Lab #2

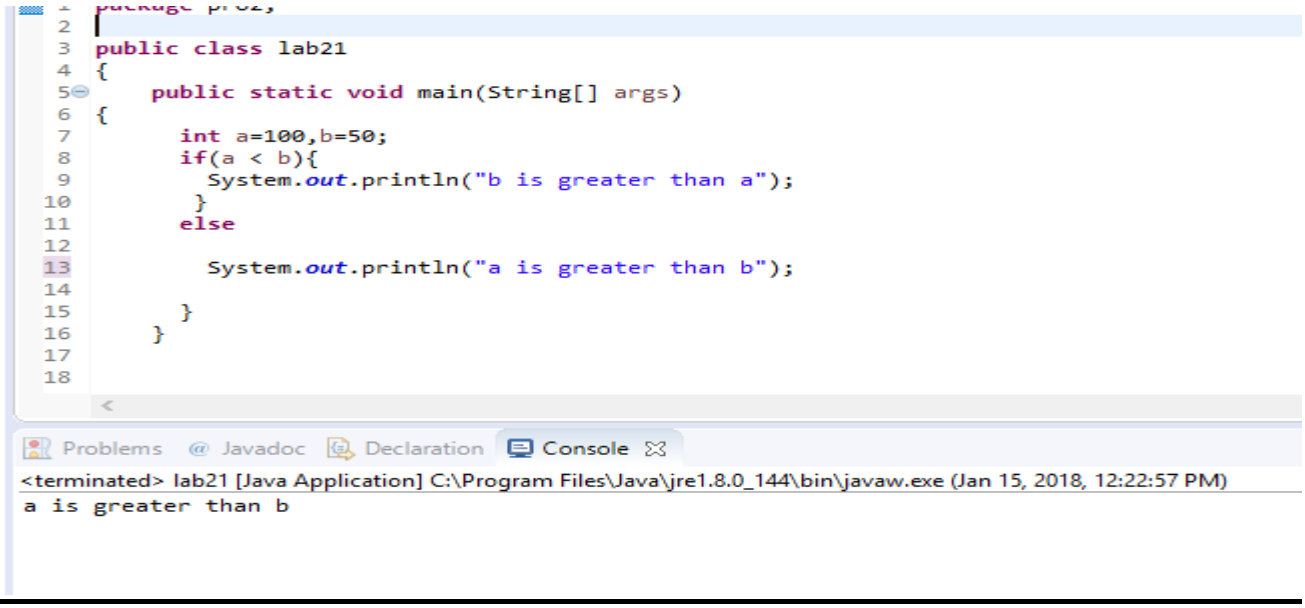
1) **Objective:** To find the greater number between two given numbers.

Problem Statement:- Write a Java program to print the greater number from two given numbers using if-else statements.
a=100
b=50

Code:-

```
package pro2;

public class lab21
{
	public static void main(String[] args)
{
	  int a=100,b=50;
	  if(a < b){
	       System.out.println("b is greater than a");
	   }
	  else

	       System.out.println("a is greater than b");

	  }
	}
```

Screenshot:-



Explanation:-

This type of decision taking is done using **if** statement in Java.

Let's have a look at the syntax of if statement before looking at its example.

```
if(expression)
 {
  statements
 }
```

If the expression written within the brackets of if statement is true, then the statements written in the body of the if (enclosed by curly brackets) are executed.

```
if(expression)
   statement 1
else
   statement 2
```

If the expression is true, statement 1 will be executed. Otherwise, statement 2 will be executed.

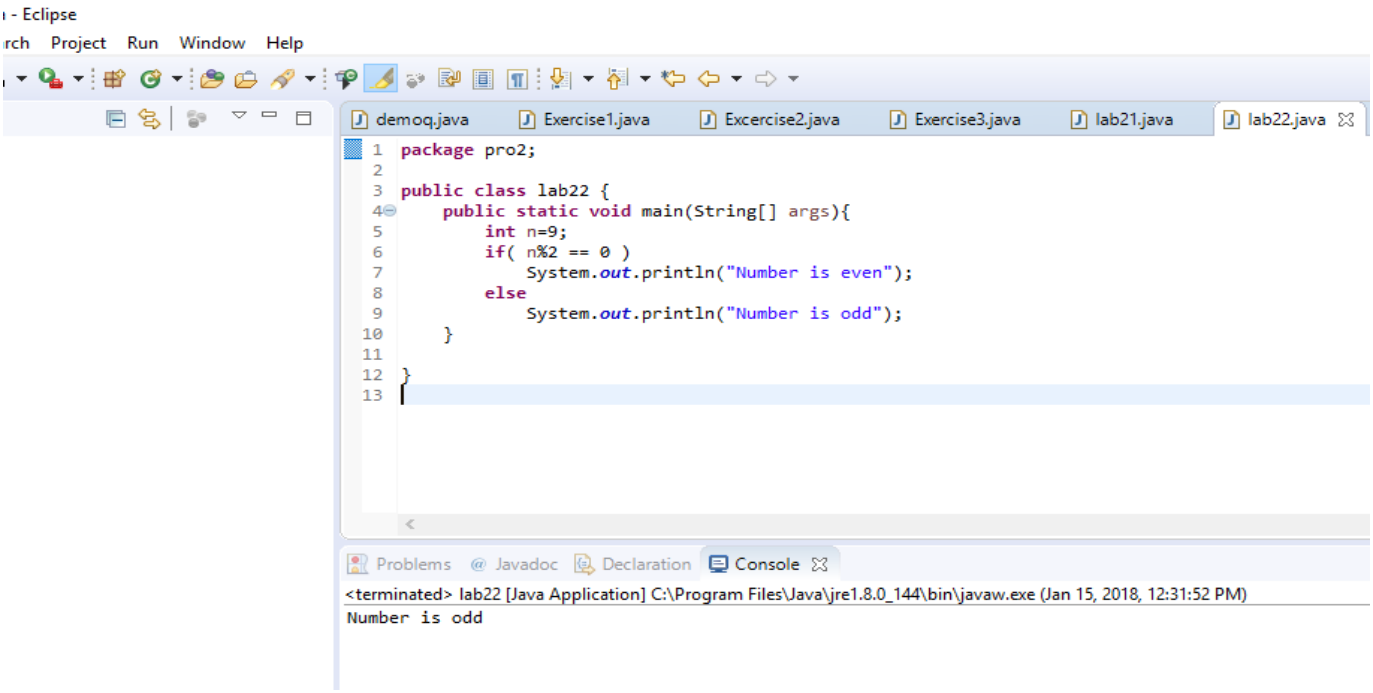
2) **Objective:** To find that a given number is even or odd.

Problem Statement:- Write a Java program to find any given number is even or odd.

Code:-

```
package pro2;

public class lab22 {
	public static void main(String[] args){
		int n=9;
		if( n%2 == 0 )
			System.out.println("Number is even");
		else
			System.out.println("Number is odd");
	}

}
```

Screenshot:-



Explanation:-

For a number to be even, it must be divisible by 2. This means that it should give a remainder 0 if divided by 2.

We have entered 9 here and n%2 i.e. 9%2 is 1. So, **else** will be executed and **Number is odd** will be printed on the screen.

Lab Practice

3) **Objective:** To find the number which is the greatest among three given numbers.

Problem Statement:- Write a Java program to find a number which is the greatest among three given numbers using if-else statements.
Test Data:
A=5
B=2
C=8

4) **Objective:** To test a given number is positive or negative.

Problem Statement:- Write a Java program to test a given number is positive or negative.
Test Data:
Input number(a)=35

5) Objective: Use of if-else statements.

Problem Statement:- Write a Java program that reads a floating-point number and prints "zero" if the number is zero. Otherwise, print "positive" or "negative". Add "small" if the absolute value of the number is less than 1, or "large" if it exceeds 1,000,000.

6) Objective: To solve the quadratic equation (Use of if-else statements).

Problem Statement:- Write a Java program to solve(find roots) quadratic equation (use if, else if and else).

Test Data
Input a: 1
Input b: 5
Input c: 1
Equation: a*(x^2)+b*x +c

7) Objective: Use of if-else statements.

Problem Statement:- Write a Java program that will read three types of given scores(quiz, mid-term, and final scores) and determine the grade based on the following rules:
-if the average score >=90% =>grade=A
-if the average score >= 70% and <90% => grade=B
-if the average score>=50% and <70% =>grade=C
-if the average score<50% =>grade=F

Take the sample data below: (Test data)

Quiz score: 80

Mid-term score: 68

Final score: 90

8) Objective: Choose a day from the week.

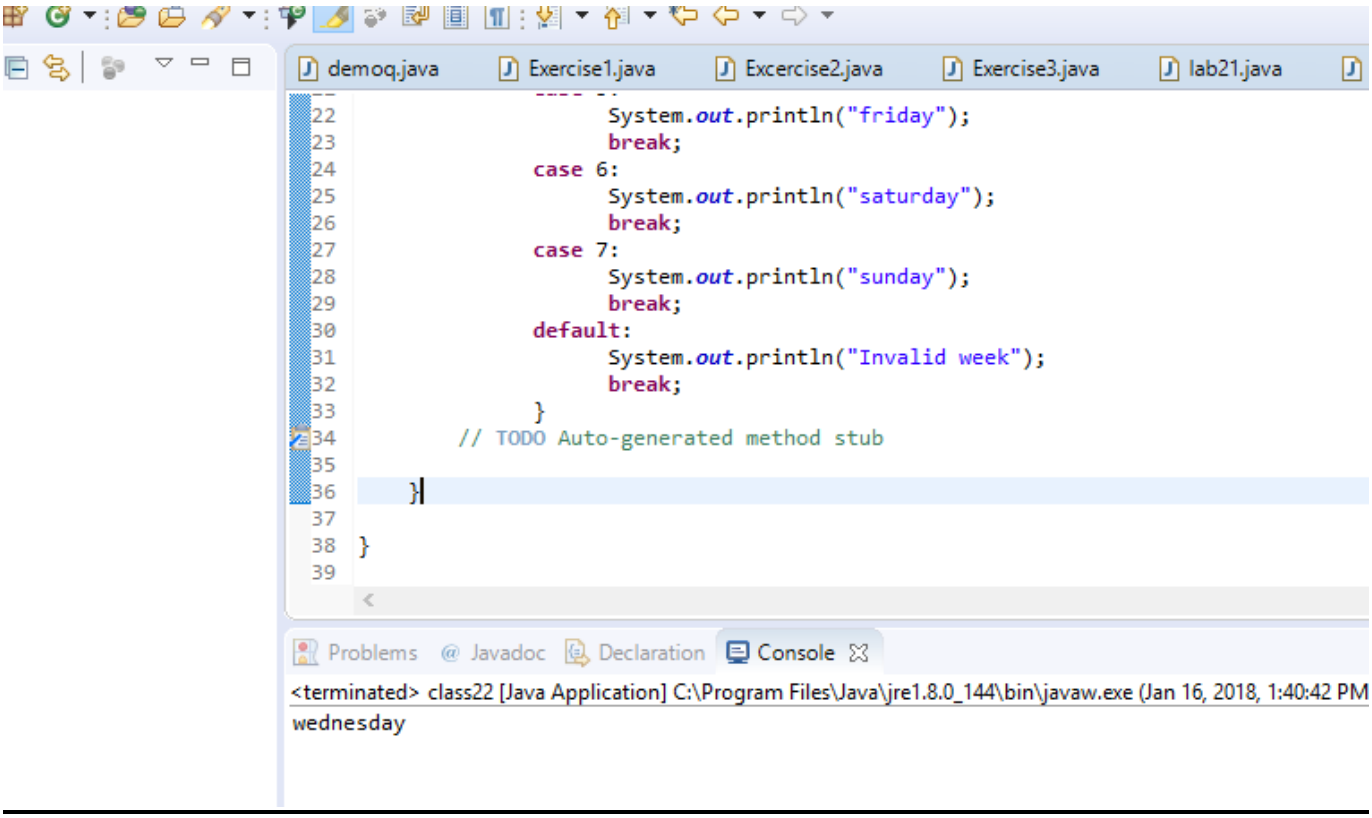
Problem Statement:- Write a Java program to print a week's day name using switch case statement.

Code:-

```
package pro2;

public class class22 {

	public static void main(String[] args) {
		int week = 3;

		  switch (week){
		      case 1:
				System.out.println("monday");
				break;
		      case 2:
```

```
                        System.out.println("tuesday");
                        break;
                  case 3:
                        System.out.println("wednesday");
                        break;
                  case 4:
                        System.out.println("thursday");
                        break;
                  case 5:
                        System.out.println("friday");
                        break;
                  case 6:
                        System.out.println("saturday");
                        break;
                  case 7:
                        System.out.println("sunday");
                        break;
                  default:
                        System.out.println("Invalid week");
                        break;
                  }
            // TODO Auto-generated method stub

      }

}
```

Screenshot:-



9) Objective: Use of switch case statement.

Problem Statement:- Write a Java program that should declare an int named day whose value represents a day(1-7). The code should display the name of the day, based on the value of day, using the switch statement.

Test data:-
day=2

Sample ouput for above test data:-

Tuesday

10) Objective: Use of switch case statement.

Problem Statement:- Write a Java program that should declare an int named day whose value represents a day(1-7).The code should display the name of the day and the condition: - like Weekday (if number entered is between 1-5), and Weekend (if number entered is between 6 or 7) using the switch statement.

Test data:-
day=2

Sample ouput for above test data:-

Tuesday is a Weekday

11) Objective: Use of switch case statement.

Problem Statement:- Write a Java program that should declare an string branch named CSE,ECE and ME and int year=2.

Sample ouput for above test data:-

If year =2 and branch= CSE then output should be

elective courses : Machine Learning, Big Data

If year =2 and branch= ECE then output should be

elective courses : Advance math's, English

12) Objective: Use of switch case statement.

Problem Statement:- Write a Java program program named **switchdemo1** which declares an **int** named **month** whose value represents a month out of the year. The program should display the name of the month, based on the value of month, using the **switch** statement.

Test data:-
month=3

Sample ouput for above test data:-

```
March
```

13) **Objective:** Use of switch case statement.

Problem Statement:- Write a Java program program named **switchdemo2** which declares
Test data:-

```
        int month = 2;
        int year = 2016;
        int numDays = 0;
```

an **int** named **month, numDays**(number of days) and **year**. The program should display number of days in the given month of the following year using the **switch** statement.

Sample ouput for above test data:-

```
   Number of Days = 29
```