

Java Lab 9

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Qn 1,

Code:

```
import java.util.Scanner;
class Account extends Thread {
    private String accountNumber;
    private double balance;
    private String accountHoldername;
    public Account() {
        accountNumber = "";
        balance = 0.0;
        accountHoldername = "";
    }
    public Account(String accountNumber, double balance, String
accountHoldername) {
        this.accountNumber = accountNumber;
        this.balance = balance;
        this.accountHoldername = accountHoldername;
    }
    public String getAccountNumber() {
        return accountNumber;
    }
    public void setAccountNumber(String accountNumber) {
        this.accountNumber = accountNumber;
    }
    public double getBalance() {
        return balance;
    }
}
```

```

    public void setBalance(double balance) {
        this.balance = balance;
    }

    public String getAccountHoldername() {
        return accountHoldername;
    }

    public void setAccountHoldername(String accountHoldername) {
        this.accountHoldername = accountHoldername;
    }

    @Override
    public void run() {
        double interest;
        if(balance >= 10000) {
            interest = balance * 0.08;
        } else {
            interest = balance * 0.05;
        }

        System.out.printf("%.2f\n", interest);
        System.out.printf("%.2f\n", balance + interest);
    }
}

public class qn1 {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        int n = sc.nextInt();
        Account[] accounts = new Account[n];

        for(int i = 0; i < n; i++) {
            String accNum = sc.next();
            double bal = sc.nextDouble();
            String name = sc.next();
            accounts[i] = new Account(accNum, bal, name);
            accounts[i].start();
        }
    }
}

```

```

        sc.close();
    }
}

```

Output:

```

cd "/home/crimsonshadow/Praneesh/Academics/Sem4/Java Programming Lab/Lab9/" && javac qn1.java && java qn1
(crimsonshadow@CrimsonShadow) - [~/Praneesh/Academics]
$ cd "/home/crimsonshadow/Praneesh/Academics/Sem4/Java Programming Lab/Lab9/" && javac qn1.java && java qn1
2
3256858548
50000
mahesh
4000.00
54000.00
3568458545
5000
jegadheesh
250.00
5250.00

```

Qn2, Code:

```

import java.util.*;

class CharCounter extends Thread {
    private String str;
    private HashMap<Character, Integer> freqMap;

    public CharCounter(String s) {
        str = s;
        freqMap = new HashMap<>();
    }

    public void run() {
        for(char c : str.toCharArray()) {
            freqMap.put(c, freqMap.getOrDefault(c, 0) + 1);
        }
    }
}

```

```

        // Print frequency for this thread
        for(Map.Entry<Character, Integer> entry :
freqMap.entrySet()) {
            System.out.print(entry.getKey() + " " +
entry.getValue() + " ");
        }
        System.out.println();
    }
}

public class qn2 {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        int n = sc.nextInt();
        sc.nextLine(); // consume newline

        CharCounter[] threads = new CharCounter[n];

        // Create and start threads
        for(int i = 0; i < n; i++) {
            String str = sc.nextLine();
            threads[i] = new CharCounter(str);
            threads[i].start();
        }

        // Wait for all threads to complete
        try {
            for(CharCounter thread : threads) {
                thread.join();
            }
        } catch(InterruptedException e) {
            System.out.println("Thread interrupted");
        }

        sc.close();
    }
}

```

```
}  
}
```

Output:

```
cd "/home/crimsonshadow/Praneesh/Academics/Sem4/Java Programming Lab/Lab9/" && javac qn2.java && java qn2  
(crimsonshadow@CrimsonShadow) - [~/Praneesh/Academics]  
$ cd "/home/crimsonshadow/Praneesh/Academics/Sem4/Java Programming Lab/Lab9/" && javac qn2.java && java qn2  
2  
welcome  
c1 e2 w1 l1 m1 o1  
java  
a2 v1 j1
```

Qn3,

COde:

```
import java.util.*;  
import java.text.DecimalFormat;  
  
class ItemType extends Thread {  
    private String name1;  
    private double deposit;  
    private double costPerItem;  
    private int noOfItems;  
  
    public ItemType() {  
        this.name1 = "";  
        this.deposit = 0.0;  
        this.costPerItem = 0.0;  
        this.noOfItems = 0;  
    }  
  
    public ItemType(String name1, double deposit, double  
costPerItem, int noOfItems) {
```

```

        this.name1 = name1;
        this.deposit = deposit;
        this.costPerItem = costPerItem;
        this.noOfItems = noOfItems;
    }
    public String getName1() {
        return name1;
    }
    public void setName1(String name1) {
        this.name1 = name1;
    }
    public double getDeposit() {
        return deposit;
    }
    public void setDeposit(double deposit) {
        this.deposit = deposit;
    }
    public double getCostPerItem() {
        return costPerItem;
    }
    public void setCostPerItem(double costPerItem) {
        this.costPerItem = costPerItem;
    }
    public int getNoOfItems() {
        return noOfItems;
    }
    public void setNoOfItems(int noOfItems) {
        this.noOfItems = noOfItems;
    }

    @Override
    public void run() {
        DecimalFormat df = new DecimalFormat("#.00");
        double totalAmount = costPerItem * noOfItems;
    }

```

```

        System.out.println(df.format(totalAmount));
    }
}

public class qn3 {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        int n = sc.nextInt();
        ItemType[] items = new ItemType[n];

        for(int i = 0; i < n; i++) {
            String name = sc.next();
            double deposit = sc.nextDouble();
            double costPerItem = sc.nextDouble();
            int noOfItems = sc.nextInt();
            items[i] = new ItemType(name, deposit, costPerItem,
noOfItems);
        }

        for(ItemType item : items) {
            item.start();
        }

        sc.close();
    }
}

```

Output:

```

cd "/home/crimsonshadow/Praneesh/Academics/Sem4/Java Programming Lab/Lab9/" && javac qn3.java && java qn3
(crimsonshadow@CrimsonShadow) - [~/Praneesh/Academics]
$ cd "/home/crimsonshadow/Praneesh/Academics/Sem4/Java Programming Lab/Lab9/" && javac qn3.java && java qn3
2
Laptop
40000
30000
10
Mobile
25000
20000
20
300000.00
400000.00

```