JAVA ASSIGNMENT-2

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```java
//1. Write a java program to find following using looping and decision
making without function
//        I. Sum of all digits of any numbers

package assignment2;

import java.util.Scanner;

public class Question1i {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        int n, n1, sum = 0;
        System.out.println("Enter a number : ");
        n = sc.nextInt();
        n1 = n;
        while(n != 0){
            int digit = n % 10;
            sum += digit;
            n = n / 10;
        }

        System.out.println("The number is : " + n1);
        System.out.println("The sum of digits of number " + n1 + " is :
" + sum);
    }
}
```

O/P - Enter a number :

456

The number is : 456

The sum of digits of number 456 is : 15

```java
//II. Sum of all even digits of any number
package assignment2;

import java.util.Scanner;

public class Question1ii {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        int n, n1, sum = 0;
        System.out.println("Enter a number : ");
        n = sc.nextInt();
        n1 = n;

        while(n != 0){
            int digit = n % 10;
            if(digit % 2 == 0){
                sum += digit;
            }
            n = n / 10;
        }

        System.out.println("The number is : " + n1);
        System.out.println("The sum of digits of " + n1 + " is : " +
sum);
```

```
    }
}
```

O/P - Enter a number :

562

The number is : 562

The sum of digits of 562 is : 8

```
//II. Sum of all odd digits of any number
package assignment2;

import java.util.Scanner;

public class Question1iii {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        int n, n1, sum = 0;
        System.out.println("Enter a number : ");
        n = sc.nextInt();
        n1 = n;

        while(n != 0){
            int digit = n % 10;
            if(digit % 2 != 0){
                sum += digit;
            }
            n = n / 10;
        }

        System.out.println("The number is : " + n1);
        System.out.println("The sum of all digits of " + n1 + " is : "
+ sum);
    }
}
```

O/P - Enter a number :

4567

The number is : 4567

The sum of all digits of 4567 is : 12

```
//V. Sum of all prime digits
package assignment2;


import java.util.Scanner;

public class Question1iv {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        int n, n1, sum = 0;
        System.out.println("Enter a number : ");
        n = sc.nextInt();
        n1 = n;
        while(n != 0){
            int isPrime = 0;
```

```
            int digit = n % 10;
            if(digit == 0 || digit == 1){
                isPrime = 0;
            }
            else {
                for (int i = 2; i < digit; i++) {
                    if (digit % i == 0) {
                        isPrime = 1;
                        break;
                    }
                }
            }
            if(isPrime == 0){
                    sum += digit;
                }
            n = n / 10;

        }

        System.out.println("The number is : " + n1);
        System.out.println("The sum of all prime digits of  " + n1 + "
is : " + sum);

    }
}
```

O/P - Enter a number :

4579

The number is : 4579

The sum of all prime digits of 4579 is : 12

```
//V. Difference between average of all even digits except divisible
//// by 4 and average of all odd digits except divisible by 3
package assignment2;

import java.util.Scanner;

public class Question1v {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        int n, n1, sumOfEven = 0,sumOfOdd = 0, avgOfEven = 0, avgOfOdd
= 0,countEven = 0, countOdd = 0, diff;
        System.out.println("Enter a number : ");
        n = sc.nextInt();
        n1 = n;
        while(n != 0){
            int digit = n % 10;
            if(digit % 2 == 0 && digit % 4 != 0){
                sumOfEven += digit;
                countEven++;
            }
            else if(digit % 3 != 0){
                sumOfOdd += digit;
                countOdd++;
            }
            n = n / 10;
        }
```

```
        avgOfEven = sumOfEven / countEven;
        avgOfOdd = sumOfOdd / countOdd;
        diff = avgOfEven - avgOfOdd;

        System.out.println("The number is : " + n1);
        System.out.println("The average of even digits except divisible
by 4 is : " + avgOfEven);
        System.out.println("The average of odd digits except divisible
by 3 is : " + avgOfOdd);
        System.out.println("Difference between average of all even
digits except divisible by\n" +
                "4 and average of all odd digits except divisible by 3
is :  " + diff);



    }
}
```

O/P - Enter a number :

2567

The number is : 2567

The average of even digits except divisible by 4 is : 4

The average of odd digits except divisible by 3 is : 6

Difference between average of all even digits except divisible by

4 and average of all odd digits except divisible by 3 is : -2

```
//Find kth digit from front side or back side of any digits number and
find its positional value
package assignment2;

import java.util.Scanner;

public class Question1vi {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        int n, n1, k, rev = 0, frontSidePos = 0, backSidePos = 0, count
= 0, frontSideNum = 0, backSideNum = 0;
        System.out.println("Enter a number : ");
        n = sc.nextInt();
        n1 = n;
        System.out.println("Enter the value which positional value you
want to find : ");
        k = sc.nextInt();
        int temp = n;
        while(temp != 0){
            count++;
            int digit = temp % 10;
            rev = (rev * 10) + digit;
            temp = temp / 10;
        }
        int x = 1;
        int y = (int) Math.pow(10, count - 1);
        for(int i = 0; i < k; i++){
```

```
            backSideNum = n % 10;
            backSidePos = backSideNum * x;
            x = x * 10;
            n = n / 10;
            frontSideNum = rev % 10;
            frontSidePos = frontSideNum * y;
            y = y / 10;
            rev = rev / 10;
        }
        System.out.println(k +"th digit from front side of "+ n1 +" is
:"+frontSideNum );
        System.out.println("Position of "+ k +"th digit from front side
of "+ n1 +" is: "+frontSidePos);
        System.out.println(x+"th digit from back side of "+ n1 +" is
:"+ backSideNum);
        System.out.println("Position of "+ k +"th digit from back side
of "+ n1 +" is: "+ backSidePos);
    }
}
```

O/P - Enter a number :

4463

Enter the value which positional value you want to find :

3

3th digit from front side of 4463 is :6

Position of 3th digit from front side of 4463 is: 60

1000th digit from back side of 4463 is :4

Position of 3th digit from back side of 4463 is: 400

```
//VII. Sum of product of consecutive digits of any digit number
package assignment2;

import java.util.Scanner;

public class Question1vii {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        int n , n1, sum = 0;
        System.out.println("Enter a number : ");
        n = sc.nextInt();
        n1 = n;
        while(n != 0){
            int digit1 = n % 10;
            int digit2 = (n / 10) % 10;
            sum = sum + (digit1 * digit2);
            n = n / 10;
        }

        System.out.println("The number is : " + n1);
        System.out.println("The sum of product of consucutive digits of
" + n1 + " is : " + sum);
```

```
    }
}
```

O/P - Enter a number :

5698

The number is : 5698

The sum of product of consecutive digits of 5698 is : 156

```
//VIII. Sum of product of consecutive even digits of any digit number
package assignment2;

import java.util.Scanner;

public class Question1viii {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        int n, n1, sum = 0;
        System.out.println("Enter a number : ");
        n = sc.nextInt();
        n1 = n;
        while(n != 0){
            int digit1 = n % 10;
            int digit2 = (n / 10) % 10;
            if(digit1 % 2 == 0 && digit2 % 2 == 0){
                sum = sum + (digit1 * digit2);
            }
            n = n / 10;
        }

        System.out.println("The number is : " + n1);
        System.out.println("The sum of product of consecutive even
digits of " + n1 + " is : " + sum);
    }
}
```

O/P - Enter a number :

9645

The number is : 9645

The sum of product of consecutive even digits of 9645 is : 24

```
//IX. Sum of product of consecutive odd digits of any digit number
package assignment2;

import java.util.Scanner;

public class Question1Ix {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        int n, n1, sum = 0;
        System.out.println("Enter a number : ");
        n = sc.nextInt();
        n1 = n;
        while(n != 0){
            int digit1 = n % 10;
            int digit2 = (n / 10) % 10;
```

```
            if(digit1 % 2 != 0 && digit2 % 2 != 0){
                sum = sum + (digit1 * digit2);
            }
            n = n / 10;
        }

        System.out.println("The number is : " + n1);
        System.out.println("The sum of product of consecutive odd
digits of " + n1 + " is : " + sum);
    }
}
```

O/P - Enter a number :

5369

The number is : 5369

The sum of product of consecutive odd digits of 5369 is : 15

```
//X. Sum of product of consecutive prime digits of any digit number
package assignment2;

import java.util.Scanner;

public class Question1x {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        int n, n1, sum = 0;
        System.out.println("Enter a number : ");
        n = sc.nextInt();
        n1 = n;
        while(n != 0){
            int isPrime = 0;
            int digit1 = n % 10;
            int digit2 = (n / 10) % 10;
            if(digit1 == 0 || digit1 == 1 || digit2 == 0 || digit2 ==
1){
                isPrime = 0;
            }
            else {
                for (int i = 2; i < digit1; i++) {
                    if (digit1 % i == 0) {
                        isPrime = 1;
                        break;
                    }
                }
                for (int i = 2; i < digit2; i++) {
                    if(digit2 % i == 0){
                        isPrime = 1;
                        break;
                    }
                }
            }
            if(isPrime == 0){
                sum = sum + (digit1 * digit2);
            }
            n = n / 10;
        }
        System.out.println("The number is : " + n1);
```

```
        System.out.println("The sum of product of consecutive digits of
" + n1 + " is " + sum);
    }
}
```

O/P - Enter a number :

3567

The number is : 3567

The sum of product of consecutive digits of 3567 is 15

```
//2. Write a java program to find sum of product of corresponding
digits of two
// any digit number Such as n=1234 m=7896 output=6*4+9*3+8*2+7*1
package assignment2;

import java.util.Scanner;

public class Question2 {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        int n, m, n1, m1, sum = 0;
        System.out.println("Enter two numbers : ");
        n = sc.nextInt();
        m = sc.nextInt();

        n1 = n;
        m1 = m;

        while(n > 0 || m > 0){
            int d1 = n % 10;
            int d2 = m % 10;
            sum += (d1 * d2);
            n = n / 10;
            m = m / 10;
        }
        System.out.println("The sum of product of corresponding digits
of two number " + n1 + " and " + m1 + " is : " + sum);
    }
}
```

O/P - Enter two numbers :

1234

7896

The sum of product of corresponding digits of two number 1234 and 7896 is : 74

```
//3. Write a java program to find sum of product of corresponding even
digits of first any digit number
// and corresponding odd digit of any digit number Such as n=1234
m=4567 output=4*7+2*5

package assignment2;

import java.util.Scanner;

public class Question3 {
```

```
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        int n, m, n1, m1, sum = 0;
        System.out.println("Enter two numbers : ");
        n = sc.nextInt();
        m = sc.nextInt();

        n1 = n;
        m1 = m;

        while(n > 0 || m > 0){
            int d1 = n % 10;
            int d2 = m % 10;
            if(d1 % 2 == 0 && d2 % 2 != 0) {
                sum += (d1 * d2);
            }
            n = n / 10;
            m = m / 10;
        }
        System.out.println("The sum of product of corresponding digits
of two number " + n1 + " and " + m1 + " is : " + sum);
    }
}
```

O/P - Enter two numbers :

1234

4567

The sum of product of corresponding digits of two number 1234 and 4567 is : 38

```
//4. Write a java program to compute following series and take input x
and n
//        I. 1-x2/2! + x3/3!-x4/4!+------+xn/n!
package assignment2;

import java.util.Scanner;

public class Question4i {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        int x, n , evenSum = 0, oddSum = 0,evenPow = 1, oddPow = 1,
fact = 1;
        float result;

        System.out.println("Enter the value of x : ");
        x = sc.nextInt();
        System.out.println("Enter the value of n : ");
        n = sc.nextInt();

        for (int i = 2; i <= n; i++) {
            int i1 = i;
            if(i1 % 2 == 0){
                while(i1 > 0){
                    evenPow = evenPow * x;
                    fact = fact * i1;
                    i1--;
                }
                evenSum = evenSum + (evenPow / fact);
```

```
                evenPow = 1;
                fact = 1;
            }
            else {
                while(i1 > 0){
                    oddPow = oddPow * x;
                    fact = fact * i1;
                    i1--;
                }
                oddSum = oddSum + (oddPow / fact);
                oddPow = 1;
                fact = 1;
            }

            result = 1 + oddSum -evenSum;
            System.out.println("The result of the above series is : " +
result);
        }
    }
}
```

O/.P - Enter the value of x :

3

Enter the value of n :

8

The result of the above series is : -1.0

```
//4. Write a java program to compute following series and take input x
and n
//        II. x-x3/3! + x5/5!-x7/7!+------+xn/n!
package assignment2;

import java.util.Scanner;

public class Question4iii {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        int x, n;
        double result = 0;

        System.out.println("Enter the value of x : ");
        x = sc.nextInt();
        System.out.println("Enter the value of n : ");
        n = sc.nextInt();

        for (int i = 1; i <= n ; i++) {
            if(i % 2 == 0){
                int i1 = i;
                int fact = 1;
                while(i1 > 0){
                    fact = fact * i1;
                    i1--;
                }
                result = result + Math.pow(x, i) / fact;
            }
        }
```

```
        System.out.println("The result of the above series is : " +
result);
    }
}
```

O/P - Enter the value of x :

2

Enter the value of n :

5

The result of the above series is : 2.6666666666666665

```
//5. Write a java program compute following series and take a numbers
num as
// input x-x3/3! + x5/5!-x7/7!+------+xn/n!where x=sum of all even
digits except 2
// and 8 and n= sum of all odd digits except 1 and 3

package assignment2;

import java.util.Scanner;

public class Question5 {
    public static void main(String[] args) {
        int num, x = 0, n = 0, temp = 0;
        double result = 0;
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter a number :");
        num = sc.nextInt();
        temp = num;
        while(temp != 0)
        {
            int flag = 0;
            flag = temp%10;
            if(flag % 2 == 0 && flag != 2 && flag != 8)
            {
                x = x + flag;
            } else {
                if(flag != 1 && flag != 3)
                {
                    n = n + flag;
                }
            }
            temp = temp / 10;
        }
        for(int i = 1; i <= n; i++)
        {
            int j = (2 * 1) - 1;
            int fact = 1;
            for(int k = 1; k <= j; k++)
            {
                fact = fact * k;
            }
```

```
            result = result + (Math.pow(-1, (i+1)) * (Math.pow(x, j)) /
fact);
        }
        System.out.println(" R = "+ result);
    }
}
```

```
//6. Write a java program to check weather the given number is
palindrome and prime or not?
package assignment2;

import java.util.Scanner;

public class Question6 {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter a number : ");
        int n = sc.nextInt();
        int n1 = n, rev = 0, count = 0;

        while(n > 0){
            int digit = n % 10;
            rev = rev * 10 + digit;
            n = n / 10;
        }

        for(int i = 1; i <= n1; i++){
            if(n1 % i == 0){
                count++;
            }
        }
        if(count == 2){
            System.out.println(n1 + " is a prime number");
        }
        if(rev == n1){
            System.out.println(n1 + " is a palindrome number");
        }

    }
}
```

O/P - Enter a number :

113

113 is a prime number

113 is not a palindrome number

```
//7. Write a java program to find factorial of a number using while
loop, do while loop
// and for loop all in one program?[hint use switch block]?
package assignment2;

import java.util.Scanner;

public class Question7 {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
```

```
        System.out.println("Enter a number : ");
        int n = sc.nextInt();
        int choice, n1 = n, fact = 1;

        System.out.println("1. Using while loop.");
        System.out.println("2. Using do while loop.");
        System.out.println("3. For loop.");

        System.out.println("How you want to find factorial! Enter your
choice : ");
        choice = sc.nextInt();

        switch(choice){
            case 1:
                while(n > 0){
                    fact = fact * n;
                    n--;
                }
                System.out.println("The factorial of " + n1 + " is : "
+ fact);
                break;
            case 2:
                do{
                    fact = fact * n;
                    n--;
                }while(n > 0);
                System.out.println("The factorial is " + n1 + " is : "
+ fact);
                break;
            case 3:
                for(int i = n; i > 0; i--){
                    fact = fact * i;
                }
                System.out.println("The factorial is : " + n1 + " is :
" + fact);
                break;
        }
    }
}
```

o/p - Enter a number :

5

1. Using while loop.

2. Using do while loop.

3. For loop.

How you want to find factorial! Enter your choice :

1

The factorial of 5 is : 120

```
//8. Write a program to find following data of student using mark of
four subjects like
// C, C++, Java, and Python. Mark of 4 subjects will be accepted at the
run time and
```

```
// credit of all the mentioned subject is 3?
//        a) Grade of 4 subjects?
//        b) Total Mark and %age of mark secured by Students?
//        c) SGPA of Student?

package assignment2;

import java.util.Scanner;

public class Question8 {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        int mark1, mark2, mark3, mark4, choice;
        char grade1, grade2, grade3, grade4;
        System.out.println("Enter marks in C : ");
        mark1 = sc.nextInt();
        System.out.println("Enter marks in C++ : ");
        mark2 = sc.nextInt();
        System.out.println("Enter marks in JAVA : ");
        mark3 = sc.nextInt();
        System.out.println("Enter marks in Python: ");
        mark4 = sc.nextInt();

        System.out.println("1. Grade of 4 subjects.");
        System.out.println("2. Total Mark and %age of mark secures by
students.");
        System.out.println("3. SGPA of student.");
        System.out.println("Enter your choice : ");
        choice = sc.nextInt();

        switch (choice) {
            case 1:
                if (mark1 >= 90 && mark1 <= 100) {
                    grade1 = 'S';
                } else if (mark1 >= 80 && mark1 <= 89) {
                    grade1 = 'O';
                } else if (mark1 >= 70 && mark1 <= 79) {
                    grade1 = 'A';
                } else if (mark1 >= 60 && mark1 <= 69) {
                    grade1 = 'B';
                } else if (mark1 >= 50 && mark1 <= 59) {
                    grade1 = 'C';
                } else if (mark1 >= 40 && mark1 <= 49) {
                    grade1 = 'D';
                } else if (mark1 >= 30 && mark1 <= 39) {
                    grade1 = 'E';
                } else {
                    grade1 = 'F';
                }
// For Mark2

                if (mark2 >= 90 && mark2 <= 100) {
                    grade2 = 'S';
                } else if (mark2 >= 80 && mark2 <= 89) {
                    grade2 = 'O';
                } else if (mark2 >= 70 && mark2 <= 79) {
                    grade2 = 'A';
                } else if (mark2 >= 60 && mark2 <= 69) {
```

```
                    grade2 = 'B';
                } else if (mark2 >= 50  && mark2 <= 59) {
                    grade2 = 'C';
                } else if (mark2 >= 40 && mark2 <= 49) {
                    grade2 = 'D';
                } else if (mark2 >= 30 && mark2 <= 39) {
                    grade2 = 'E';
                } else {
                    grade2 = 'F';
                }
// For Mark3
                if (mark3 >= 90 && mark3 <= 100) {
                    grade3 = 'S';
                } else if (mark3 >= 80 && mark3 <= 89) {
                    grade3 = 'O';
                } else if (mark3 >= 70 && mark3 <= 79) {
                    grade3 = 'A';
                } else if (mark3 >= 60 && mark3 <= 69) {
                    grade3 = 'B';
                } else if (mark3 >= 50 && mark3 <= 59) {
                    grade3 = 'C';
                } else if (mark3 >= 40 && mark3 <= 49) {
                    grade3 = 'D';
                } else if (mark3 >= 30 && mark3 <= 39) {
                    grade3 = 'E';
                } else {
                    grade3 = 'F';
                }
// For Grade 4
                if (mark4 >= 90 && mark4 <= 100) {
                    grade4 = 'S';
                } else if (mark4 >= 80 && mark4 <= 89) {
                    grade4 = 'O';
                } else if (mark4 >= 70 && mark4 <= 79) {
                    grade4 = 'A';
                } else if (mark4 >= 60 && mark4 <= 69) {
                    grade4 = 'B';
                } else if (mark4 >= 50 && mark4 <= 59) {
                    grade4 = 'C';
                } else if (mark4 >= 40 && mark4 <= 49) {
                    grade4 = 'D';
                } else if (mark4 >= 30 && mark4 <= 39) {
                    grade4 = 'E';
                } else {
                    grade4 = 'F';
                }

// Displaying grades of 4 subjects

                System.out.println("The grade in C : " + grade1);
                System.out.println("The grade in C++ : " + grade2);
                System.out.println("The grade in JAVA : " + grade3);
                System.out.println("The grade in Python : " + grade4);
                break;

//  Total Mark and %age of mark secured by Students?
            case 2:
                int totalMark = 400;
```

```
                float percentage = 0;
                int totalMarkObtain = mark1 + mark2 + mark3 + mark4;
                percentage = (float) totalMarkObtain / totalMark * 100;
                System.out.println("Total mark secured by Students is :
" + totalMarkObtain);
                System.out.println("Percentage secured by Students is :
" + percentage + "%");
                break;

//  SGPA of Student?
            case 3:
                float creditSub1, creditSub2, creditSub3, creditSub4;
                float totalCreXMark, SGPA;
                creditSub1 = 3 * mark1 / 10;
                creditSub2 = 3 * mark2 / 10;
                creditSub3 = 3 * mark3 / 10;
                creditSub4 = 3 * mark4 / 10;

                totalCreXMark = creditSub1 + creditSub2 + creditSub3+
creditSub4;
                SGPA = totalCreXMark / (3 + 3 + 3 + 3);
                System.out.printf("SGPA: %.2f", SGPA);
                break;
        }
    }
}
```

o/p - Enter marks in C :

65

Enter marks in C++ :

83

Enter marks in JAVA :

46

Enter marks in Python:

76

1. Grade of 4 subjects.

2. Total Mark and %age of mark secures by students.

3. SGPA of student.

Enter your choice :

2

Total mark secured by Students is : 270

Percentage secured by Students is : 67.5%

```
//9. Write a program to find factorial of difference between greatest
and smallest number among 3 numbers?
```

```java
package assignment2;

import java.util.Scanner;

public class Question9 {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        int num1, num2, num3 ,greatest, smallest, fact1 = 1, fact2 = 1,
diff;

//  Taking inputs three numbers
        System.out.println("Enter three numbers");
        System.out.println("Enter first number : ");
        num1 = sc.nextInt();
        System.out.println("Enter second number : ");
        num2 = sc.nextInt();
        System.out.println("Enter third number : ");
        num3 = sc.nextInt();

//  Finding greatest among 3 numbers
        if(num1 > num2  && num1 > num3){
            greatest = num1;
        }else if(num2 > num1 && num2 > num3){
            greatest = num2;
        }else {
            greatest = num3;
        }

//  Finding smallest among 3 numbers
        if(num1 < num2  && num1 < num3){
            smallest = num1;
        }else if(num2 < num1 && num2 < num3){
            smallest = num2;
        }else {
            smallest = num3;
        }

//  Finding the factorial of greatest number
        int count1 = 0;
        for(int i = greatest; i > 0; i--){
            fact1 = fact1 * i;
        }
        int count2 = 0;
        for(int i = smallest; i > 0; i--){
            fact2 = fact2 * i;
        }

        diff = fact1 - fact2;

        System.out.println("The greatest numbers among " + num1 + ", "
+ num2 + " and " + num3 + " is : " + greatest);
        System.out.println("The smallest numbers among " + num1 + ", "
+ num2 + " and " + num3 + " is : " + smallest);
        System.out.println("The factorial of " + greatest + " is : " +
fact1);
        System.out.println("The factorial of " + smallest + " is : " +
fact2);
```

```
        System.out.println("The difference between the factorial of " +
num1 + " and " + num2 + " is : " + diff);

    }
}
```

O/P - Enter three numbers

Enter first number :

5

Enter second number :

6

Enter third number :

3

The greatest numbers among 5, 6 and 3 is : 6

The smallest numbers among 5, 6 and 3 is : 3

The factorial of 6 is : 720

The factorial of 3 is : 6

The difference between the factorial of 5 and 6 is : 714

```
//10. Write a program to generate Fibonacci series up to n terms? Value
of n will be accepted from user?
package assignment2;

import java.util.Scanner;

public class Question10 {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        int n , fib, fib1 = 0, fib2 = 1;
        System.out.println("How many terms upto you want to find the
fibonacci series?");
        n = sc.nextInt();
        System.out.println("The fibonacci series is : ");
        System.out.print(fib1 + " ");
        System.out.print(fib2);
        for(int i = 2; i < n; i++ ){
            fib = fib1 + fib2;
            System.out.print(" " + fib);
            fib1 = fib2;
            fib2 = fib;
        }
    }
}
```

O/P - How many terms upto you want to find the fibonacci series?

8

The fibonacci series is :

0 1 1 2 3 5 8 13

```java
//11. Write a program to perform following using the numbers in between
23 to 249?
//        a) find number of even numbers that ends with 0 and 4?
package assignment2;

public class Question11a {
    public static void main(String[] args) {
        int evenCount = 0;
        System.out.println("The even numbers that ends with 0 and 4 are
: ");
        for (int i = 24; i < 249; i++) {
            if(i % 2 == 0){
                if(i % 10 == 0 || i % 10 == 4){
                    evenCount++;
                    System.out.print(" " + i);
                }
            }
        }
        System.out.println("\nThe total even numbers are : " +
evenCount);
    }
}
```

O/P - The even numbers that ends with 0 and 4 are :

24 30 34 40 44 50 54 60 64 70 74 80 84 90 94 100 104 110 114 120 124 130 134 140 144 150 154 160 164 170 174 180 184 190 194 200 204 210 214 220 224 230 234 240 244

The total even numbers are : 45

```java
//11. Write a program to perform following using the numbers in between
23 to 249?
//b) find number of odd numbers that ends with 5 and 7?
package assignment2;

public class Question11b {
    public static void main(String[] args) {
        int oddCount = 0;
        System.out.println("The odd numbers that ends with 5 and 7 are
: ");
        for (int i = 24; i < 249; i++) {
            if(i % 2 != 0){
                if(i % 10 == 5 || i % 10 == 7){
                    oddCount++;
                    System.out.print(" " + i);
                }
            }
        }
        System.out.println("\nThe total even numbers are : " +
oddCount);
    }
}
```

O/P - The odd numbers that ends with 5 and 7 are :

25 27 35 37 45 47 55 57 65 67 75 77 85 87 95 97 105 107 115 117 125 127 135 137 145 147 155 157 165 167 175 177 185 187 195 197 205 207 215 217 225 227 235 237 245 247

The total even numbers are : 46

```java
//11. Write a program to perform following using the numbers in between
23 to 249?
//        c) find number of prime numbers
package assignment2;

public class Question11c {
    public static void main(String[] args) {
        int countPrime = 0;
        System.out.println("The prime numbers are : ");
        for (int n = 24; n < 249; n++) {
            int temp = 0;
           for(int i = 1; i <= n; i++){
               if(n % i == 0) {
                   temp++;
               }

            }
           if(temp == 2){
               System.out.print(" " + n);
               countPrime++;
           }
        }
        System.out.println("\nThe total even numbers are : " +
countPrime);
    }
}
```

O/P - The prime numbers are :

29 31 37 41 43 47 53 59 61 67 71 73 79 83 89 97 101 103 107 109 113 127 131 137 139 149 151 157 163 167 173 179 181 191 193 197 199 211 223 227 229 233 239 241

The total even numbers are : 44

```java
//11. Write a program to perform following using the numbers in between
23 to 249
//d) find number of palindrome numbers
package assignment2;

public class Question11d {
    public static void main(String[] args) {
        int countPalin = 0;
        System.out.println("The palindrome numbers are : ");
        for (int n = 24; n < 249; n++) {
            int rev = 0, n1 = n;
            while(n1 > 0){
                int digit = n1 % 10;
                rev = rev * 10 + digit;
                n1 = n1 / 10;
            }
            if(n == rev){
                System.out.print(" " + n);
                countPalin++;
            }
        }
        System.out.println("\nThe total even numbers are : " +
countPalin);
    }
}
```

O/P - The palindrome numbers are :

33 44 55 66 77 88 99 101 111 121 131 141 151 161 171 181 191 202 212 222 232 242

The total even numbers are : 22

```
//11. Write a program to perform following using the numbers in between
23 to 249?
//        e) find difference between average of palindrome and prime
numbers?
package assignment2;

public class Question11e {
    public static void main(String[] args) {
        int countPalin = 0, countPrime = 0, palinSum = 0, primeSum = 0,
palinAvg = 0, primeAvg = 0,diff;
        for (int n = 24; n < 249; n++) {

            // finding palindrome number
            int rev = 0, n1 = n;
            while (n1 > 0) {
                int digit = n1 % 10;
                rev = rev * 10 + digit;
                n1 = n1 / 10;
            }
            if (n == rev) {
                palinSum += n;
                countPalin++;
            }

            // finding prime number
            int temp = 0;
            for (int i = 1; i <= n; i++) {
                if (n % i == 0) {
                    temp++;
                }

            }
            if (temp == 2) {
                primeSum += n;
                countPrime++;
            }
        }

        palinAvg = palinSum / countPalin;
        primeAvg = primeSum / countPrime;
        diff = palinAvg - primeAvg;

        System.out.println("The average of palindrome numbers : " +
palinAvg);
        System.out.println("The average of prime numbers : " +
primeAvg);
        System.out.println("The difference between average of
palindrome and prime numbers are : " + diff);
    }
}
```

O/P - The average of palindrome numbers : 137

The average of prime numbers : 130

The difference between average of palindrome and prime numbers are : 7

```
//11. Write a program to perform following using the numbers in between
23 to 249?
//       h) Check whether the difference between largest even number
and smallest odd
//number is palindrome or not?
package assignment2;

public class Question11h {
    public static void main(String[] args) {
        int largest = 0, smallest = 0, diff;
        for (int i = 24; i < 249; i++) {
            if(i % 2 == 0){
                if(largest < i){
                    largest = i;
                }

            }else {
                if(smallest < i){
                    smallest = i;
                }
            }
        }

        diff = largest - smallest;
        int num = diff, rev = 0;
        while(num > 0){
            int digit = num % 10;
            rev = rev * 10 + digit;
            num = num / 10;
        }
        System.out.println("The largest even number : " + largest);
        System.out.println("The smallest odd number : " + smallest);
        System.out.println("The difference between largest and smallest
number is : " + diff);
        if(rev == diff){
            System.out.println(diff + " is palindrome number.");
        }
        else {
            System.out.println(diff + " is not palindrome number.");
        }
    }
}
```

O/P - The largest even number : 248

The smallest odd number : 247

The difference between largest and smallest number is : 1

1 is palindrome number.

```
//11. Write a program to perform following using the numbers in between
23 to 249?
//i) find first five largest even number and smallest odd number?
package assignment2;
```

```
public class Question11i {
    public static void main(String[] args) {

        int countEven = 0, countOdd = 0;
        System.out.print("The even numbers are : ");
        for (int i = 248; i > 24; i--) {
            if (i % 2 == 0) {
                countEven++;
                if (countEven <= 5) {
                    System.out.print(" " + i);
                }
            }
        }

        System.out.print("\nThe odd numbers are : ");
        for (int i = 248; i > 24; i++) {
            if(i % 2 != 0){
                countOdd++;
                if(countOdd <= 5){
                    System.out.print(" " + i);
                }
            }
        }

    }
}
```

O/P - The even numbers are : 248 246 244 242 240

The odd numbers are : 249 251 253 255 257

```
//j) find the sum of product of corresponding digits of 2nd largest
even number and 3rd smallest odd number?

package assignment2;

public class Question11j {
    public static void main(String[] args) {
        int countEven = 0, countOdd = 0, secondLargest = 0,
thirdSmallest = 0;

        //for finding the even number
        for (int i = 248; i > 23; i--) {
            if(i % 2 == 0){
                countEven++;
                if(countEven == 2){
                    secondLargest = i;
                    break;
                }
            }
        }

        // for finding the odd number
        for (int i = 24; i < 249; i++) {
            if(i % 2 != 0){
                countOdd++;
                if(countOdd == 3){
                    thirdSmallest = i;
                    break;
```

```
                }
            }
        }

        int temp1 = secondLargest, temp2 = thirdSmallest;
        int rem1, rem2, sum = 0;
        while(temp1 != 0 && temp2 != 0){
            rem1 = temp1 % 10;
            rem2 = temp2 % 10;
            sum += rem1 * rem2;
            temp1 = temp1 / 10;
            temp2 = temp2 / 10;
        }

        System.out.println("The 2nd largest even number : " +
secondLargest);
        System.out.println("The 3rd smallest odd number : " +
thirdSmallest);
        System.out.println("sum of product of corresponding digits of
2nd largest even number and 3rd smallest odd number : " + sum);
    }
}
```

O/P - The 2nd largest even number : 246

The 3rd smallest odd number : 29

sum of product of corresponding digits of 2nd largest even number and 3rd smallest odd number : 62

```
//12. Write a java program to find following of 10 numbers using
command line arguments?
// Do not use array a) find difference between greatest and smallest
number?
package assignment2;

public class Question12a {
    public static void main(String[] args) {
      int greatest = Integer.parseInt(args[0]), smallest =
Integer.parseInt(args[0]), diff;

// Finding the greatest number
        for(int i = 0; i < 10; i++){
          if(greatest < Integer.parseInt(args[i])){
              greatest = Integer.parseInt(args[i]);
          }
        }

// Finding the smallest number
        for (int i = 0; i < 10; i++) {
            if(smallest > Integer.parseInt(args[i])){
                smallest = Integer.parseInt(args[i]);
            }
        }

        diff = greatest - smallest;
        System.out.println("The greatest number is : " + greatest);
        System.out.println("The smallest number is : " + smallest);
        System.out.println("The difference between greatest and
```

```
smallest number is : " + diff);
    }
}
//12. Write a java program to find following of 10 numbers using
command line arguments? Do not use array?
//b) find difference between average of all odd numbers and even
numbers
package assignment2;

public class Question12b {
    public static void main(String[] args) {
        int countEven = 0, countOdd = 0, evenSum = 0, oddSum = 0;
        float evenAvg, oddAvg, diff;

        for (int i = 0; i < 10; i++) {
            if(Integer.parseInt(args[i]) % 2 == 0){
                evenSum += Integer.parseInt(args[i]);
                countEven++;
            }else {
                oddSum += Integer.parseInt(args[i]);
                countOdd++;
            }
        }

        evenAvg = evenSum / countEven;
        oddAvg = oddSum / countOdd;

        diff = evenAvg - oddAvg;

        System.out.print("The numbers are :");
        for (int i = 0; i < 10; i++) {
            System.out.print(" " + args[i]);
        }
        System.out.println("\nSum of even numbers : " + evenSum);
        System.out.println("Sum of odd numbers : " + oddSum);
        System.out.println("The average of even numbers : " + evenAvg);
        System.out.println("The average of odd numbers : " + oddAvg);
        System.out.println("The difference between average of even
numbers and odd numbers is : " + diff);

    }
}
package assignment2;

import java.util.Scanner;

public class Questionvi {
        public static void main(String[] args) {
            long
num,rev=0,temp,backNum=0,frontNum=0,fntPos=0,backPos=0;
            int x,count=0;
            Scanner sc=new Scanner(System.in);
            System.out.println("Enter a number:");
            num=sc.nextLong();
            temp=num;
            System.out.println("Enter the position of number:");
            x=sc.nextInt();
            while(temp!=0)
```

```
        {
                count++;
                rev=(rev*10)+(temp%10);
                temp=temp/10;
            }
            int y=1;
            int z=(int) Math.pow(10, count-1);
            for(int i=0;i<x;i++)
            {
                backNum=num%10;
                backPos=(backNum*y);
                y=y*10;
                num=num/10;
                frontNum=rev%10;
                fntPos=(frontNum*z);
                z=z/10;
                rev=rev/10;
            }
            System.out.println(x+"th digit from front side of "+num+"
is :"+frontNum);
            System.out.println("Position of "+x+"th digit from front
side of "+num+" is: "+fntPos);
            System.out.println(x+"th digit from back side of "+num+" is
:"+backNum);
            System.out.println("Position of "+x+"th digit from back
side of "+num+" is: "+backPos);


        }

}
```