MODULE 4

Q No	Question
1	Write a program to print "Good morning" and "Welcome" continuously on the screen in Java using threads.Add a step method in the welcome thread of question 1 to delay its execution for 200ms.
2	Demonstrate gerPriority() and setPriority() methods in Java threads.
3	Write a Java program to create and start multiple threads that increment a shared counter variable concurrently.
4	Write a Java program that uses the CountDownLatch class to synchronize the start and finish of multiple threads.
5	Write a Java program that utilizes the Exchanger class for exchanging data between two threads.
6	Write a Java program to create a generic method that takes a list of any type and returns it as a new list with the elements in reverse order.
7	Write a Java program to create a generic method that takes two arrays of the same type and checks if they have the same elements in the same order.
8	Write a Java program to create a generic method that takes a list of numbers and returns the sum of all the even and odd numbers.
9	Write a Java program to create a generic method that takes two lists of the same type and merges them into a single list. This method alternates the elements of each list.
10	Write a Java program that creates two threads to find and print even and odd numbers from 1 to 20.
11	Develop a JAVA Program to find the factorial of a number using multithreading.
12	Design a package that defines different shapes (circle, square, triangle) and their area calculation methods. Use this package in a program to calculate and display areas of various shapes.

13	Create a user-defined package for handling file operations, including reading, writing, and searching for specific content within files.
14	Create a Java program to demonstrate the basic use of threads by creating and running threads. One thread finds the sum of all odd numbers and another finds the sum of all even numbers. Create a thread that generates 10 random numbers from 1 to 20.
15	Create a package for managing student records. Define a class for a student with attributes like name, roll number, and marks. Use this package to create a program that stores student records, displays a list of students, and searches for students by roll number.
16	Build a package for managing a library catalog. Create classes for books and magazines, including attributes like title, author, and publication date. Use this package in a program to add, remove, and display library items.
17	Create a user-defined package for managing employee details. Define a class for employees with attributes like name, employee ID, and salary. Use this package in a program to store and retrieve employee details.
18	Implement a program that simulates a bank account with a balance. Create multiple threads to deposit and withdraw money. Use thread synchronization to ensure that account balance is updated safely.
19	Write a Java program that creates and starts two threads. One thread should print even numbers from 2 to 10, and the other should print odd numbers from 1 to 9. Ensure that the threads execute concurrently.
20	Create a program that simulates a countdown timer using a thread. The program should prompt the user to enter a number of seconds. Then, create a thread that counts down from the specified seconds to 1, with a one-second delay between each count. Display the remaining seconds on the console.
21	Create a user-defined package called ***utilities*** with a class ***MathFunctions*** inside it. The ***MathFunctions*** class should contain methods for basic arithmetic operations (addition, subtraction, multiplication, and division). Then, create a Java program in a separate directory that imports the ***utilities*** package and uses the ***MathFunctions*** class to perform arithmetic operations.
22	Develop a user-defined package called ***fileio*** with a class ***FileHandler***. The ***FileHandler*** class should have methods for reading and writing text files. Create a Java program that uses the ***fileio*** package to read a text file and write its contents to another file.
23	Design a user-defined package called ***customgraphics*** that includes a class

	DrawingTool. The DrawingTool class should provide methods for drawing simple shapes, such as circles and rectangles, using Java's graphics capabilities. Create a Java program that imports the ***customgraphics*** package and uses the ***DrawingTool*** class to draw a custom graphic.
24	Develop a user-defined package called ***datetime*** with a class ***DateUtils***. The ***DateUtils*** class should contain methods for working with date and time, such as calculating the difference between two dates or formatting date/time in a specific way. Create a Java program that uses the ***datetime*** package to perform date and time operations.
25	Develop a Java program that simulates a simple digital clock. Implement a thread that updates and displays the current time every second. Utilize the ***sleep*** method to control the timing of the updates.
26	Create a Java program that mimics a traffic signal. Implement threads representing different directions. Control the traffic signal using the ***sleep*** method to simulate the red, yellow, and green lights' timing.
27	Develop a Java program that simulates a countdown timer. Implement a thread that counts down from a specified time (e.g., 10 seconds) and displays the time left. Use the ***sleep*** method to control the timing of the countdown.
28	Create a Java program that simulates a simple bank account management system. Implement multi-threading to allow concurrent deposits and withdrawals while ensuring data consistency.
29	Write a Java program that models a restaurant with a limited number of tables. Use threads to represent customers who need a table. Employ the ***wait*** and ***notify*** methods to manage table allocation when tables become available.
30	Write a Java program for a stock trading simulation. Use threads to represent buyers and sellers. Pause and resume threads using ***suspend*** and ***resume*** to mimic trading activity in the market.
31	Write a Java program that creates two threads to find and print even and odd numbers from 1 to 20.
32	Write a Java program that sorts an array of integers using multiple threads
33	Write a Java program that creates a bank account with concurrent deposits and withdrawals using threads.
34	Write a Java program to create and start multiple threads that increment a shared counter variable concurrently

35	**Program to implement thread using runnable interface**
36	Program for producer consumer problem
37	Write java program to set priorities of thread
38	Program to stop thread execution with ctrl+c
39	Program to print Fibonacci & reverse series using thread
40	Write a Java program to interrupt the execution of a thread