List of Practical

Course: BCA

Subject Name and Code: Programming in Java Lab (BCAC 0819)

Year/Semester: II/III

Objective: The objective of this course is that the students will understand fundamentals of programming such as variables, conditional and iterative execution, methods, etc. It will also provide the foundation of good programming skills by discussing key issues to the design of object oriented programming.

Experiment 1: (If Else)

Compulsory:

Program 1: WAP to print a message "Hello JAVA".

Program 2: Write a program to display whether a number is even or odd.

Program 3 Write the following program using if else if ladder. Accept an hour from the user and output the following as indicated below. Include the last condition in the else section.

i) Hour greater than or equal to 0 and less than 12	"Good Morning"
ii) Hour greater than or equal to 12 and less than 18	"Good Afternoon"
iii) Hour greater than or equal to 18 and less than 24	"Good Evening"
iv) Any other input	"Time is out of range"

Additional Programs:

Program 4 : A student receives marks in three subjects. The program will calculate the total marks, average marks, and determine the grade based on the average:

Average >= 90: Grade A
Average >= 80 and < 90: Grade B
Average >= 70 and < 80: Grade C
Average >= 60 and < 70: Grade D
Average < 60: Grade

Experiment 2: Nested If Else

Compulsory:

Program 1: : WAP to find maximum of three numbers

Program 2: A movie theatre has the following ticket pricing rules:

Children under 12 years old pay $5.
Seniors 65 years and older pay $7.
Regular adults (12-64 years old) pay $10.
Members get a $2 discount on all ticket prices.
We'll prompt the user to input their age and whether they have a membership card. Based on this input, the program will determine and print the ticket price.

Program3: Create a program using switch case statement to identify the day of the week.

Additional Programs:

Program3: WAP to implement that performs basic arithmetic operations (addition, subtraction, multiplication, division) based on user input. use switch to select the arithmetic operation

Experiment 3: Simple and Nested Loop

Compulsory:

Program1 : Write a Program in Java to Calculate the Factorial of an Integer using a for loop

Program 2: You are tasked with developing a program that simulates a login system. The user is given three attempts to enter the correct password (In integer format eg. 4545). If the user enters the correct password within three attempts, they are granted access. If the user fails to enter the correct password in three attempts, they are locked out.

Additional Programs:

Program 3: WAP to display table of a number in a format n x i=m

Program 4: WAP to find sum of digits of a number

Program 5: WAP to implement type conversion in java.

Experiment 4: Patterns

Compulsory:

Program 1: Using For…..Loop display the following pattern :

```
*
**
***
****
*****
```

Program 2: WAP to print the pattern

```
11111
12111
11311
11141
11115
```

Additional Programs:

Program3: WAP to print the pattern

```
11111
12111
12311
12341
12345
```

Program 4: WAP to print the pattern

```
#####
$####
$$###
$$$##
$$$$#
```

Experiment 5: Array

Compulsory:

Program 1: WAP to read and print an array. Also find greatest and smallest element in array.

Program 2: You're developing a simple scoring system for a cricket match. The match involves a single over (6 balls) and you're required to record the runs scored on each ball. The system should also calculate the total runs scored in the over and determine if the over included any dot balls (a ball where no runs are scored).

Task:

Create a 1-dimensional array to store the runs scored on each of the 6 balls in the over.
Calculate the total runs scored in the over.
Count the number of dot balls (balls where zero runs were scored).
Determine the highest run scored on a single ball.

Runs scored in the over (ball by ball):

Ball 1: 1 run
Ball 2: 4 runs
Ball 3: 0 runs (dot ball)
Ball 4: 6 runs
Ball 5: 2 runs
Ball 6: 0 runs (dot ball)

Additional Programs:

- Program 4: Write a program to search an element in an array.
- Program 5: Write a program to sort an array using bubble sort.
- Program 6: WAP to read and print a matrix
- Program 7: WAP to find sum of two matrices

Experiment 6: Strings

Compulsory:

Program1: Write a Java program that will accept command-line arguments and display the same.

Program2: You are developing a simple application to manage the player lineup for a football (soccer) match. The coach needs to maintain a list of the starting 11 players for the match. After finalizing the lineup, the coach wants to:

Display the names of all the players in the starting lineup.
Check if a specific player is in the starting lineup.
Update the lineup by replacing a player who got injured during the warm-up with a substitute.
Task: