

# WEB ENGINEERING

**Course Instructor: Razi Ahmed**

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## LAB 04

### File Handling & Multi-Threading

#### **Note:**

- Student collaboration is not allowed.
- Copying from or looking at solutions from other sources is strictly prohibited.
- Violations will not be excused and may result in an F in the course.
- Stay honest.

#### **TASK # 1**

Write a java program that takes input string from user and writes it into a file and then finds all the palindrome words of the string in the file and displays them.

#### **TASK # 2**

**(a)** Write a class name “FileClass” in which you have to take the filename as an input from the user.

Check if the file is already exists if not then create a file with the name specified by the name user provided.

Now check if the file is empty throw an exception, if not empty then read the content.

Read content from a file name “File.txt” and copy this content to the file you created. Then read the file you created.

This file contains the main menu of a Mathematical Operations. Main Menu will be like

Press the related key to perform the action:

1. Find a Factorial of the maximum number.
2. Check how many numbers are prime.
3. Check how any number are odd and even.
4. Exit

**(b) Write Functions:**

- Now when user press 1, find the factorial for this you have to write a function that takes an integer as an input and find its factorial.
- Now when user press 2 find the how many numbers are prime for this you have to write a function that take array of integers and return the count of prime numbers.
- Write a function that takes an array of integers and find number of Odds and Evens. And return a string that tell how many even or odd numbers are there.

**(c) File Writing:**

- Show the Results on console.

Save the

- Factorial
- Count of prime numbers
- Number of odds and evens in a separate file named as "Task\_1\_Results".

You have to take care whether the file already exists or not. Throw exception in case of file not found or file not created or file empty.

## **TASK # 3**

Create two threads, one displays even numbers from 0 to 10 and other displays odd numbers from 1 to 10

## **TASK # 4**

Create a class MyThread which implements the Runnable.

```
String t_name;
```

Thread t;

Create a parameterized constructor of class "MyThread".

**In MyThread (string t\_name);**

- -initialize the thread name.
- -create the thread by calling the constructor of "Thread" class with the thread name.
- -display the thread information
- -start the thread

Override the **run()** method which is the entry point for the thread. Handle the run method using try catch exception.

-Try will display the loop number with delay of half second (use Thread.sleep).

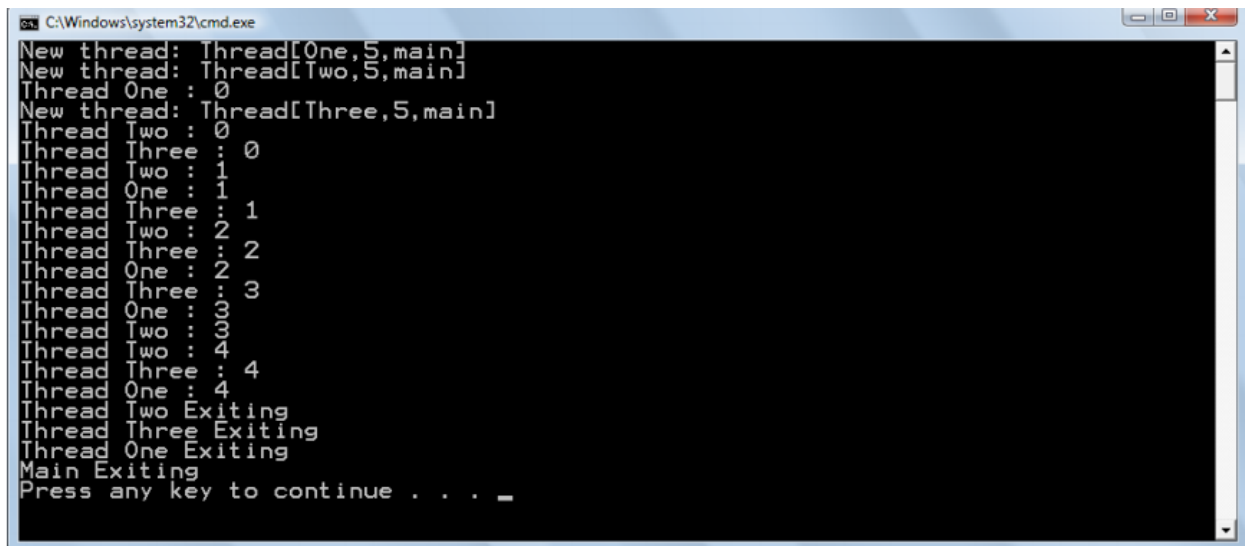
**System.out.println("thread " + t\_name + ":" + i);**

-Catch will handle the InterruptedException and display the thread name of the existing thread.

**System.out.println("thread " + t\_name + "Existing");**

In main method create three objects of **MyThread** class. Using try catch make the Thread sleep for 10 sec.

**Output:**



```
C:\Windows\system32\cmd.exe
New thread: Thread[One,5,main]
New thread: Thread[Two,5,main]
Thread One : 0
New thread: Thread[Three,5,main]
Thread Two : 0
Thread Three : 0
Thread Two : 1
Thread One : 1
Thread Three : 1
Thread Two : 2
Thread Three : 2
Thread One : 2
Thread Three : 3
Thread One : 3
Thread Two : 3
Thread Two : 4
Thread Three : 4
Thread One : 4
Thread Two Exiting
Thread Three Exiting
Thread One Exiting
Main Exiting
Press any key to continue . . . _
```