Nepathya College
Tilottama-5, Rupandehi

Object Oriented Programming in Java
Lab 7

Objective: To learn concepts of thread, thread creation using Thread class and Runnable interface, thread execution and Interthread communication.

Descriptions:

- **Refer theory from the slides.**

Program

Note: The program should be well formatted i.e., proper use of indentation, comment, description of program and functions etc.

1. Use the concept of creating thread by extending the Thread class to convert the following program that prints the output in the interval of 1 second.

```
class Hi{
	public void show(){
		for(int i = 1; i<=5; i++){
			System.out.println("HI");
		}
	}
}
public class ThreadDemo {
	public static void main(String[] args) {
		Hi obj1 = new Hi();
		obj1.show();
	}
}
```

OUTPUT

```
HI - 1
HI - 2
HI - 3
HI - 4
HI - 5
```

2. Write a java program to show the inter-thread communication.(Use both concept of creating a thread by using Thread class and Runnable interface).

3. Use the concept of creating thread by implementing the Runnable interface to convert the above program and prints the output in the interval of 1 second.

4. Run the following program and learn the concept of thread priority.

```
class myThread extends Thread{
public void run()
   {
      System.out.println("Inside run method");
   }
}
public class threadpriorites {
        public static void main(String[] args) {
        myThread t1 = new myThread();
        myThread t2 = new myThread();
        myThread t3 = new myThread();

        System.out.println("t1 thread priority : " + t1.getPriority()); // Default 5
        System.out.println("t2 thread priority : " + t2.getPriority()); // Default 5
        System.out.println("t3 thread priority : " + t3.getPriority()); // Default 5

        t1.setPriority(2);
        t2.setPriority(5);
        t3.setPriority(8);

        // t3.setPriority(21); will throw IllegalArgumentException
        System.out.println("t1 thread priority : " + t1.getPriority());  //2
        System.out.println("t2 thread priority : " + t2.getPriority()); //5
        System.out.println("t3 thread priority : " + t3.getPriority());//8

   // Main thread
   System.out.print(Thread.currentThread().getName());
   System.out.println("Main thread priority : "+ Thread.currentThread().getPriority());

        // Main thread priority is set to 10
   Thread.currentThread().setPriority(10);
        System.out.println("Main thread priority : "+ Thread.currentThread().getPriority());
   }
}
```

5. Make a thread using runnable interface to display number from 1 to 20; each number should be displayed in the interval of 20 seconds.

6. Create two classes ThreadA and ThreadB which implements Runnable interface. ThreadA displays all even numbers from 50 to 100 and Thread B displays all odd numbers from 100 to 200. Define a main class which creates the objects of the both the classes and displays the numbers as per the above mentioned specifications.