

**Homework Assignment #5**

**Group#: 5**

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**Homework Assignment**

1. Write a C program to compute factorial of a number using for loop. Factorial is represented using '!', so five factorial will be written as (5!), n factorial as (n!). Also n! = n\*(n-1)\*(n-2)\*(n-3)...3.2.1 and zero factorial is defined as one i.e. 0! = 1.

#include<stdio.h>

int main()

{

int i,n,fact=1;

printf("Enter a number to calculate its factorial: ");

scanf("%d",&n);

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

{

fact=fact\*i;

printf("factorial of %d is %d\n",i,fact);

}

}

2. The harmonic mean is another way of calculating the mean for a set of numbers. The harmonic mean of a set of numbers is given by the equation  
Write a program that will input 10 number (i.e. N = 10) of positive input values and calculate the harmonic mean of the numbers.

#include<stdio.h>

int main()

{

int i,sum=0,N=10,k;

float mean;

for (i=1;i<=10;i++)

{

printf("Enter Number(%d): \n",i);

scanf("%d",&k);

sum=sum+k;

}

mean=(float)sum/N;

printf("Sum=%d\n",sum);

printf("Mean=%.1f",mean);

}

3. Write a program that inputs a number and prints its square and cube values. The program should repeat this process, unless the input number is a negative value.

#include<stdio.h>

int main()

{

int i,n;

printf("Enter a number: ");

scanf("%d",&n);

if (n>0)

{

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

{

}

printf("Square of %d is %d\n",i,i\*i);

printf("Cube of %d is %d\n",i,i\*i\*i);

}

else

printf("invalid input\n");

}

4. Write a program to find the range of a set of n numbers. The numbers are input through the keyboard via a loop. Range is the difference between the smallest and biggest numbers in the list. Hint: Inside the loop, find the minimum and the maximum number.

#include<stdio.h>

int main()

{

int i,num,N,max,min,range,Nth;

printf("How many numbers do you want to enter: \n");

scanf("%d",&N);

printf("Enter the Nth number: \n");

scanf("%d",&Nth);

min=Nth;

max=Nth;

for (i=1;i<=N;i++)

{

printf("Enter Number(%d): \n",i);

scanf("%d",&num);

if (num>max)

max=num;

if (num<min)

min=num;

}

range=max-min;

printf("Max=%d\n",max);

printf("Min=%d\n",min);

printf("Range=%d\n",range);

}