

**But I have promises to keep,
And miles to go before I sleep,
And miles to go before I sleep**

Robert Frost...

Still 4 rounds are ahead to conquer.....

Your Destination is National Final of

Infosys Aspiration 2020

Strategies to Conquer



GIFTians have shown their proficiency at Aspiration 2020 Teaser Round by placing themselves at 2nd Top of Eastern Zone.

Now, College Round is ahead of You(From 18th January-2nd February, 2010) and getting success is not at all a magic but resultant of Planned effort and Hard Hit Hard Work towards the goal ahead.

Hence, the proposed road map is:

Splendor Level: -This is the brush up round, where student groups should refresh the basic programming skills in the light of Infosys format.

The Question set will be available on www.giftians.com from 13th January, 2010, and will also mailed to individual students giftians mail account.

Students are advised to complete this round by 16th January 2010.

Gladiator Level: - This round will expose to the students with programs of medium level complexity in the Infosys question format.

The question set will be available on www.giftians.com from 17th January, 2010, and will also mailed to individual students giftians mail account.

Students are advised to complete this round by 22nd January 2010.

Hunk Level: - This round will expose the students with programs of highest complexity level.

The Question set will be available on www.giftians.com from 22nd January, 2010, and will also mailed to individual students giftians mail account.

Students are advised to complete this round by 26nd January 2010.

Judgement Day - There will be three online examinations from 25th – 27th January, 2010.

Each test will consists of three questions from splendor level, three questions from gladiator level and one question from hunk level.

Duration of examination will be 3hrs

There will three set of questions on each day of three days of examination.

From 28th January to 1st February 2010 students should appear the Infosys College round Test.

For Further Assistance Please Contact: Ms. R.R.Panda, Mr. Mousumi Hota, Mr. C.N.Padhy, Mr. Vikas Kumar.

24Hrs. Help Line:

9238313756, 9238313735, 9861231113

Splendor Level

Series Problems

Write a program to generate Fibonacci series. The user need to enter the number of Cycles as input. If user entered any number less than equal to 0, the program should prompt the error message “Fibonacci Series Not Possible”.

Example-1

Input

Enter Number of Cycles: **8**

Output

0 1 1 2 3 5 8 13

Example-2

Input

Enter Number of Cycles: **-5**

Output

Fibonacci Series Not Possible

Write a program to generate Fibonacci Series up to nth Value. The user should enter the nth value as input. If user entered any number less than equal to 0, the program should prompt the error message “Fibonacci Series Not Possible”.

Example-1

Input

Enter the Nth Value: **15**

Output

0 1 1 2 3 5 8 13

Example-2

Input

Enter the Nath Value: **-5**

Output

Fibonacci Series Not Possible

Write a program to generate Series of the following pattern.

1 1 2 4 7 13 24 44

The user should input number of cycles as input. If user entered any number less than equal to 0, the program should prompt the error message “Series Not Possible”.

Example-1

Input

Enter Number of Cycles: **9**

Output

0 1 1 2 4 7 13 24 44

Example-2

Input

Enter Number of Cycles: **-5**

Output

Fibonacci Series Not Possible

Write a program to find the factorial of an positive integer. If user entered a negative number it should prompt “Factorial of the number does not exists”

Write a program to print the sum of the following series(Without using pow() library function)

$S = 1 + x + x^2 + x^3 + x^4 + \dots \dots \dots n \text{ terms}$

Write a program to print the sum of the following series(Without using pow() library function)
 $S = -x + x^2 - x^3 + x^4 + \dots \dots \dots n$ terms

Write a program to print the sum of the following series(Without using pow() library function)
 $S = 1 + x + x^2 / 2! + x^3 / 3! + x^4 / 4! + \dots \dots \dots n$ terms

Write a program to print the sum of the following series(Without using pow() library function)
 $S = 1 - x + x^2 / 2! - x^3 / 3! + x^4 / 4! + \dots \dots \dots n$ terms

Write a program to print the sum of the following series(Without using pow() library function)
 $S = 1 + (1+2) + (1+2+3) + \dots n$ terms

B. Digit Manipulation Based Programs

Write a program to find the length of a number.

Example-1:

Input

Enter a Number: **43251**

Output:

Number of Digits are: **5**

Write a program to reverse a given number

Example-1:

Input

Enter a Number: **43251**

Output:

Reverse of the number is: **15234**

3. Write a program to check a number whether palindrome or not. A number is said to be palindrome, when reverse of that number is same as the given number.

Example-1:

Input

Enter a Number: **12221**

Output:

The Number is palindrome

Example-1:

Input

Enter a Number: **43251**

Output:

The Number is not a palindrome

4. Write a program to print all palindrome numbers within an input range. A number is said to be palindrome, when reverse of that number is same as the given number .

Example-1:

Input

Enter the Range: 10
100

Output:

11 22 33 44 55 66 77 88 99 101 111 121 131 141 151 161 171 181 191

5. Write a program to print the prime numbers within a given range. A number is said to be prime when it is divisible only by 1 or itself.

Example-1:

Input

Enter a Number: **1**
30

Output:

2 3 5 7 11 13 17 19 23 29

5. Write a program to convert the base of a number of base-10 to any other base within base-10. The user should enter a number of base-10 and should enter the target base as input. If the user has entered the target base less than 2, then prompt “Invalid Target Base”, if user has entered the target base as greater than 9, then prompt “Unable to convert the base”.

Example-1:

Input

Enter a Number: **13**
Enter the target base: **5**

Output:

The resultant number Is: **23**

Example-2

Input

Enter a Number: 15
Enter the target base: **1**

Output:

Invalid Target Base

Example-3

Input

Enter a Number: **15**
Enter the target base: **12**

Output:

Unable to Convert the base

6. Write a program to convert the base of a number of any base within base-10 to a base-10 number The user should enter a number and it's base as input. If the user has entered the base less than 2, then prompt “**Invalid Base**”, if user has entered the number whose digits are not the element of the given base set then prompt “**Invalid Number...Hence cannot convert the base**”.

Example-1:

Input

Enter a Number: **1101**
Enter the target base: **2**

Output:

The resultant number Is: **13**

Example-2

Input

Enter a Number: 15
Enter the target base: **1**

Output:

Invalid Base

Example-3

Input

Enter a Number: 234
Enter the target base: 3

Output:

Invalid Number...Hence cannot convert the base

Explanation:

A number is said to be valid, if and only if the set collecting digits of the number is subset of the base set.

For Example:

$$N = (2415)_3$$

Let Set D consists of all digits of N i.e., $D = \{1, 2, 4, 5\}$

And Base Set $B = \{0, 1, 2\}$

Hence, D is not the sub set of B, hence the $(2415)_3$ is invalid with respect to base-3

7. Write a program to print the prime digits of a number.

Example-1:

Input

Enter a Number: **62345**

Output: 2 3 5

8. Write a program to find the occurrence of each digit in a number.

Example-1:

Input

Enter a Number: **421324526**

Output:

1 - 1 time(s)

2 - 3 time(s)

3 - 1 time(s)

4 - 2 time(s)

5 - 1 time(s)

6 - 1 time(s)

Write a program to print the number of digits in the integer part of the number and fractional part of the number.

Example-1:

Input

Enter a Number: **23456.53**

Output:

Number of digits in the Integer Part is: 5

Number of digits in the fraction part is: 2

Write a program to split a number into two halves, reverse each halves and join again. If the number contains only one digit, then prompt the message "Cannot reverse ...Due to single digit number".

Example-1:

Input

Enter a Number: **23456.5**

Output:

432565

Example-1:

Input

Enter a Number: **4**

Output:

Cannot reverse.....Due to single Digit

Write a program to perform the operation of ceiling, floor and round on a given fraction number up to a given number of digits. In case the number is an integer, then prompt the message that "Cannot perform the operation".

Write a program to find the prime factors of a number. If the number is found to be prime number, then prompt the error message "The number is a prime number, hence there is no factors exists"

Example-1

Input:

Enter a number: 42

Output

Prime Factors are: 2 3 7

Example-2

Input

Enter a number: 43

Output

The number is a prime number, hence there is no factors exists

Write a program to split a number into two halves, reverse each halves and join again. If the number is a single digit, than prompt the message " Split operation cannot be performed"

Example 1:

Input:

Enter a Number: 2356

Output:

3265

Example 2:

Input:

Enter a number: 8

Output:

Split operation cannot be performed

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