

Learning Java 9 : Databases and Multithreading in Java

User Assignment-4

Problem Statement:

1. Write a java program to create a thread by using Thread class and also by using the Runnable interface and display the details of thread like, thread name, id, priority, its phase and other details.
2. Write a java program to create three different threads, with first thread displaying numbers from 101 to 200, second from 201 to 300 and third one from 301 to 400 and verify that all the threads are running simultaneously or not.

1.)

```
Threadclass.java × ThreadClass_RunnableThread.java currentthreadexp.java
1 package com.question4;
2 import java.util.*;
3 class Threadclass extends Thread{
4     private String name;
5     public synchronized void run() {
6         System.out.println("executing run method from Thread (Thread Name): "+Thread.currentThread().getName());
7         System.out.println("executing run method from Thread (Thread Id): "+Thread.currentThread().getId());
8         System.out.println("executing run method from Thread (Thread Priority): "+Thread.currentThread().getPriority());
9         System.out.println("Phase of Thread in Thread class: "+Thread.currentThread().getState());
10    }
11 }
12 class Runnableinterface implements Runnable{
13     public synchronized void run() {
14         System.out.println("executing run method from Runnable: "+Thread.currentThread().getName());
15         System.out.println("executing run method from Runnable: "+Thread.currentThread().getId());
16         System.out.println("executing run method from Runnable: "+Thread.currentThread().getPriority());
17         System.out.println("Phase of Thread in Runnable class: "+Thread.currentThread().getState());
18    }
19 }
20 }
```

```
Threadclass.java ThreadClass_RunnableThread.java × currentthreadexp.java
1 package com.question4;
2
3 public class ThreadClass_RunnableThread{
4     public static void main(String[] args) {
5         int id;
6         System.out.println("main name: "+Thread.currentThread().getName());
7         System.out.println("main id: "+Thread.currentThread().getId());
8         System.out.println("main priority: "+Thread.currentThread().getPriority());
9         Threadclass t = new Threadclass();
10        t.start();
11        System.out.println("main method name: "+Thread.currentThread().getName());
12        System.out.println("main method id: "+Thread.currentThread().getId());
13        System.out.println("main method priority: "+Thread.currentThread().getPriority());
14        Runnable r = new Runnableinterface();
15        Thread t1 = new Thread(r);
16        t1.start();
17    }
18 }
19 }
```

```

Console x
<terminated> ThreadClass RunnableThread [Java Application] C:\Program Files\Java\jdk-17.0.2\bin\javaw.exe (Mar 28, 2022, 11:03:58 AM – 11:03:58 AM)
main name: main
main id: 1
main priority: 5
main method name: main
main method id: 1
main method priority: 5
executing run method from Thread (Thread Name): Thread-0
executing run method from Thread (Thread Id): 14
executing run method from Thread (Thread Priority): 5
Phase of Thread in Thread class: RUNNABLE
executing run method from Runnable: Thread-1
executing run method from Runnable: 15
executing run method from Runnable: 5
Phase of Thread in Runnable class: RUNNABLE

```

2.)

```

*first.java x *two.java *three.java Three_thread_running_simultaneously.java
1 package com.question4.second;
2
3 class first extends Thread{
4     int i;
5     public void run() {
6         for(i=101;i<=200;i++) {
7             System.out.println("first : "+i);
8             try {
9                 Thread.sleep(500);
10            }
11            catch (InterruptedException e) {
12                e.printStackTrace();
13            }
14        }
15    }
16 }
17

```

```

*first.java *two.java x *three.java Three_thread_running_simultaneously.java
1 package com.question4.second;
2
3 class two extends Thread{
4     int i;
5     public void run() {
6         for(i = 201;i<=300;i++) {
7             System.out.println("two : "+i);
8             try {
9                 Thread.sleep(500);
10            }
11            catch (InterruptedException e) {
12                e.printStackTrace();
13            }
14        }
15    }
16 }
17

```

```
*first.java  *two.java  *three.java ×  Three_thread_running_simultaneously.java
1 package com.question4.second;
2
3 class three extends Thread{
4     int i;
5     public void run()
6     {
7         for(i=301;i<=400;i++)
8         {
9             System.out.println("three : "+i);
10            try {
11                Thread.sleep(500);
12            } catch (InterruptedException e) {
13                // TODO Auto-generated catch block
14                e.printStackTrace();
15            }
16        }
17    }
18 }
19
```

```
*first.java  *two.java  *three.java  Three_thread_running_simultaneously.java ×
1 package com.question4.second;
2
3 public class Three_thread_running_simultaneously {
4     public static void main(String arg[]) throws InterruptedException
5     {
6         first f=new first();
7         f.start();
8
9         Thread.sleep(10);
10        two t=new two();
11        t.start();
12        Thread.sleep(10);
13
14        three t1=new three();
15        t1.start();
16
17
18
19    }
20
```

Console ×

<terminated> Three_thread_running_simultane

first : 101

two : 201

three : 301

first : 102

two : 202

three : 302

first : 103

two : 203

three : 303

first : 104

two : 204

three : 304

first : 105

two : 205

three : 305

first : 106

two : 206

three : 306

first : 107

two : 207

three : 307

first : 108

two : 208

three : 308

first : 109

two : 209

three : 309

first : 110

two : 210

three : 310

first : 111

two : 211

three : 311

first : 112

two : 212

three : 312

first : 113

two : 213

three : 313

first : 114

two : 214

three : 314