**Numbers-6**

**Question 1:**

Report

**Marks: +10-0**

**Description:**

Write a program to print the Average of the Alternative Fibonacci Series in Between the Given Range?

**Constraints:**

Input          :- First Line of Input Consists of One Integer Value.

                     Second Line of Input Consists of One Integer Value.

Output        :- Print the Average of Fibonacci Series Between the Given Range.

Constraints  :- Given Inputs Must be Greater than or equal to Zero or else Print **Invalid Inputs**.

                     If there is no Fibonacci Series values between the Given Range then Print **No Fibonacci Series Values**.

**Example:**

Input 1  :    13

                  91

Output 1:    45.33

Input 2  :   200

                  5

Output 2:    35.25

**Explanation:**

Input 1  :    13

                  91

Output 1:    45.33

Explanation :

Fibonacci Series : 0 1 1 2 3 5 8 13 21 34 55 89 144 .............

In between the 13 and 91 the Fibonacci Series Values are 13 21 34 55 89

In between the 13 and 91 the Alternative Fibonacci Series Values are 13 34 89

Sum = 13 + 34 + 89

        = 136

Average = sum / 3

             = 136 / 3

             = 45.33

Input 2  :   200

                  5

Output 2:    35.25

Explanation :

Fibonacci Series : 0 1 1 2 3 5 8 13 21 34 55 89 144 .............

In between the 200 and 5 the Fibonacci Series Values are 13 21 34 55 89 144

In between the 200 and 5 the Fibonacci Series Values are 5 13 34 89

Sum = 5 + 13 + 34 + 89

        = 141

Average = sum / 4

             = 141 / 4

             = 35.25

**Your Code: java**

import java.util.Scanner;

class Main

{

public static void main(String[] args)

{

Scanner sc=new Scanner(System.in);

int x=sc.nextInt();

int y=sc.nextInt();

int a=0,b=1,c=0,s=0,e=0,d=0;

if(x<0 || y<0)

{

System.out.print("Invalid Inputs");

}

else{

if(x>y)

{

x=x+y-(y=x);

}

while(a<=y)

{

if(a>=x)

{

d++;

if(d%2==1)

{

s=s+a;

e++;

}

}

c=a+b;

a=b;

b=c;

}

if(e==0)

{

System.out.print("No Fibonacci Series Values");

}

else

{

System.out.printf("%.2f",(float)s/e);

}

}

}

}

**Question 2:**

Report

**Marks: +10-0**

**Description:**

Write a program to print Fibonacci Series Between the Given Range.

**Constraints:**

Input          :- First Line of Input Consists of One Integer Value.

                     Second Line of Input Consists of One Integer Value.

Output        :- Print the Fibonacci Series Between the Given Range.

Constraints  :- Given Inputs Must be Greater than or equal to Zero or else Print **Invalid Inputs**.

                     If there is no Fibonacci Series values between the Given Range then Print **No Fibonacci Series Values**.

**Example:**

Input 1  :    13

                  91

Output 1:    13 21 34 55 89

Input 2  :    200

                  10

Output 2:    13 21 34 55 89 144

**Explanation:**

Input 1  :    13

                  91

Output 1:    13 21 34 55 89

Explanation :

Fibonacci Series : 0 1 1 2 3 5 8 13 21 34 55 89 144 .............

In between the 13 and 91 the Fibonacci Series Values are **13 21 34 55 89**

Input 2  :    200

                  10

Output 2:    13 21 34 55 89 144

Explanation :

Fibonacci Series : 0 1 1 2 3 5 8 13 21 34 55 89 144 233 .............

In between the 10 and 200 the Fibonacci Series Values are 13 21 34 55 89 144

**Your Code: java**

import java.util.Scanner;

class Main

{

public static void main(String []args)

{

Scanner sc=new Scanner(System.in);

int start=sc.nextInt();

int end=sc.nextInt();

int a=0,b=1;

if(start<0 || end<0)

{

System.out.print("Invalid Inputs");

}

else{

if(start>end)

{

start=start+end-(end=start);

}

int count=0;

while(a<=end)

{

if(a>=start)

{

System.out.print(a+" ");

count++;

}

int c=a+b;

a=b;

b=c;

}

if(count==0)

{

System.out.println("No Fibonacci Series Values");

}

}

}

}

**Question 3:**

Report

**Marks: +10-0**

**Description:**

Write a program to print First N terms of Alternative Fibonacci Series?

**Constraints:**

Input          :- First Line of Input Consists of One Integer Value.

Output        :- Print the First N terms of Alternative Fibonacci Series.

Constraints  :- Given Input is Equals to Zero then Print **Invalid Input**.

                      If the Given Input is Negative then convert that number into Positive and Find and Print Fibonacci Series.

**Example:**

Input 1  :    10

Output 1:    0, 1, 3, 8, 21, 55, 144, 377, 987, 2584

Input 2  :    -16

Output 2:     0, 1, 3, 8, 21, 55, 144, 377, 987, 2584, 6765, 17711, 46368, 121393, 317811,  832040

**Explanation:**

Input 1  :    10

Output 1:    0, 1, 3, 8, 21, 55, 144, 377, 987, 2584

Explanation:

Fibonacci Series : 0 1 1 2 3 5 8 13 21 34 55 89 144 233 377 610 987 1597 2584 4181........

Alternative Fibonacci Series : 0 1 3 8 21 55 144 377 987 2584

Input 2  :    -16

Output 2:     0, 1, 3, 8, 21, 55, 144, 377, 987, 2584, 6765, 17711, 46368, 121393, 317811,  832040

Explanation:

Fibonacci Series : 0 1 1 2 3 5 8 13 21 34 55 89 144 233 377 610 987 1597 2584 4181 6765 10946 17711 28657 46368 75025 121393 196418 317811 514229 832040 1346269...........

Alternative Fibonacci Series : 0 1 3 8 21 55 144 377 987 2584 6765 17711 46368 121393 317811 832040

**Your Code: java**

import java.util.Scanner;

class Main

{

public static void main(String[] args)

{

Scanner sc=new Scanner(System.in);

int n=sc.nextInt();

int a=0,b=1,c=0,d=0;

if(n==0)

{

System.out.print("Invalid Input");

}

else{

if(n<0)

{

n=-n;

}

for(int i=0;i<(n\*2);i++){

d++;

if(d%2==1)

{

if(d==1)

{

System.out.print(a);

}

else{

System.out.print(", "+a);

}

}

c=a+b;

a=b;

b=c;

}

}

}

}

Numbers-6

**Question 4:**

Report

**Marks: +10-0**

**Description:**

Write a program to print First N terms in the Fibonacci Series?

**Constraints:**

Input          :- First Line of Input Consists of One Integer Value.

Output        :- Print the First N terms of Fibonacci Series.

Constraints  :- Given Input is Equals to Zero then Print **Invalid Input**.

                      If the Given Input is Negative then convert that number into Positive and Find and Print Fibonacci Series.

**Example:**

Input 1  :    10

Output 1:    0 1 1 2 3 5 8 13 21 34

Input 2  :    -16

Output 2:    0 1 1 2 3 5 8 13 21 34 55 89 144 233 377 610

**Explanation:**

Input 1  :    10

Output 1:    0 1 1 2 3 5 8 13 21 34

Input 2  :    -16

Output 2:    0 1 1 2 3 5 8 13 21 34 55 89 144 233 377 610

Explanation:

Fibonacci Series : It is nothing First 2 Numbers in Fibonacci Series are 0 and 1 and the next Numbers is formed by Addition of Before 2 Numbers. Like,

0 1 1 2 3 5 8 13 21 34 55 89 144.........................

**Your Code: java**

import java.util.Scanner;

class Main

{

public static void main(String []args)

{

Scanner sc=new Scanner(System.in);

int n=sc.nextInt();

int a=0,b=1;

int c=0;

if(n==0)

{

System.out.println("Invalid Input");

}

else

{

if(n<0)

{

n=-n;

}

System.out.print(a+" "+b);

for(int i=2;i<n;i++)

{

c=a+b;

System.out.print(" "+c);

a=b;

b=c;

}

}

}

}

**Question 5:**

Report

**Marks: +10-0**

**Description:**

Write a program to print the Average of the Fibonacci Series in Between the Given Range?

**Constraints:**

Input          :- First Line of Input Consists of One Integer Value.

                     Second Line of Input Consists of One Integer Value.

Output        :- Print the Average of Fibonacci Series Between the Given Range.

Constraints  :- Given Inputs Must be Greater than or equal to Zero or else Print **Invalid Inputs**.

                     If there is no Fibonacci Series values between the Given Range then Print **No Fibonacci Series Values**.

**Example:**

Input 1  :    13

                  91

Output 1:    42.40

Input 2  :   200

                  10

Output 2:    59.33

**Explanation:**

Input 1  :    13

                  91

Output 1:    42.40

Explanation :

Fibonacci Series : 0 1 1 2 3 5 8 13 21 34 55 89 144 .............

In between the 13 and 91 the Fibonacci Series Values are **13 21 34 55 89**

Sum = 13 + 21 + 34 + 55 + 89

        = 212

Average = sum / 5

             = 212 / 5

             = 42.40

Input 2  :   200

                  10

Output 2:    59.33

Explanation :

Fibonacci Series : 0 1 1 2 3 5 8 13 21 34 55 89 144 .............

In between the 200 and 10 the Fibonacci Series Values are 13 21 34 55 89 144

Sum = 13 + 21 + 34 + 55 + 89 + 144

        = 356

Average = sum / 6

             = 356 / 6

             = 59.33

**Your Code: java**

import java.util.Scanner;

class Main

{

public static void main(String []args)

{

Scanner sc=new Scanner(System.in);

int start=sc.nextInt();

int end=sc.nextInt();

if(start<0 || end<0)

{

System.out.println("Invalid Inputs");

}

else{

if(start>end)

{

start=start+end-(end=start);

}

int a=0,b=1,c=0;

int sum=0,count=0;

while(a<=end)

{

if(a>=start)

{

sum+=a;

count++;

}

c=a+b;

a=b;

b=c;

}

if(count==0)

{

System.out.println("No Fibonacci Series Values");

}

else{

float avg=(float)sum/count;

System.out.printf("%.2f",avg);

}

}

}

}

**Question 6:**

Report

**Marks: +10-0**

**Description:**

Write a program to print the Sum of the Fibonacci Series of first N terms.

**Constraints:**

Input          :- First Line of Input Consists of One Integer Value.

Output        :- Print the Sum of the First N terms of Fibonacci Series.

Constraints  :- Given Input is Must be Greater than Zero or else Print **Invalid Input**.

**Example:**

Input 1  :    10

Output 1:    88

Input 2  :    -16

Output 2:    Invalid Input

**Explanation:**

Input 1  :    10

Output 1:    88

Explanation:

Fibonacci Series : 0 1 1 2 3 5 8 13 21 34 55 89 144.........................

sum = 0 + 1 + 1 + 2 + 3 + 5 + 8 + 13 + 21 + 34

       = 88

Input 2  :    -16

Output 2:    Invalid Input

Explanation:

                 Given Input is Not Greater than 0 So Printing **Invalid Input**( Check the Constraints ).

**Your Code: java**

import java.util.Scanner;

class Main

{

public static void main(String []args)

{

Scanner sc=new Scanner(System.in);

int n=sc.nextInt();

if(n<=0)

{

System.out.print("Invalid Input");

}

else{

int a=0,b=1;

int sum=0;

for(int i=1;i<=n;i++)

{

sum+=a;

int c=a+b;

a=b;

b=c;

}

System.out.println(sum);

}

}

}