FALL SEM - (2020 – 21)

CSE2005

LAB – 10

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SLOT : L5

Write a program to show interthread communication by creating two classes (Customer and Test). In Customer class create two methods (deposit and withdraw). Create a final object for Customer class to create three threads to access the methods. Using Synchronisation ensure that no two threads can call the same method at a time.

Output:

Available Balance: 10000
About to withdraw: 15000
Insufficient Balance –Need to Deposit.
About to deposit: 10000
Available Balance: 20000
Transaction completed.

Detected amount: 15000
Balance amount: 5000
About to deposit 10000
Available Balance: 15000
Transaction completed.

CODE:

```java
class Customer{
  public int amount = 10000;
  synchronized void withdraw(int amount){
      System.out.println("Available Balance :"+this.amount);
      System.out.println("About to withdraw :"+amount);
      if(this.amount < amount){
        System.out.println("Insufficient Balance - Need to Deposit");
        try{
          this.wait();
        }
        catch(Exception e){
          System.out.println("An Interruption is occured");
        }
      }
      this.amount -= amount;
      System.out.println("Detected amount :"+amount);
      System.out.println("Balance amount :"+this.amount);
  }
  synchronized void deposit(int amount){
      System.out.println("About to deposit :"+amount);
      this.amount += amount;
      System.out.println("Available Balance :"+this.amount);
      System.out.println("Transaction completed.\n");
      notifyAll();
  }
```

```java
}
class Main {
  public static void main(String[] args) {
    final Customer customer = new Customer();
    new Thread(){
      public void run(){
        customer.withdraw(15000);
      }
    }.start();
    new Thread(){
      public void run(){
        customer.deposit(10000);
      }
    }.start();
    new Thread(){
      public void run(){
        customer.deposit(10000);
      }
    }.start();
  }
}
```

OUTPUT:

```
Available Balance :10000
About to withdraw :15000
Insufficient Balance - Need to Deposit
About to deposit :10000
Available Balance :20000
Transaction completed.

Detected amount :15000
Balance amount :5000
About to deposit :10000
Available Balance :15000
Transaction completed.



...Program finished with exit code 0
Press ENTER to exit console.
```