# CSA02- C Programming

C GAYATRI

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**Questions**
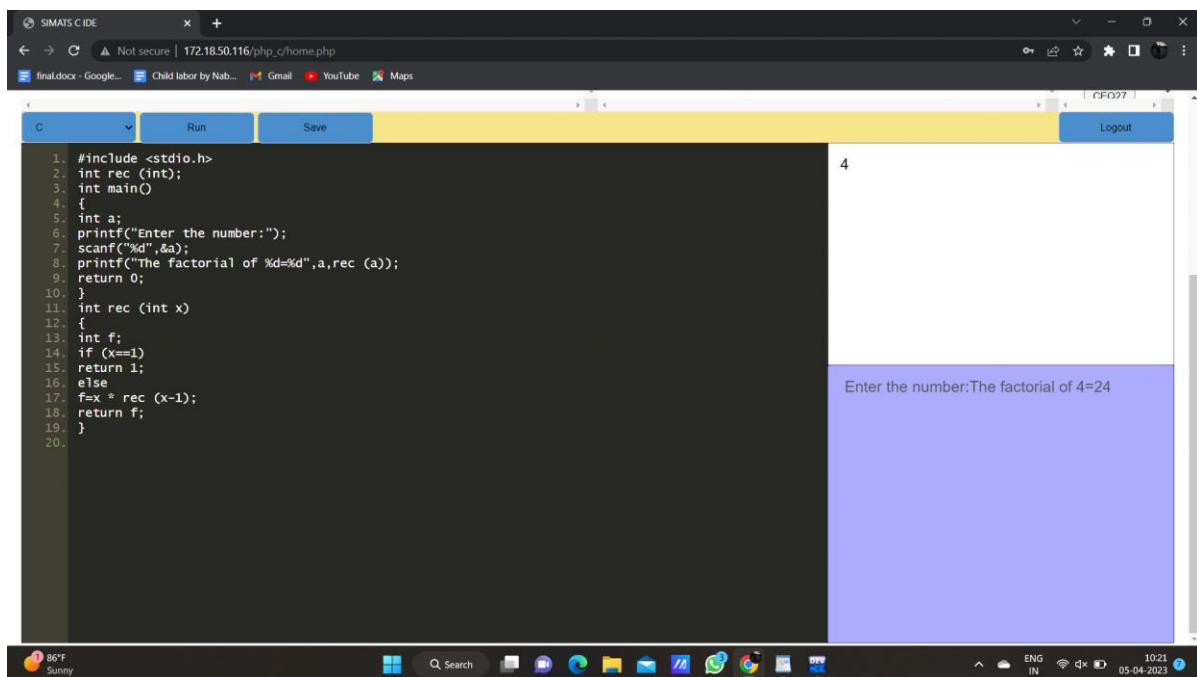CEQ20.

Find the factorial of n?

Sample Input:
N = 4

Sample Output:
4 Factorial = 24



```c
#include <stdio.h>
int rec (int);
int main()
{
int a;
printf("Enter the number:");
scanf("%d",&a);
printf("The factorial of %d=%d",a,rec (a));
return 0;
}
int rec (int x)
{
int f;
if (x==1)
return 1;
else
f=x * rec (x-1);
return f;
}
```

Enter the number:The factorial of 4=24

**Questions**
CEQ22.

Find the year of the given date is leap year or not

Sample Input:
Enter Date: 04/11/1947

Sample Output:
Given year is Non Leap Year



```c
#include <stdio.h>
int main()
{
int year;
printf ("\n please enter any number you wish\n");
scanf("%d",&year);
if (( year%400==0)||((year==0) && (year%100!=0)))
printf("\n %d is a leap.\n",year);
else
printf("\n %d is not.\n",year);
return 0;
}
```

1947

please enter any number you wish

1947 is not.

## Questions
CEQ23.

Find the number of factors for the given number

Sample Input:
Given number: 100

Sample Output:
Number of factors = 9

## Questions
CEQ24.

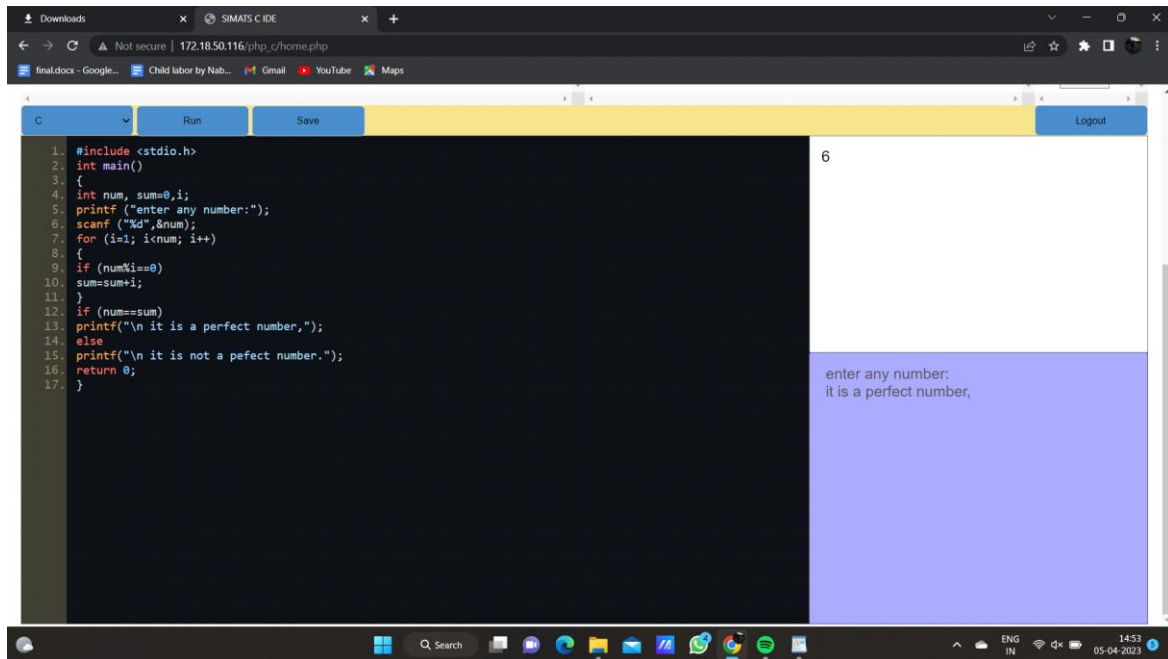Write a program to print the given number is Perfect number or not?

Sample Input:
Given Number: 6

Sample Output:
It's a Perfect Number

```c
#include <stdio.h>
int main()
{
    int num, sum=0,i;
    printf ("enter any number:");
    scanf ("%d",&num);
    for (i=1; i<num; i++)
    {
        if (num%i==0)
            sum=sum+i;
    }
    if (num==sum)
        printf("\n it is a perfect number,");
    else
        printf("\n it is not a pefect number.");
    return 0;
}
```

Output:
```
6
enter any number:
it is a perfect number,
```
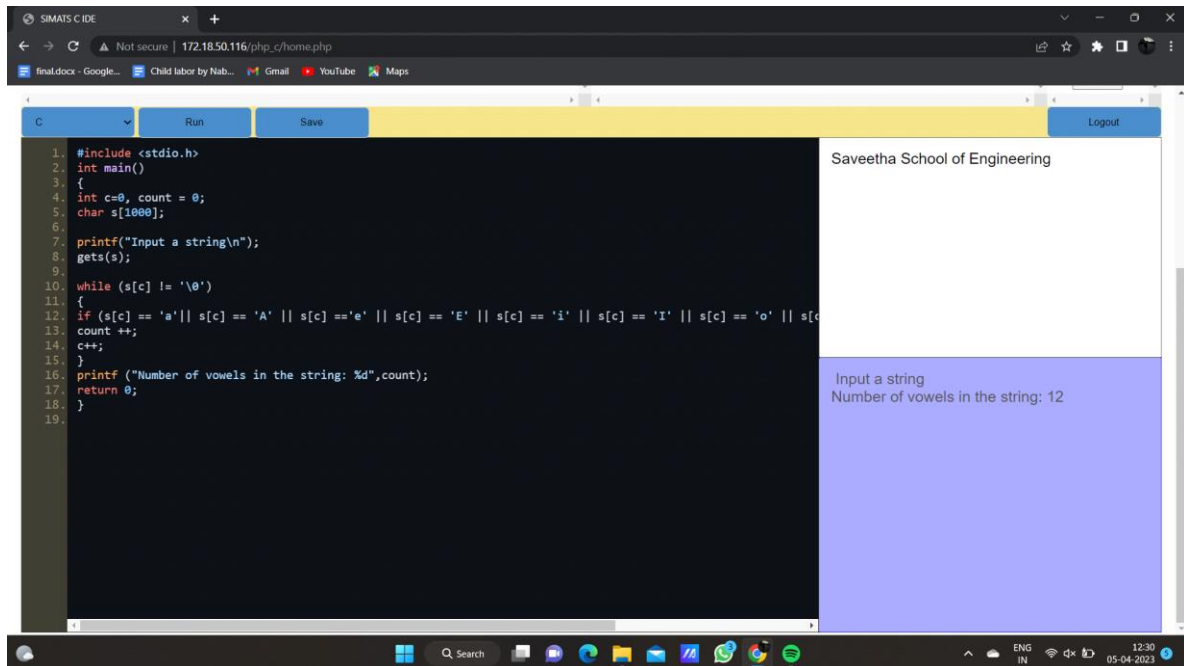
## Questions
CEQ25.

Write a program to print the number of vowels in the given statement?

Sample Input:
Saveetha School of Engineering

Sample Output:
Number o vowels = 12

```c
#include <stdio.h>
int main()
{
int c=0, count = 0;
char s[1000];

printf("Input a string\n");
gets(s);

while (s[c] != '\0')
{
if (s[c] == 'a'|| s[c] == 'A' || s[c] =='e' || s[c] == 'E' || s[c] == 'i' || s[c] == 'I' || s[c] == 'o' || s[c
count ++;
c++;
}
printf ("Number of vowels in the string: %d",count);
return 0;
}
```

Saveetha School of Engineering

Input a string
Number of vowels in the string: 12
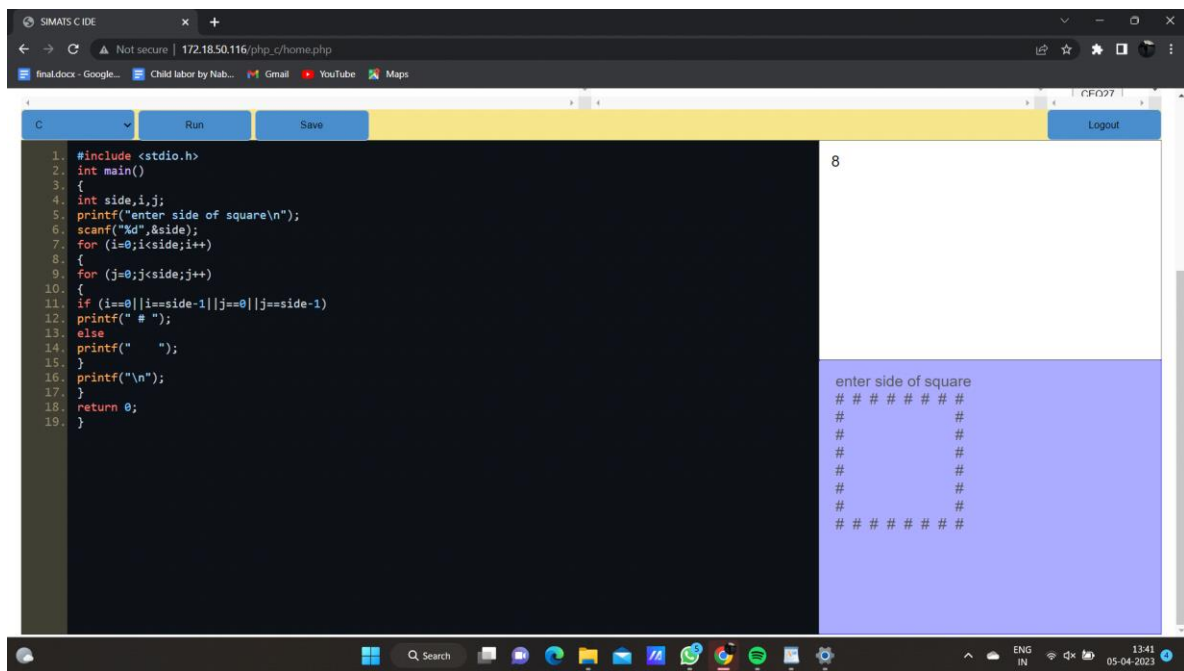
## Questions
CEQ26.

Write a program to print hollow square symbol pattern?
Get the symbol from user.

Sample Input: #

Output:
```
# # # # #
#       #
#       #
# # # # #
```

**Questions**
CEQ21.

Write a program to print the following pattern

Sample Input:
Enter the Character to be printed: %
Max Number of time printed: 3
%
% %
% % %



```c
#include <stdio.h>
int main()
{
int rows = 3;
for (int i=0;i<rows;i++)
{
for (int j=0;j<=i;j++)
{
printf("* ");
}
printf("\n");
}
return 0;
}
```

**Questions**
CEQ2.

Write a program to check the entered user name is valid or not. Get both the inputs from the u
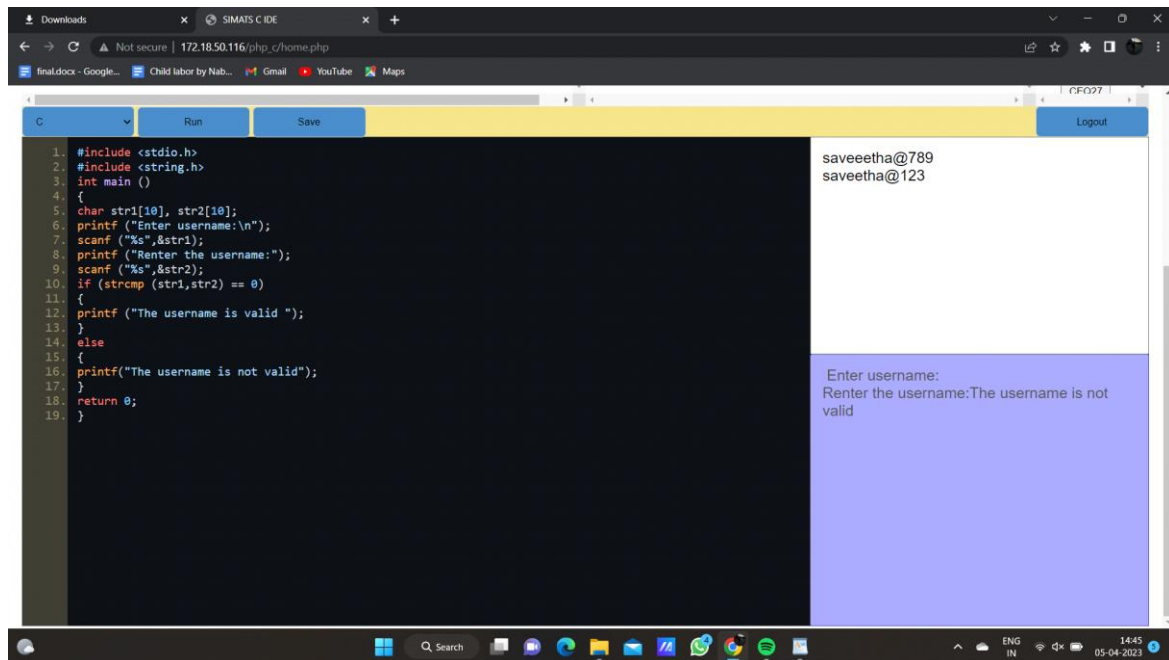
Sample Input:
Enter the user name: Saveetha@789
Reenter the user name: Saveetha@123

Sample Output:
User name is Invalid



```c
#include <stdio.h>
#include <string.h>
int main ()
{
char str1[10], str2[10];
printf ("Enter username:\n");
scanf ("%s",&str1);
printf ("Renter the username:");
scanf ("%s",&str2);
if (strcmp (str1,str2) == 0)
{
printf ("The username is valid ");
}
else
{
printf("The username is not valid");
}
return 0;
}
```

saveeetha@789
saveetha@123

 Enter username:
Renter the username:The username is not valid

**Questions**
CEQ27.

Write a program to print consonants and vowels separately in the given word.

Sample Input:
Given Word: Engineering

Sample Output:
Consonants: n g n r n g
Vowels: e i e ei

```c
#include<stdio.h>
#include<string.h>
int main()
{
char str[100];
int vowels=0, consonants=0;
printf("Enter a string:");
gets(str);
for(int i=0;i<strlen(str);i++)
{
if(str[i]=='a'|| str[i]=='e'|| str[i]=='i'|| str[i]=='o'|| str[i]=='u'|| str[i]=='A'|| str[i]=='E'|| str[i]=='I
{
vowels++;
}
else if((str[i]>='a'&& str[i]<='z') || (str[i]>='A'&& str[i]<='Z'))
{
consonants++;
}
}
printf("Vowels:%d\n",vowels);
printf("consonants:%d\n",consonants);
return 0;
}
```
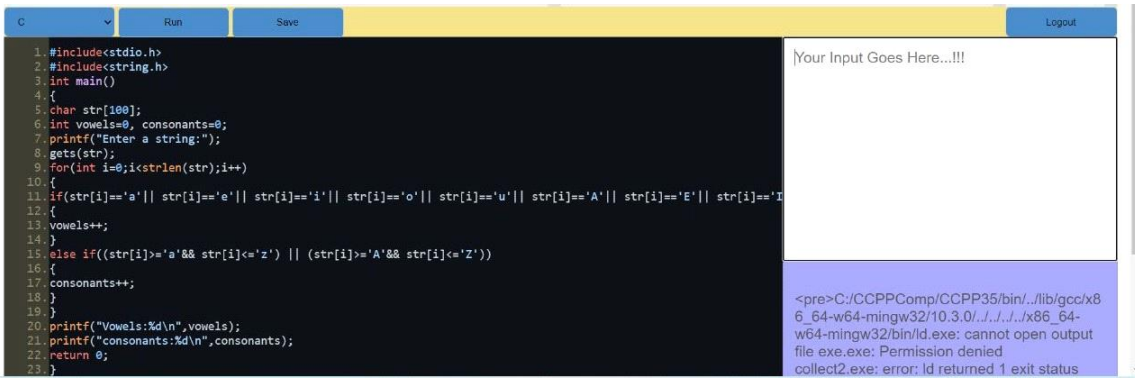
Your Input Goes Here...!!!

<pre>C:/CCPPComp/CCPP35/bin/../lib/gcc/x8
6_64-w64-mingw32/10.3.0/../../../../x86_64-
w64-mingw32/bin/ld.exe: cannot open output
file exe.exe: Permission denied
collect2.exe: error: ld returned 1 exit status

## 9.

**Questions**
CEQ19.

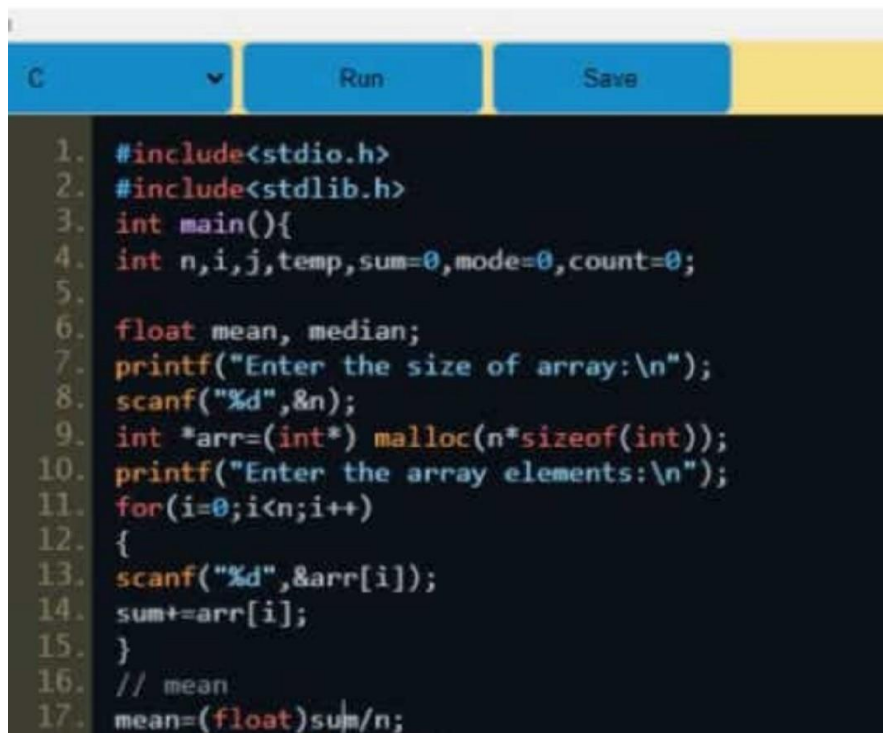Find the Mean, Median, Mode of the array of numbers?

Sample Input;:
Array of elements = {16, 18, 27, 16, 23, 21, 19}

Sample Output:
Mean = 20
Median = 19
Mode = 16

```c
#include<stdio.h>
#include<stdlib.h>
int main(){
int n,i,j,temp,sum=0,mode=0,count=0;

float mean, median;
printf("Enter the size of array:\n");
scanf("%d",&n);
int *arr=(int*) malloc(n*sizeof(int));
printf("Enter the array elements:\n");
for(i=0;i<n;i++)
{
scanf("%d",&arr[i]);
sum+=arr[i];
}
// mean
mean=(float)sum/n;
```

```
18.    for(i=0;i<n-1;i++) {
19.       for(j=i+1;j<n;j++)  {
20.          if(arr[i]>arr[j])  {
21.             temp=arr[i];
22.             arr[i]=arr[j];
23.             arr[j]=temp;
24.          }
25.       }
26.    }
27.    if(n%2==0)  {
28.       median=(arr[n/2-1]+arr[n/2])/2;
29.    }
30.    else {
31.          median=arr[n/2];
32.    }
33.    // mode
34.    for(i=0;i<n;i++)
35.    {
36.    count =0;
37.    for(j=1;j<n;j++)
38.    {
39.    if(arr[i]==arr[j])
40.    {
41.    count++;
42.    }
43.    }
44.    if(count>mode)
45.    {
46.    mode =count;
47.    }
```