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**Weeek-11**

## Java Collection FrameWork

**Q1.**

```
import java.util.*;

public class Q1 {
public static void Palindrome(String s) {
int len = s.length();
String reverse = "";
for (int i = len - 1; i >= 0; i--)
reverse = reverse + s.charAt(i);

if (reverse.equals(s))
System.out.println(s + " is palindrome");
else
System.out.println(s + " is not palindrome");
}

public static void main(String[] args) {
ArrayList<String> names = new ArrayList<String>();
Scanner in = new Scanner(System.in);
System.out.println("Enter the strings : ");
for (int i = 0; i < 5; i++) {
String name = in.next();
names.add(name);
}
System.out.println("\nResult : ");
Iterator itr = names.iterator();
while (itr.hasNext()) {
String name = (String) itr.next();
Palindrome(name);
}
}
}
```

**Output :**

```
piratepanda@SastaPC:~/Documents/javalab/week11/Q1$ javac Q1.java
piratepanda@SastaPC:~/Documents/javalab/week11/Q1$ java Q1
Enter the strings :
malayalam
anupam
mom
racecar
shutter

Result :
malayalam is palindrome
anupam is not palindrome
mom is palindrome
racecar is palindrome
shutter is not palindrome
piratepanda@SastaPC:~/Documents/javalab/week11/Q1$
```

.

**Q2.**

```
import java.util.*;

public class Q2 {
static Double mean(ArrayList<Double> nums) {
Iterator itr = nums.iterator();
double len = 0d;
double sum = 0d;
while (itr.hasNext()) {
len += 1d;
sum += (double) itr.next();
}
return sum / len;
}

static Double mode(ArrayList<Double> nums) {
Iterator itr1 = nums.iterator();
double maxValue = 0d, maxCount = 0d;
while (itr1.hasNext()) {
double count = 0d;
Iterator itr2 = nums.iterator();
double i = (double) itr1.next();
while (itr2.hasNext()) {
if ((double) itr2.next() == i)
count += 1d;
}
if (count > maxCount) {
maxCount = count;
maxValue = i;
}
}
return maxValue;
}
```

```
static Double standardDeviation(ArrayList<Double> nums) {
Double meanOfNums = mean(nums);
Iterator itr = nums.iterator();
double sd = 0d;
double len = 0;
while (itr.hasNext()) {
double num = (double) itr.next();
sd += (meanOfNums - num) * (meanOfNums - num);
len += 1d;
}
return Math.sqrt(sd / len);
}

public static void main(String[] args) {
ArrayList<Double> nums = new ArrayList<Double>();
Scanner in = new Scanner(System.in);
for (int i = 0; i < 5; i++) {
Double num = in.nextDouble();
nums.add(num);
}
System.out.println("Mean is: " + mean(nums));
System.out.println("Mode is: " + mode(nums));
System.out.println("SD is: " + standardDeviation(nums));
nums.add(mean(nums));
nums.add(mode(nums));
nums.add(standardDeviation(nums));
System.out.println("\n\nThe ArrayList items are: ");
Iterator itr = nums.iterator();
while (itr.hasNext()) {
System.out.println((double) itr.next());
}
}
}
```

**Output :**

```
piratepanda@SastaPC:~/Documents/javalab/week11/Q2$ javac Q2.java
piratepanda@SastaPC:~/Documents/javalab/week11/Q2$ java Q2
10.5
2.45
5.37
3.56
9.34
Mean is: 6.244
Mode is: 10.5
SD is: 3.164203533276581


The ArrayList items are:
10.5
2.45
5.37
3.56
9.34
6.244
10.5
3.060971087743235
piratepanda@SastaPC:~/Documents/javalab/week11/Q2$
```

.

**Q3 .**

```
import java.util.*;

class Bank {
int accNo;
double balance;
String name, bank_branch_name;

public Bank(int accNo, double balance, String name, String bank_branch_name) {
this.accNo = accNo;
this.balance = balance;
this.name = name;
this.bank_branch_name = bank_branch_name;
}

public String toString() {
return "\nUser Details: \nName: " + name + "\nAccount No.: " + accNo + "\nBalance: " + balance +
"\nBranch: "
+ bank_branch_name;
}
}

public class Q3 {
public static void main(String[] args) {
```

```
Scanner input = new Scanner(System.in);
LinkedList<Bank> objs = new LinkedList<Bank>();

for (int i = 0; i < 3; i++) {
System.out.print("Enter account number: ");
int accNo = input.nextInt();
System.out.print("Enter account balance: ");
double bal = input.nextDouble();
System.out.print("Enter account holder name: ");
String name = input.next();
System.out.print("Enter Branch name: ");
String branch = input.next();
Bank acc = new Bank(accNo, bal, name, branch);
if (bal > 50000) {
objs.add(acc);
}
System.out.println();
}
System.out.println(objs);
}
}
```

**Output :**

```
piratepanda@SastaPC:~/Documents/javalab/week11/Q3$ javac Q3.java
piratepanda@SastaPC:~/Documents/javalab/week11/Q3$ java Q3
Enter account number: 1020
Enter account balance: 51000
Enter account holder name: Anupam
Enter Branch name: SBI

Enter account number: 1021
Enter account balance: 35000
Enter account holder name: jhgjh
Enter Branch name: BOB

Enter account number: 1022
Enter account balance: 52000
Enter account holder name: hjgj
Enter Branch name: ICICI

[
User Details:
Name: Anupam
Account No.: 1020
Balance: 51000.0
Branch: SBI,
User Details:
Name: hjgj
Account No.: 1022
Balance: 52000.0
Branch: ICICI]
piratepanda@SastaPC:~/Documents/javalab/week11/Q3$
```

.

**Q4.**

```
import java.util.*;

class Bank {
int accNo;
double balance;
String name, bank_branch_name;

public Bank(int accNo, double balance, String name, String bank_branch_name) {
this.accNo = accNo;
this.balance = balance;
this.name = name;
this.bank_branch_name = bank_branch_name;
}

public String toString() {
return "\nUser Details: \nName: " + name + "\nAccount No.: " + accNo + "\nBalance: " + balance +
"\nBranch: "
+ bank_branch_name;
}
}

public class Q4 {
public static void main(String[] args) {
Scanner in = new Scanner(System.in);
LinkedList<Bank> objs = new LinkedList<Bank>();
System.out.print("Branch Name : ");
String search = in.next();
System.out.println("");
int count = 0;
for (int i = 0; i < 3; i++) {
System.out.print("Account number: ");
int accNo = in.nextInt();
System.out.print("Account balance: ");
double bal = in.nextDouble();
System.out.print("Account holder name: ");
String name = in.next();
System.out.print("Branch name: ");
String branch = in.next();
Bank acc = new Bank(accNo, bal, name, branch);
if (search.equals(branch)) {
objs.add(acc);
count++;
}
System.out.println();
}
System.out.println(objs);
System.out.println("The count is: " + count);
}
}
```

**Output :**

```
piratepanda@SastaPC:~/Documents/javalab/week11/Q4$ javac Q4.java
piratepanda@SastaPC:~/Documents/javalab/week11/Q4$ java Q4
Branch Name : SBI

Account number: 1020
Account balance: 6757
Account holder name: shgd
Branch name: SBI

Account number: 6345
Account balance: 7364
Account holder name: dfhk
Branch name: ICICI

Account number: 6534
Account balance: 23567
Account holder name: gjhsd
Branch name: SBI

[
User Details:
Name: shgd
Account No.: 1020
Balance: 6757.0
Branch: SBI,
User Details:
Name: gjhsd
Account No.: 6534
Balance: 23567.0
Branch: SBI]
The count is: 2
piratepanda@SastaPC:~/Documents/javalab/week11/Q4$
```