CSA0992 - PROGRAMMING IN JAVA.

CLASS TEST - 2

K. V. Sai Sanjana
192011124, CSE

① **INTER THREAD COMMUNICATIONS IN JAVA:-**

* Inter thread communication is all about allowing synchronized threads to communicate with each other.

* Inter thread communication is a mechanism in which a thread is paused running in the critical section and the other thread is allow to enter in the same critical section to be executed.

* It is implemented by the following methods of object class.
  * wait()
  * Notify()
  * Notify-All().

* Inter-thread communication is also known as cooperation in Java.

EXAMPLE OF INTER THREAD COMMUNICATION

```
// In this program, we will understand how to use wait and notify
public class A
{
 int i;
 boolean flag= false;
 Synchronized void deliver (int i)
 {
  if (flag)
   try
   {
    wait(); // wait till a notification is received from Thread 2.
   }
   catch (Interrupted Exception ie)
   {
    System.out.println(ie);
   }
   this.i = i;
   flag=true;
   System.out.println("Data Delivered: " +i);
   notify();
  }
  Synchronized int receive()
  {
   if(!flag)
   try{
    wait();
   }
   catch(Interrupted exception ie){
    System.out.println(ie);
   }System.out.println("DataReceived:" +i);
   flag= false;
   notify()
   return i;
  }
}
Public class Thread1 extends Thread
{
 A obj;
 Thread1(A obj)
 {this.obj=obj;}
 Public Class communication {
 Public static Void main (String[] Jays)
 {A obj = new A();
  Thread t1 = new Thread1(obj);
  Thread t2 = new Thread2(obj);
  t1.start()
  t2.start()
 }}
```

(2) JAVA Program To Demonstrate all Thread States.

* A thread is a path of Execution in a program that goes through the following states of a thread.

The five states of thread are :

- -> New
- -> Runnable
- -> Running
- -> Blocked
- -> Dead.

EXAMPLE (ThreadDemo.java)

```
Class Thread1 extends Thread
{
 public void run()
 {
System.out.println("Thread1");
System.out.println("i in Thread1");
for(int i=1; i<5; i++)
}
System.out.println("i:" +i);
try
{
Thread.sleep(1000);
}
catch(InterruptedException e)
 {
  e.printStackTrace();
}}
System.out.println("Thread1
                    completed");
}
}
  Class Thread2 extends Threads
{
 public void run()
{
System.out.println("Thread2");
System.out.println("i is Thread 2");
for(int i=1; i<5; i++)
{
 System.out.println("i="+i);
 }
System.out.println("Thread 2
                    Completed");
  }
 }
Public class ThreadDemo
{
public static void main(String[]
                    args){
Thread1 t1 = new Thread1();
Thread2 t2 = new Thread2();
t1.start();
t2.~~Start~~Yield();
try
{t1.sleep(1000);
}
catch(InterruptedException e)
{
 e.printStackTrace();
}
t2.start();
System.out.println("Main Thread
                    End");
}
}
```