strings equal if they have the exact same characters in the exact same case.

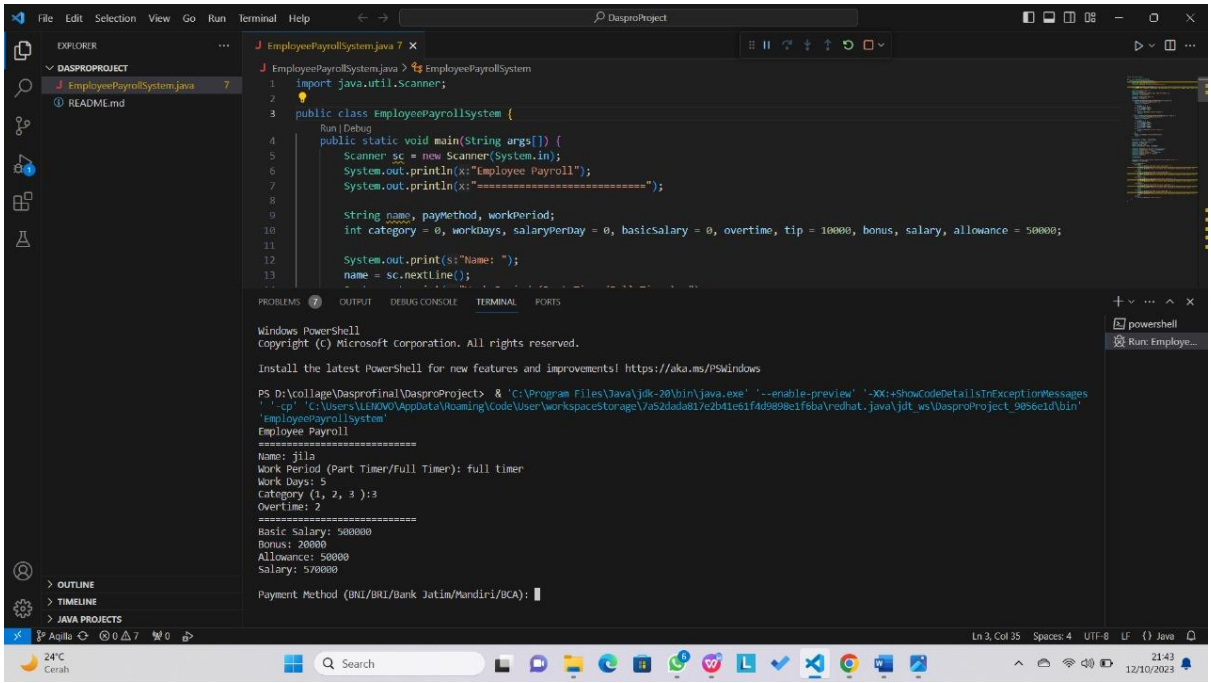
## Assignment

**Time: 160 Minutes**

Create a program code based on the flowchart that was created in the 6th Fundamentals Programming Course meeting assignment related to the Project! Push and commit the results of your program code to your project repository! Note: assignments may only apply material from meeting 1 to meeting 6.

## Answer!




File Edit Selection View Go Run Terminal Help
DasproProject
EXPLORER
DASPROPROJECT
EmployeePayrollSystem.java 7
README.md
EmployeePayrollSystem.java 7
EmployeePayrollSystem.java > EmployeePayrollSystem
1 import java.util.Scanner;
3 public class EmployeePayrollSystem {
Run | Debug
4 public static void main(String args[]) {
5 Scanner sc = new Scanner(System.in);
6 System.out.println(x:"Employee Payroll");
7 System.out.println(x:"==========");
9 String name, payMethod, workPeriod;
10 int category = 0, workDays, salaryPerDay = 0, basicSalary = 0, overtime, tip = 10000, bonus, salary, allowance = 50000;
12 System.out.print(s:"Name: ");
13 name = sc.nextLine();
PROBLEMS 7 OUTPUT DEBUG CONSOLE TERMINAL PORTS
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.
Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows
PS D:\collage\Dasprofinal\DasproProject> & 'C:\Program Files\Java\jdk-20\bin\java.exe' '--enable-preview' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\LENOVO\AppData\Roaming\Code\User\workspaceStorage\7a52dada817e2b41e61f4d9898e1f6ba\redhat.java\jdt_ws\DasproProject_9056e1d\bin' 'EmployeePayrollSystem'
Employee Payroll
==========
Name: jila
Work Period (Part Timer/Full Timer): full timer
Work Days: 5
Category (1, 2, 3 ):3
Overtime: 2
==========
Basic Salary: 500000
Bonus: 20000
Allowance: 50000
Salary: 570000
Payment Method (BNI/BRI/Bank Jatim/Mandiri/BCA):
powershell
Run: Employe...
OUTLINE
TIMELINE
JAVA PROJECTS
Aqilla
Ln 3, Col 35 Spaces: 4 UTF-8 LF Java
24°C
Cerah
Search
21:43
12/10/2023