

Confidential



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# CLASS X PROJECT SOLUTION

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```
1 //Program 1
2 import java.util.*;
3
4 public class MyClass
5 {
6     public static void main(String args[])
7     {
8         Scanner sc = new Scanner(System.in);
9         System.out.println("Enter Deposit Amount and number of years");
10
11         double principle = sc.nextDouble(), time = sc.nextDouble(), rate = 0.0, A =
12         0.0, CI = 0.0;
13
14         if(principle < 2000 && time >= 2 )
15         {
16             A = principle * (Math.pow((1 + 5.0 / 100), time));
17             CI = A - principle;
18         }
19         else if(principle >= 2000 && principle < 6000 && time >= 2 )
20         {
21             A = principle * (Math.pow((1 + 7.0 / 100), time));
22             CI = A - principle;
23         }
24         else if(principle >= 6000 && time >= 1 )
25         {
26             A = principle * (Math.pow((1 + 8.0 / 100), time));
27             CI = A - principle;
28         }
29         else if(time >= 5)
30         {
31             A = principle * (Math.pow((1 + 9.75 / 100), time));
32             CI = A - principle;
33         }
34         else
35         {
36             A = principle * (Math.pow((1 + 3.0 / 100), time));
37             CI = A - principle;
38         }
39
40         System.out.println("Amount Deposited: "+ principle);
41         System.out.println("Number of years: "+ time);
42         System.out.println("Compound Interest: "+ CI);
43         System.out.println("Total Amount: "+ (principle + CI));
44     }
45 }
```

```
1 //Program 2
2 import java.util.*;
3
4 public class MyClass
5 {
6     public static void main(String args[])
7     {
8         Scanner sc = new Scanner(System.in);
9         System.out.println("Enter Horsepower Amount");
10        double hp = sc.nextDouble(), fee = 0.0;
11
12        if(hp <= 50)
13            fee = 0;
14        else if(hp <= 100)
15            fee = 300;
16        else if(hp <= 200)
17            fee = 600;
18        else if(hp <= 300)
19            fee = 900;
20        else
21            fee = 1500;
22
23        System.out.println("License Fee Amount: \u20B9 " + fee);
24    }
25 }
```

```
1 //Program 3
2 import java.util.*;
3
4 public class MyClass
5 {
6     public static void main(String args[])
7     {
8         Scanner sc = new Scanner(System.in);
9         System.out.println("--Menu--");
10        System.out.println("1. Equilateral");
11        System.out.println("2. Isosceles");
12        System.out.println("3. Right-Angled triangle");
13        System.out.println("4. Scalene");
14
15        System.out.print("Enter your choice: ");
16        int choice = sc.nextInt();
17
18        System.out.println("\nEnter 3 sides: ");
19        double s1 = sc.nextDouble(), s2 = sc.nextDouble(), s3 = sc.nextDouble();
20
21        switch(choice)
22        {
23            case 1: if(s1 == s2 && s2 == s3)
24                    System.out.print("The triangle is Equilateral");
25                    else
26                    System.out.print("The triangle is not Equilateral");
27                    break;
28
29            case 2: if(s1 == s2 || s2 == s3 || s1 == s3)
30                    System.out.print("The triangle is Isosceles");
31                    else
32                    System.out.print("The triangle is not Isosceles");
33                    break;
34
35            case 3: if((s1*s1)+(s2*s2)==(s3*s3) || (s1*s1)+(s3*s3)==(s2*s2) ||
36                    (s2*s2)+(s3*s3)==(s1*s1))
37                    System.out.print("The triangle is Right Angled");
38                    else
39                    System.out.print("The triangle is not Right Angled");
40                    break;
41
42            case 4: if(s1 != s2 && s1 != s3 && s2 != s3)
43                    System.out.print("The triangle is Scalene");
44                    else
45                    System.out.print("The triangle is not Scalene");
46                    break;
47
48            default: System.out.println("Wrong choice");
49        }
50 }
```

```
1 //Program 4
2 import java.util.*;
3
4 public class MyClass
5 {
6     public static void main(String args[])
7     {
8         Scanner sc = new Scanner(System.in);
9         System.out.println("Enter two numbers");
10        int n1 = sc.nextInt(), n2 = sc.nextInt();
11        String m = n1 + "" + n2 ;
12        System.out.println("Merged Numberbers: " + m);
13    }
14 }
15
```

```
1 //Program 5
2 import java.util.*;
3
4 public class MyClass
5 {
6     public static void main(String args[])
7     {
8         for(int i=3; i<=300; i++)
9         {
10             if(isPrime(i) && isPrime(i+2))
11                 System.out.println(i + " " + (i+2));
12         }
13     }
14     static boolean isPrime(int n)
15     {
16         int count = 0;
17         for(int j=1; j<=n; j++)
18         {
19             if(n % j == 0)
20                 count++;
21         }
22         if(count == 2)
23             return true;
24
25         return false;
26     }
27 }
28
```

```

1 //Program 6
2 import java.util.*;
3
4 public class MyClass
5 {
6     public static void main(String args[])
7     {
8         Scanner sc = new Scanner(System.in);
9         System.out.println("--Menu--");
10        System.out.println("1. Prime Palindrome");
11        System.out.println("2. Armstrong");
12
13        System.out.print("Enter your choice: ");
14        int choice = sc.nextInt();
15
16        System.out.print("Enter a number: ");
17        int num = sc.nextInt();
18
19        switch(choice)
20        {
21            case 1: int count = 0;
22                    for(int i=1; i<=num; i++)
23                    {
24                        if(num % i == 0) count++;
25                    }
26                    if(count == 2)
27                    {
28                        int temp=num, rev = 0;
29                        while(temp > 0)
30                        {
31                            int d = temp % 10;
32                            rev = rev * 10 + d;
33                            temp /= 10;
34                        }
35                        if(rev == num)
36                            System.out.println(num + " is a prime-palindrome
37number");
38                        else
39                            System.out.println(num + " is not a prime-palindrome
40number");
41                    }
42                    break;
43
44            case 2: int temp, digits=0, last=0, sum=0;
45
46                    temp=num;
47
48                    while(temp>0)
49                    {
50                        temp = temp/10;
51                        digits++;
52                    }
53                    temp = num;
54                    while(temp>0)
55                    {
56                        last = temp % 10;
57                        sum += (Math.pow(last, digits));
58                        temp = temp/10;
59                    }
60                }
61        }
62    }
63 }

```

```
58         if(num == sum)
59             System.out.println(num + " is an Armstrong Number");
60         else
61             System.out.println(num + " is not an Armstrong Number");
62         break;
63     default: System.out.println(" Invalid choice");
64     }
65 }
66 }
```



```
1 //Program 7
2 import java.util.*;
3
4 public class MyClass
5 {
6     public static void main(String args[])
7     {
8         Scanner sc = new Scanner(System.in);
9         System.out.println("--Menu--");
10        System.out.println("1. Fibonnaci");
11        System.out.println("2. Series");
12
13        System.out.print("Enter your choice: ");
14        int choice = sc.nextInt();
15
16        switch(choice)
17        {
18            case 1: System.out.print("Enter no. of terms: ");
19                    int n = sc.nextInt();
20                    int a = 0, b = 1, c = a + b, i = 3;
21
22                    System.out.print(a + "," + b);
23                    do
24                    {
25                        System.out.print("," + c);
26                        a=b;
27                        b=c;
28                        c=a+b;
29                        i++;
30                    }while(i <= n);
31
32                    break;
33            case 2:
34                    int k=0;
35                    for(int j = 1; j<=6; j++)
36                    {
37                        k = k*10 + 1;
38                        System.out.print(k + " ");
39                    }
40                    break;
41            default:
42                    System.out.println("Wrong choice");
43
44        }
45    }
46 }
```

```
1 //Program 8
2 import java.util.*;
3
4 public class MyClass
5 {
6     public static void main(String args[])
7     {
8         Scanner sc = new Scanner(System.in);
9
10        System.out.print("Enter Name, Rate, Hour, days");
11        String name = sc.nextLine();
12        float Rate = sc.nextFloat(), rate = sc.nextFloat();
13        float hour = sc.nextFloat();
14        int days = sc.nextInt();
15
16        printSalary(name, rate, hour, days);
17
18    }
19    static void printSalary(String name, float rate, float hour, int days)
20    {
21        double salary = rate * hour * days;
22        System.out.println("Name: " + name);
23        System.out.println("Rate Per Hour: " + rate);
24        System.out.println("Hours Worked: " + hour);
25        System.out.println("Days Worked: " + days);
26        System.out.println("Salary: " + salary);
27    }
28 }
```

```
1 //Program 9
2 import java.util.*;
3
4 public class stock
5 {
6     String bname;
7     int qty;
8     double price, total, discount, netPrice;
9     stock(String n, int q, double p)
10    {
11        bname = n;
12        qty = q;
13        price = p;
14    }
15    void calculation()
16    {
17        total = price * qty;
18        if(qty > 30)
19        {
20            discount = 20.0/100 * total;
21            netPrice = total - discount;
22        }
23    }
24    void printAmount()
25    {
26        System.out.println("\n\nName: " + bname);
27        System.out.println("Qty: " + qty);
28        System.out.println("Total Price: " + total);
29        System.out.println("Discount: " + discount);
30        System.out.println("Net Price: " + netPrice);
31    }
32
33    public static void main(String args[])
34    {
35        Scanner sc = new Scanner(System.in);
36        System.out.print("Enter name: ");
37        String name = sc.nextLine();
38        System.out.print("Enter quantity: ");
39        int qty = sc.nextInt();
40        System.out.print("Enter Unit Price: ");
41        double Price = sc.nextDouble();
42
43        stock s1 = new stock(name, qty, Price);
44        s1.calculation();
45        s1.printAmount();
46
47    }
48 }
```

```
1 //Program 10
2 import java.util.*;
3
4 public class Distance
5 {
6     int f1, f2, n1, n2;
7     int finalFeet, finalInches;
8     Distance(int f, int n1, int ff, int n2)
9     {
10         f1 = f;
11         f2 = ff;
12         this.n1 = n1;
13         this.n2 = n2;
14     }
15     void sumOfDistance()
16     {
17         int totalInches = n1 + n2;
18         int feet = totalInches / 12;
19         finalInches = totalInches % 12;
20
21         finalFeet = f1 + f2 + feet;
22     }
23     void showDistance()
24     {
25         System.out.println(finalFeet + " feet " + finalInches + " inch");
26     }
27     public static void main(String args[])
28     {
29         Scanner sc = new Scanner(System.in);
30
31         System.out.println("Enter Distance 1 in form of Feet and Inches ");
32         int f1 = sc.nextInt();
33         int n1 = sc.nextInt();
34
35         System.out.println("Enter Distance 2 in form of Feet and Inches ");
36         int f2 = sc.nextInt();
37         int n2 = sc.nextInt();
38
39         Distance d1 = new Distance(f1, n1, f2, n2);
40         d1.sumOfDistance();
41         d1.showDistance();
42
43     }
44 }
```

```
1 //Program 11
2 import java.util.*;
3
4 public class MyClass
5 {
6     public static void main(String args[])
7     {
8         Scanner sc = new Scanner(System.in);
9         System.out.print("Enter a decimal number: ");
10        int n = sc.nextInt();
11        String s = "";
12        while (n > 0)
13        {
14            s = n % 2 + s;
15            n = n / 2;
16        }
17        System.out.println("Binary Form: " + s);
18
19
20    }
21 }
```

```
1 //Program 12
2 import java.util.*;
3
4 public class MyClass
5 {
6     public static void main(String args[])
7     {
8         Scanner sc = new Scanner(System.in);
9         int digits[] = new int[10];
10
11         System.out.print("Enter a number: ");
12         int num = sc.nextInt();
13
14         int temp = num;
15
16         while(temp>0)
17         {
18             int d = temp % 10;
19             digits[d]++;
20             temp = temp/10;
21         }
22
23         System.out.println("\nDigit\t\tFrequency\n");
24         for(int i=0;i<10;i++)
25         {
26             if(digits[i] != 0)
27                 System.out.println("    " + i + "\t\t\t\t" + digits[i]);
28         }
29     }
30 }
31 }
```

```
1 //Program 13
2 import java.util.*;
3
4 public class MyClass
5 {
6     static void getNumbers(int d[])
7     {
8         int n = d.length;
9         int temp = 0;
10        for(int i=0; i < n; i++)
11        {
12            for(int j=1; j < (n-i); j++)
13            {
14                if(d[j-1] < d[j])
15                {
16                    temp = d[j-1];
17                    d[j-1] = d[j];
18                    d[j] = temp;
19                }
20            }
21        }
22    }
23
24 }
25 static void displayArray(int d[])
26 {
27     for(int i = 0; i<d.length; i++)
28         System.out.print(d[i] + " ");
29 }
30 public static void main(String args[])
31 {
32     Scanner sc = new Scanner(System.in);
33     int ar[] = {3, 56, 67, 34, 24, 6, 1, 4 , 8, 9, 10, 22, 23, 36, 29};
34
35
36     System.out.print("\nBefore Sorting:\t");
37     displayArray(ar);
38     System.out.print("\nAfter Sorting:\t");
39     getNumbers(ar);
40     displayArray(ar);
41
42 }
43 }
```

```

1 //Program 14
2 import java.util.*;
3
4 public class MyClass
5 {
6     static void getNumbers(int x[])
7     {
8         int n = x.length;
9
10        // One by one move boundary of unsorted subarray
11        for (int i = 0; i < n-1; i++)
12        {
13            // Find the maximum element in unsorted array
14            int max_idx = i;
15            for (int j = i+1; j < n; j++)
16            {
17                if (x[j] > x[max_idx])
18                    max_idx = j;
19            }
20
21            // Swap the found maximum element with the first
22            // element
23            int temp = x[max_idx];
24            x[max_idx] = x[i];
25            x[i] = temp;
26        }
27    }
28
29    static void displayArray(int d[])
30    {
31        for(int i = 0; i<d.length; i++)
32            System.out.print(d[i] + " ");
33    }
34    public static void main(String args[])
35    {
36        Scanner sc = new Scanner(System.in);
37        int ar[] = {3, 56, 67, 34, 24, 6, 1, 4 , 8, 9, 10, 22, 23, 36, 29};
38
39
40        System.out.print("\nBefore Sorting:\t");
41        displayArray(ar);
42        System.out.print("\nAfter Sorting:\t");
43        getNumbers(ar);
44        displayArray(ar);
45    }
46 }
47 }

```



```
1 //Program 15
2 import java.util.*;
3
4 public class MyClass
5 {
6     void search(int index[ ], int phone[ ], int no)
7     {
8         int low = 0;
9         int high = index.length-1;
10        int found = 0, mid = 0;
11
12        while (low <= high)
13        {
14            mid = (high - low) / 2;
15
16            if (index[mid] == no)
17            {
18                found = 1;
19                break;
20            }
21
22            if (index[mid] < no)
23                low = mid + 1;
24            else
25                high = mid - 1;
26        }
27        if(found == 1)
28            System.out.println("Phone Number: " + phone[mid]);
29        else
30            System.out.println("The Index number is not present in the list");
31    }
32 }
```

```
1 //Program 16
2 public class MyClass
3 {
4     void search(int x[ ], int val)
5     {
6         int found = -1;
7         for(int i = 0; i<x.length; i++)
8         {
9             if(val == x[i])
10            {
11                found = i;
12                break;
13            }
14        }
15
16        if(found != -1)
17            System.out.println(val + " found at index " + found);
18        else
19            System.out.println("Search Unsuccessful");
20    }
21 }
```

```
1 //Program 17
2 import java.util.*;
3
4 public class MyClass
5 {
6     public static void main(String args[])
7     {
8         int ar[] = {3, 6, 9, 5, 12, 14, 8, 18, 7, 21, 10, 4};
9         int br[] = new int[12];
10        int left = 0, right = 11;
11
12        for(int i = 0; i<12; i++)
13        {
14            if(ar[i] %2 == 0)
15                br[left++] = ar[i];
16            else
17                br[right--] = ar[i];
18        }
19        for(int i = 0; i<12; i++)
20            System.out.print(br[i] + " ");
21    }
22 }
```

```
1 //Program 18
2 import java.util.*;
3
4 public class arraay_2d
5 {
6     public static void main(String args[])
7     {
8         int ar[][] = new int[4][5];
9
10        Scanner sc = new Scanner(System.in);
11        System.out.println("Enter 20 numbers");
12
13        for(int i=0; i<4; i++)
14        {
15            for(int j=0; j<5; j++)
16            {
17                ar[i][j] = sc.nextInt();
18            }
19        }
20        int max = ar[0][0];
21        System.out.println("You have entered:\n");
22        for(int i=0; i<4; i++)
23        {
24            for(int j=0; j<5; j++)
25            {
26                if(ar[i][j] > max)
27                    max = ar[i][j];
28                System.out.print(ar[i][j] + "\t");
29            }
30            System.out.println();
31        }
32
33        System.out.println("\nLargest Number: " + max);
34
35    }
36 }
37 }
```

```
1 //Program 19
2 import java.util.*;
3
4 public class MyClass
5 {
6     public static void main(String args[])
7     {
8         Scanner sc = new Scanner(System.in);
9         System.out.println("Enter a sentence: ");
10        String s = sc.nextLine();
11        s = s.toUpperCase();
12        s += " ";
13        String word = "";
14        int count = 0;
15
16        for(int i=0; i<s.length(); i++)
17        {
18            char ch = s.charAt(i);
19            if(ch != ' ')
20                word += ch;
21            else
22            {
23                System.out.println(word);
24                if(word.equals("GOOD"))
25                    count++;
26
27                word = "";
28            }
29        }
30
31        System.out.println("GOOD/good word Frequency: " + count);
32    }
33 }
```

```
1 //Program 20
2 import java.util.*;
3
4 public class MyClass
5 {
6     public static void main(String args[])
7     {
8         Scanner sc = new Scanner(System.in);
9         System.out.println("Enter a sentence: ");
10        String s = sc.nextLine();
11        s = s.toUpperCase();
12        for(int i=0; i<s.length(); i++)
13        {
14            char ch = s.charAt(i);
15            if(Character.isLetter(ch))
16            {
17                if(ch == 'Z')
18                    System.out.print("A");
19                else
20                    System.out.print(++ch);
21            }
22            else
23                System.out.print(ch);
24        }
25    }
26 }
27 }
```