Lab-1

1. Write a Java program to declare the variables of following datatypes, to initialise the values for all variables and to display the same:

Char

Byte

Short

Int

Long

Float

Double

2. Write a java program to get your first name and last name from command line arguments and print the same.

3. Write a Java program to print the result of the following operations.
a. -5 + 8 * 6

b. (55+9) % 9

c. 20 + -3*5 / 8

d. 5 + 15 / 3 * 2 - 8 % 3

4. Find the area of the circle when radius is given as command line argument, and utilize the java.lang.Math for PI value.

5. Write a java code for possible extrinsic type conversions on JAVA datatypes.

Lab-2

6. Write a java code for finding the area of the rectangle by getting the height and width from user.

7. Create a class in java called Calculator, declare two float variables and four member functions namely Add() for addition, Sub() for subtraction, Mul() for multiplication and Div() for division. Perform appropriate operations by getting two float values from user and calling the methods from another class called Example by creating object of class Calculator.

8. Write a Java code to get employee ID(6-digits), Employee Name and Employee Designation for 5 employees using classes and Array of Objects concept.

9. Write a java code to get two values of Name, Age and ID from the user using BufferedReader and InputStreamReader packages.

Lab-3

10. Write a java code to get First Name, Last name, and age of two persons from the user and display whether they are in same generation on not (if age difference is less than 15, same generation) along with their names.

11. Write a java code to display the truth table of logic gates using logical operators as shown below.

P	Q	AND	OR	XOR	NOT
true	true	true	true	false	false
true	false	false	true	true	false
false	true	false	true	true	true
false	false	false	false	false	true

Use the following '\t' escape sequence to create proper space.

```
System.out.println("P\tQ\tAND\tOR\tXOR\tNOT");
```

12. Print the ASCII values of the letters present in your name.

Lab-4

1. Write a Grade calculation program. Input to be taken as marks scored out of 100 in 5 subjects of a student. In case a student scores less than 50%, award him 'D' grade. If marks are between 50% & 60% then 'C' grade. If marks are between 60% and 80% then 'B' grade , otherwise if marks are between 80% and 100% then 'A' grade. (Do it using if & else if statements.)

2. Repeat the above program using a 'Switch' statement.

3. Write a program that will get 'hour', 'minute' and 'second' of the current timing from your PC. And will print the message 'Good Morning' in case hour is less that 12 noon, it will print 'Good afternoon' if hour is between 12 & 6 p.m. and will print 'Good evening' otherwise. Also it should print the current time.

Lab-5

1. Write a program to check the divisibility of an integer by 3. Your program must make use of the fact that an integer is divisible by 3 if and only if the sum of its digits is divisible by 3. You must use this fact repeatedly, till the sum reduces to

a single digit. For example, 123456789 is divisible by 3 if and only if 1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 + 9 = 45 is divisible by 3. Now, 45 is divisible by 3 if and only if 4 + 5 = 9 is divisible by 3. Observe that 9 is a single digit and is divisible by 3. Therefore, your program concludes that 123456789 is divisible by 3.

2. Write a Java program to print sum of the squares of first n natural numbers.

3. Write a Java program to find the maturity value of a principal(P) due to the rate of compound interest(r).

Lab-6

1. Get a string from the user and perform the following
(i) Take the last char and return a new string with the last char added at the front and back.("bat""tbatt")
(ii) Return a new string where the first and last chars have been exchanged. ("bat""tab")

2. Write a Java Program to sort the string in a given array.

Lab -7

1. Write a program to receive an integer number as a command line argument, and print the binary, octal and hexadecimal equivalent of the given number using Wrapper Class.

Sample Output: java Test 20
Given Number :20
Binary equivalent :10100
Octal equivalent :24
Hexadecimal equivalent :14

2. Write a Java code to find the distance from VIT University to major cities of India.
Hint: Create String array of major cities and integer array of distances. User gives the city name and the same is searched (use binary search) in the respective array and displays result.)

3. Consider an int array first with possibly repeated values given by the user. Create a new array second that has each number in the first appear exactly once in their order of appearance. Display the second array.
For example, if values in first are 10, 20, 6, 7, 10, 8, 5, 6, 4, 7, 1, then the second has 10, 20, 6, 7, 8, 5, 4, 1.

Lab-8

Create a class named Employee. Include data fields to hold the Employee's first name, last name, and hourly pay rate. Create an array of five Employee objects. Prompt the user to enter data for each Employee. Then prompt the user for the number of an Employee to view (1 through 5), and display the corresponding Employee's data.

Create a class named Employee. Include data fields to hold the Employee's ID number, first name, last name, and hourly pay rate. Create an array of five Employee objects. Prompt the user to enter data for each Employee. Do not allow duplicate ID numbers to be entered. Then prompt the user to choose whether to search for an Employee by (1) ID number, (2) last name, or (3) hourly pay. After the user chooses the field on which to search, prompt the user for the search value. Display an error message if there is no Employee with matching criteria, otherwise display all the data for every matching Employee (more than one Employee might have the same last name or pay rate)