

CSA02- C Programming

C GAYATRI

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Questions

CEQ20.

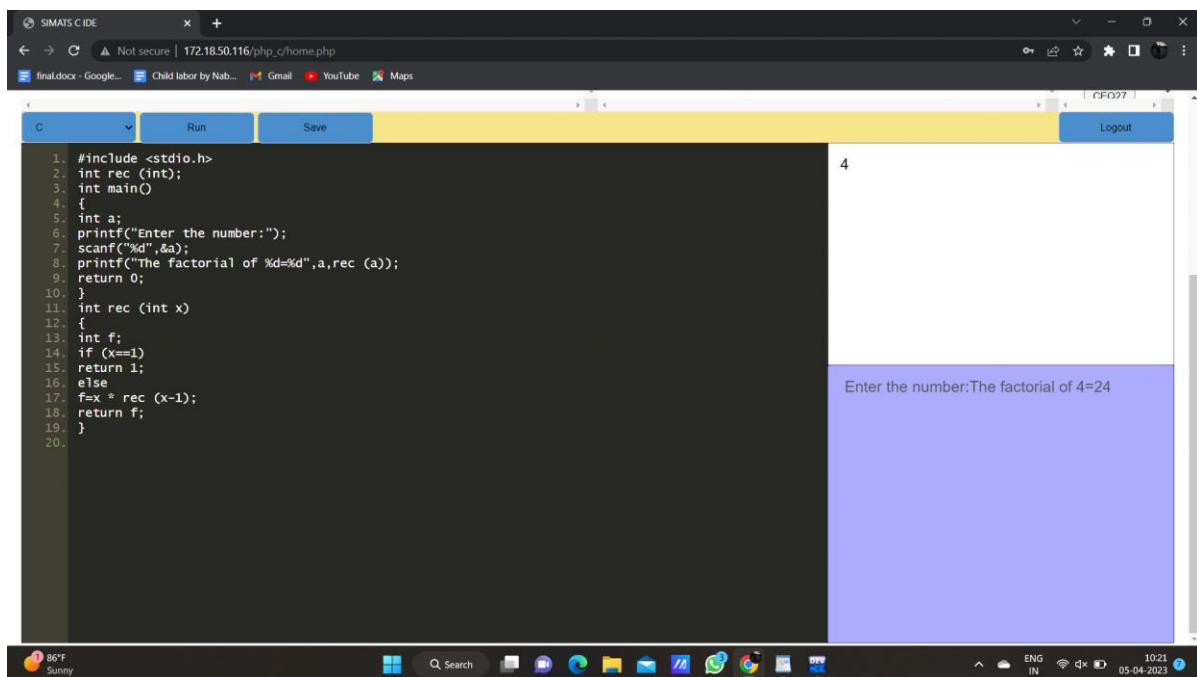
Find the factorial of n?

Sample Input:

N = 4

Sample Output:

4 Factorial = 24



The screenshot shows a web browser window with a C IDE. The browser address bar shows "Not secure | 172.18.50.116/php_c/home.php". The IDE has a menu bar with "C", "Run", "Save", and "Logout". The code editor contains the following C program:

```
1. #include <stdio.h>
2. int rec (int);
3. int main()
4. {
5.     int a;
6.     printf("Enter the number:");
7.     scanf("%d",&a);
8.     printf("The factorial of %d=%d",a,rec (a));
9.     return 0;
10. }
11. int rec (int x)
12. {
13.     int f;
14.     if (x==1)
15.         return 1;
16.     else
17.         f=x * rec (x-1);
18.     return f;
19. }
20.
```

The output window on the right shows the input "4" and the output "Enter the number:The factorial of 4=24". The Windows taskbar at the bottom shows the date and time as "05-04-2023 10:21".

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

The screenshot shows a web browser window with the address bar displaying "172.18.50.116/php_c/home.php". The browser tabs include "final.docx - Google...", "Child labor by Nab...", "Gmail", "YouTube", and "Maps". The main content area displays a C program in the SIMAIS C IDE. The code is as follows:

```
1. #include <stdio.h>
2. int main()
3. {
4.     int year;
5.     printf("\n please enter any number you wish\n");
6.     scanf("%d",&year);
7.     if ((year%400==0)||((year==0) && (year%100!=0)))
8.         printf("\n %d is a leap.\n",year);
9.     else
10.        printf("\n %d is not.\n",year);
11.    return 0;
12. }
```

The output of the program is displayed on the right side of the IDE. It shows the input "1947" and the resulting output "1947 is not." The output area has a light blue background.

The Windows taskbar at the bottom shows the system clock as 10:35 on 05-04-2023, with the language set to ENG IN.

Questions

CEQ23.

Find the number of factors for the given number

Sample Input:

Given number: 100

Sample Output:

Number of factors = 9

```
1. #include<stdio.h>
2. int main()
3. {
4.     int num;
5.     printf("\nEnter the number:");
6.     scanf("%d",&num);
7.     int i,count = 0;
8.     printf("\nThe factors of %d are: ", num);
9.     for(i = 1;i <= num; i++)
10.    {
11.        if(num % i ==0)
12.        {
13.            ++count;
14.            printf("%d ",i);
15.        }
16.    }
17.    printf("\n\nTotal factors of %d : %d\n",num,count);
18. }
```

100

Enter the number:
The factors of 100 are: 1 2 4 5 10 20 25 50
100

Total factors of 100 : 9

Questions

CEQ24.

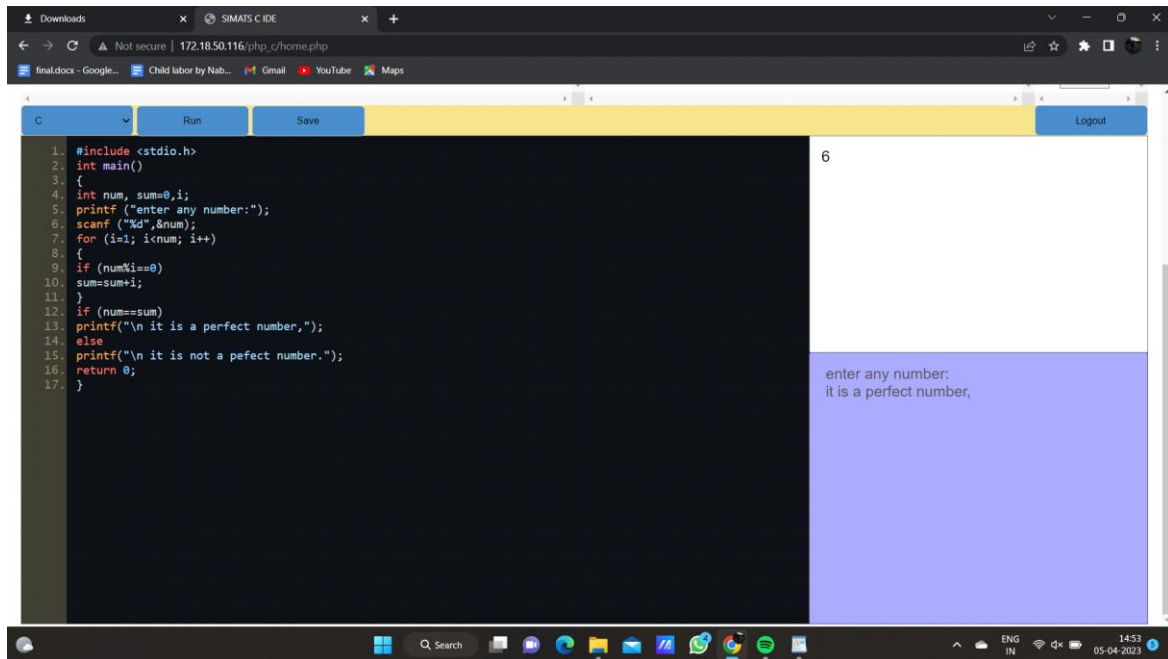
Write a program to print the given number is Perfect number or not?

Sample Input:

Given Number: 6

Sample Output:

It's a Perfect Number



The screenshot shows a web browser window with the address bar displaying "Not secure | 172.18.50.116/php_c/home.php". The browser tabs include "Downloads", "SIMATS C IDE", and a plus sign for more tabs. The browser's address bar also shows "finaldocx - Google...", "Child labor by Nab...", "Gmail", "YouTube", and "Maps".

The main content area of the browser displays a C program in the SIMATS C IDE. The program is as follows:

```
1. #include <stdio.h>
2. int main()
3. {
4.     int num, sum=0, i;
5.     printf("enter any number:");
6.     scanf("%d", &num);
7.     for (i=1; i<num; i++)
8.     {
9.         if (num%i==0)
10.            sum=sum+i;
11.     }
12.     if (num==sum)
13.         printf("\n it is a perfect number,");
14.     else
15.         printf("\n it is not a pfect number.");
16.     return 0;
17. }
```

The output of the program is displayed on the right side of the IDE. It shows the input "6" and the output "enter any number: it is a perfect number,".

The Windows taskbar is visible at the bottom of the screen, showing the Start button, Search bar, and various application icons. The system tray on the right shows the language "ENG IN", signal strength, and the date and time "14:53 05-04-2023".

Questions

CEQ25.

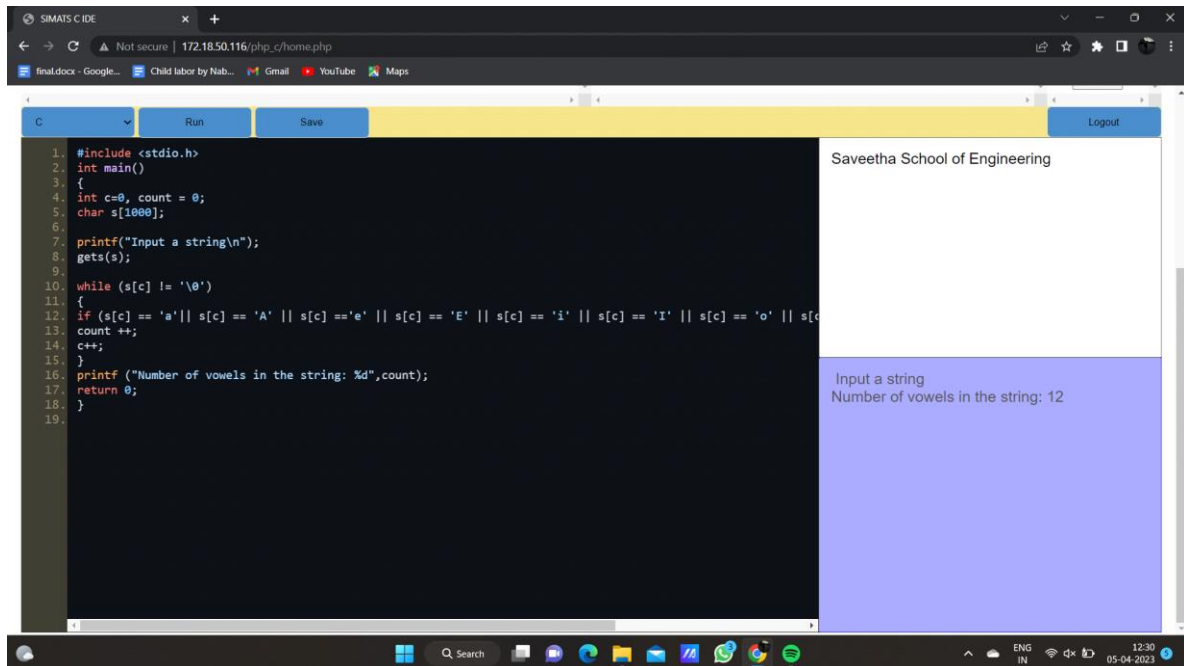
Write a program to print the number of vowels in the given statement?

Sample Input:

Saveetha School of Engineering

Sample Output:

Number o vowels = 12



The screenshot shows a web browser window with the address bar displaying "Not secure | 172.18.50.116/php_c/home.php". The browser tabs include "final.docx - Google...", "Child labor by Nab...", "Gmail", "YouTube", and "Maps". The main content area displays a C program in the SIMATS C IDE. The program code is as follows:

```
1. #include <stdio.h>
2. int main()
3. {
4.     int c=0, count = 0;
5.     char s[1000];
6.
7.     printf("Input a string\n");
8.     gets(s);
9.
10.    while (s[c] != '\0')
11.    {
12.        if (s[c] == 'a' || s[c] == 'A' || s[c] == 'e' || s[c] == 'E' || s[c] == 'i' || s[c] == 'I' || s[c] == 'o' || s[c] == 'O')
13.            count++;
14.        c++;
15.    }
16.    printf("Number of vowels in the string: %d",count);
17.    return 0;
18. }
```

The output of the program is displayed in a light blue box on the right side of the IDE, showing "Input a string" and "Number of vowels in the string: 12". The Windows taskbar at the bottom shows the system clock as 12:30 on 05-04-2023.

Questions

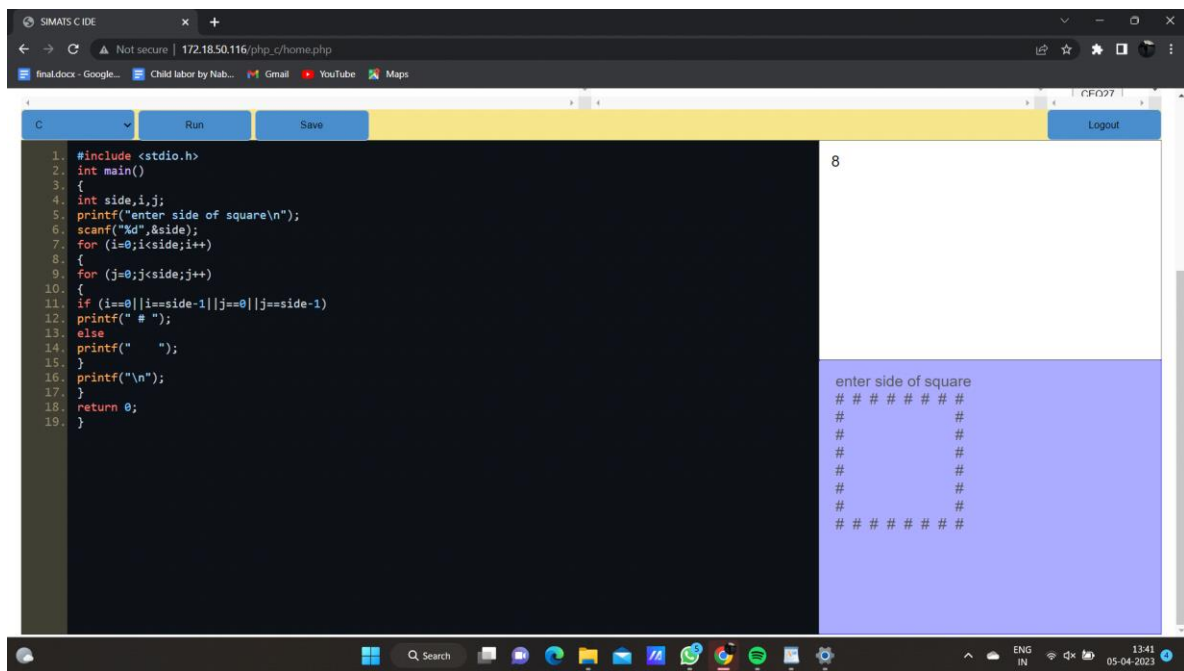
CEQ26.

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

Sample Input: #

Output:

```
# # # # #
#       #
#       #
#       #
# # # # #
```



The screenshot shows a C program in the SIMATS C IDE. The program prompts the user to enter the side of a square, and the user has entered '8'. The program then prints a hollow square pattern using the '#' symbol. The pattern consists of 8 rows and 8 columns, with the outer border filled with '#' and the inner area being empty.

```
1. #include <stdio.h>
2. int main()
3. {
4.     int side,i,j;
5.     printf("enter side of square\n");
6.     scanf("%d",&side);
7.     for (i=0;i<side;i++)
8.     {
9.         for (j=0;j<side;j++)
10.        {
11.            if (i==0||i==side-1||j==0||j==side-1)
12.                printf(" # ");
13.            else
14.                printf("   ");
15.        }
16.        printf("\n");
17.    }
18.    return 0;
19. }
```

enter side of square
8

```
# # # # #
#       #
#       #
#       #
#       #
#       #
#       #
# # # # #
```

Questions

CEQ21.

Write a program to print the following pattern

Sample Input:

Enter the Character to be printed: %

Max Number of time printed: 3

%

% %

% % %

```
1. #include <stdio.h>
2. int main()
3. {
4.     int rows = 3;
5.     for (int i=0;i<rows;i++)
6.     {
7.         for (int j=0;j<=i;j++)
8.         {
9.             printf("* ");
10.        }
11.        printf("\n");
12.    }
13.    return 0;
14. }
```

Your Input Goes Here....!!!

```
*
**
***
```

Questions

CEQ2.

Write a program to check the entered user name is valid or not. Get both the inputs from the u

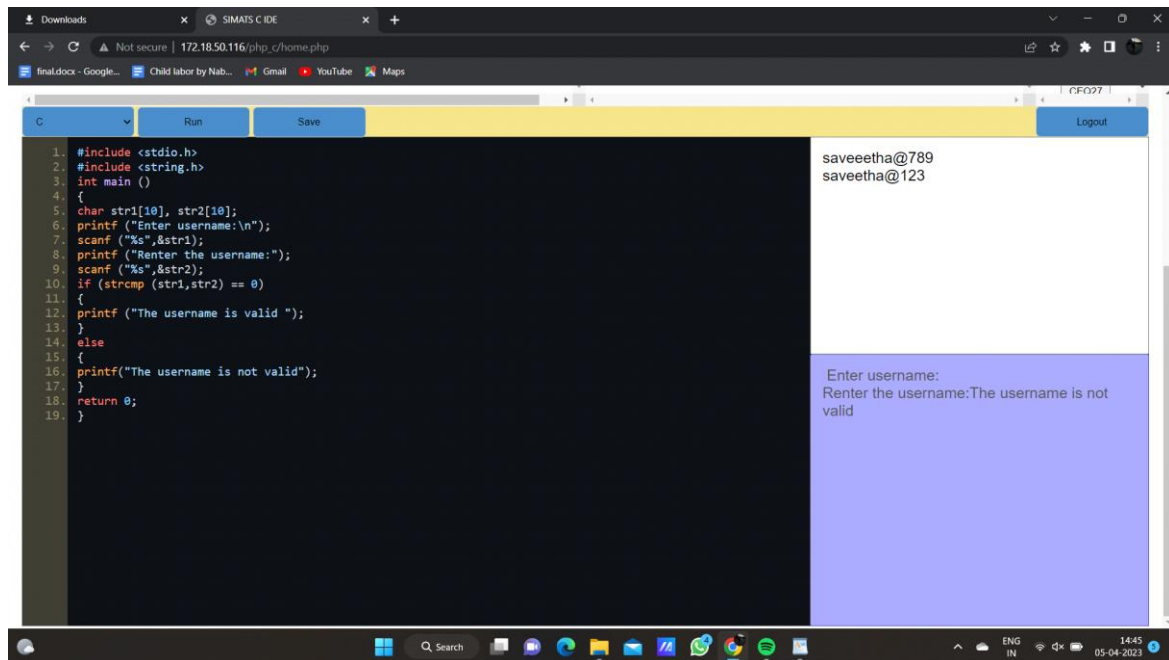
Sample Input:

Enter the user name: Saveetha@789

Reenter the user name: Saveetha@123

Sample Output:

User name is Invalid



```
1. #include <stdio.h>
2. #include <string.h>
3. int main ()
4. {
5.     char str1[10], str2[10];
6.     printf ("Enter username:\n");
7.     scanf ("%s",&str1);
8.     printf ("Reenter the username:");
9.     scanf ("%s",&str2);
10.    if (strcmp (str1,str2) == 0)
11.    {
12.        printf ("The username is valid ");
13.    }
14.    else
15.    {
16.        printf("The username is not valid");
17.    }
18.    return 0;
19. }
```

saveeetha@789
saveeetha@123

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

Questions

CEQ27.

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

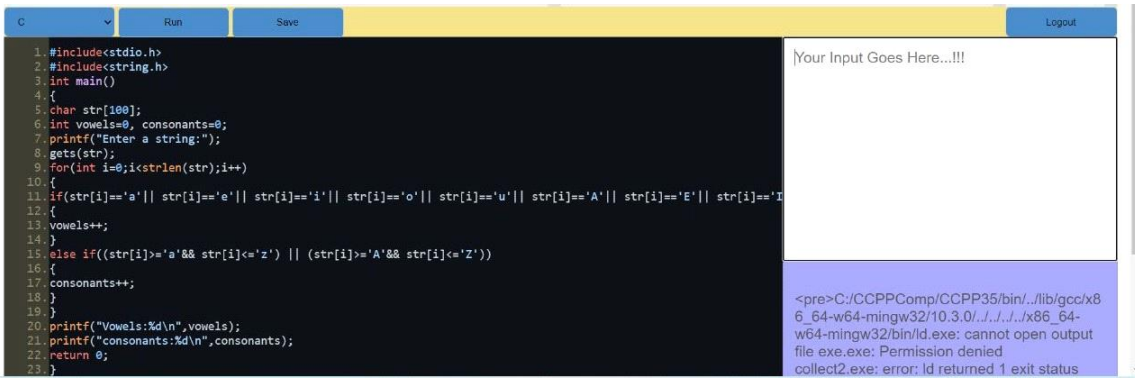
Sample Input:

Given Word: Engineering

Sample Output:

Consonants: n g n r n g

Vowels: e i e ei



The screenshot shows a C++ IDE with a dark theme. The code is as follows:

```
1. #include<stdio.h>
2. #include<string.h>
3. int main()
4. {
5.     char str[100];
6.     int vowels=0, consonants=0;
7.     printf("Enter a string:");
8.     gets(str);
9.     for(int i=0; i<strlen(str); i++)
10.    {
11.        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' || str[i]=='O' || str[i]=='U')
12.        {
13.            vowels++;
14.        }
15.        else if((str[i]>='a' && str[i]<='z') || (str[i]>='A' && str[i]<='Z'))
16.        {
17.            consonants++;
18.        }
19.    }
20.    printf("Vowels:%d\n", vowels);
21.    printf("Consonants:%d\n", consonants);
22.    return 0;
23. }
```

On the right side, there is a text input area with the placeholder text "Your Input Goes Here...!!!". Below it, a command prompt window shows the following error message:

```
<pre>C:/CCPPComp/CCPP35/bin/./lib/gcc/x86_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;:

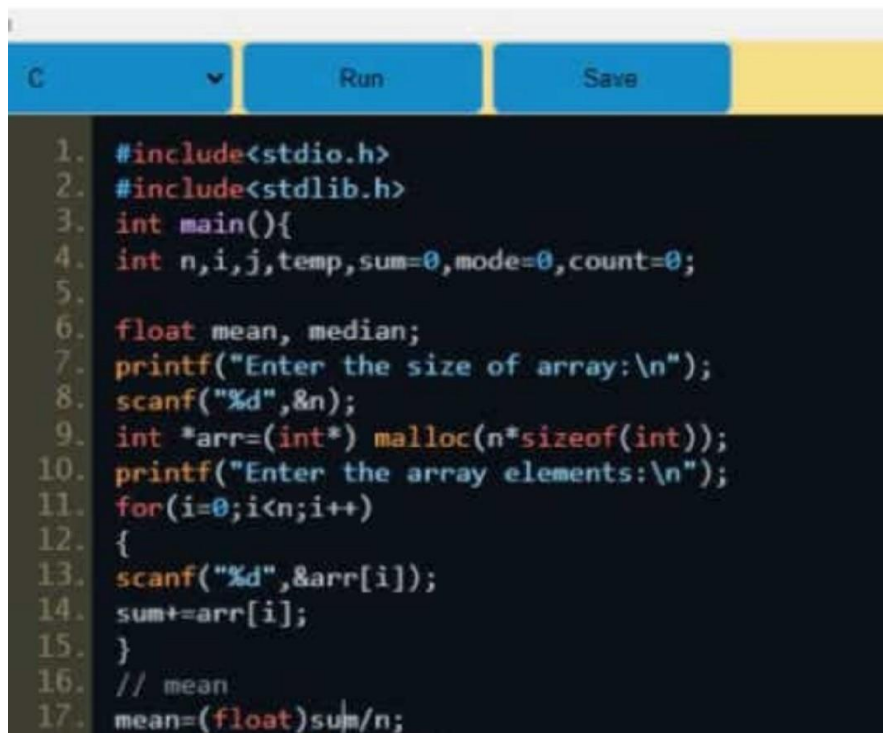
Array of elements = {16, 18, 27, 16, 23, 21, 19}

Sample Output:

Mean = 20

Median = 19

Mode = 16



```
1. #include<stdio.h>
2. #include<stdlib.h>
3. int main(){
4.     int n,i,j,temp,sum=0,mode=0,count=0;
5.
6.     float mean, median;
7.     printf("Enter the size of array:\n");
8.     scanf("%d",&n);
9.     int *arr=(int*) malloc(n*sizeof(int));
10.    printf("Enter the array elements:\n");
11.    for(i=0;i<n;i++)
12.    {
13.        scanf("%d",&arr[i]);
14.        sum+=arr[i];
15.    }
16.    // mean
17.    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.     }
48. }
```