

CSA02- C Programming

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Questions

CEQ20.

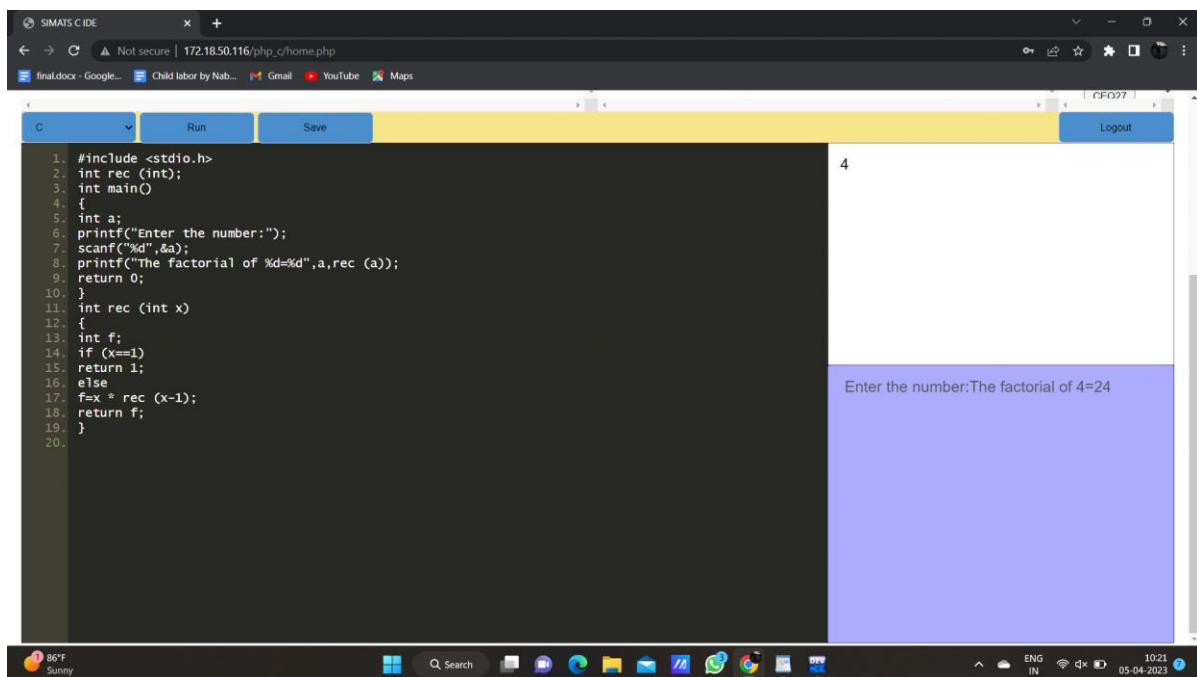
Find the factorial of n?

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 "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 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.

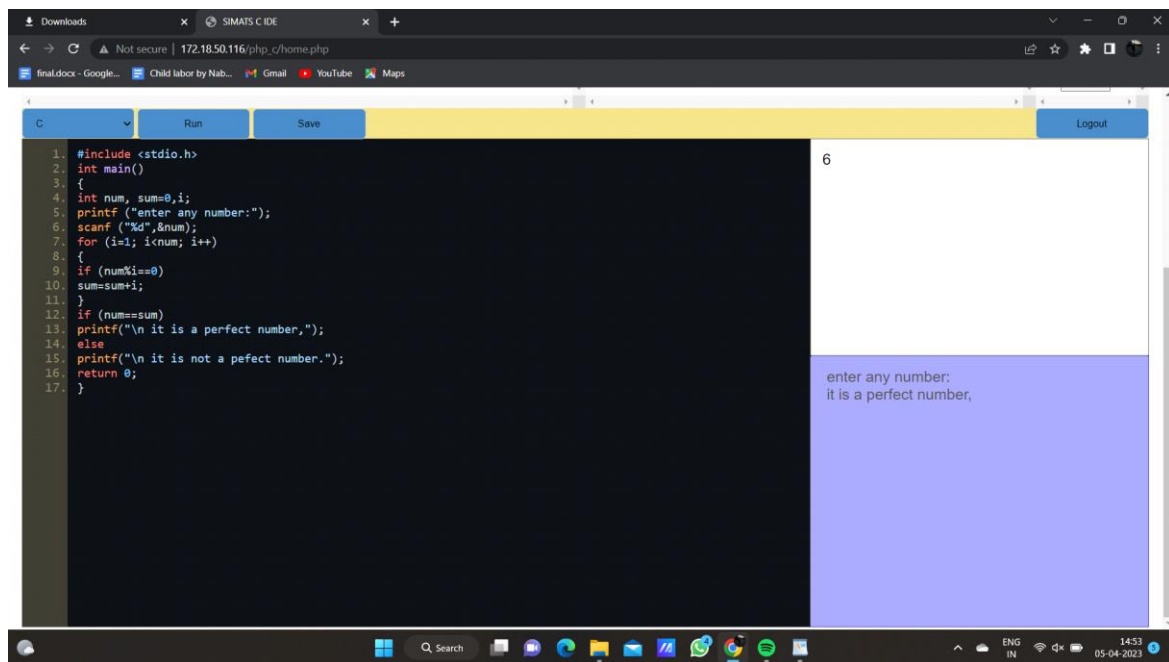
Write a program to print the given number is Perfect number or not?

Sample Input:

Given Number: 6

Sample Output:

It's a Perfect Number



```
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. }
```

6

enter any number:
it is a perfect number,

Questions

CEQ25.

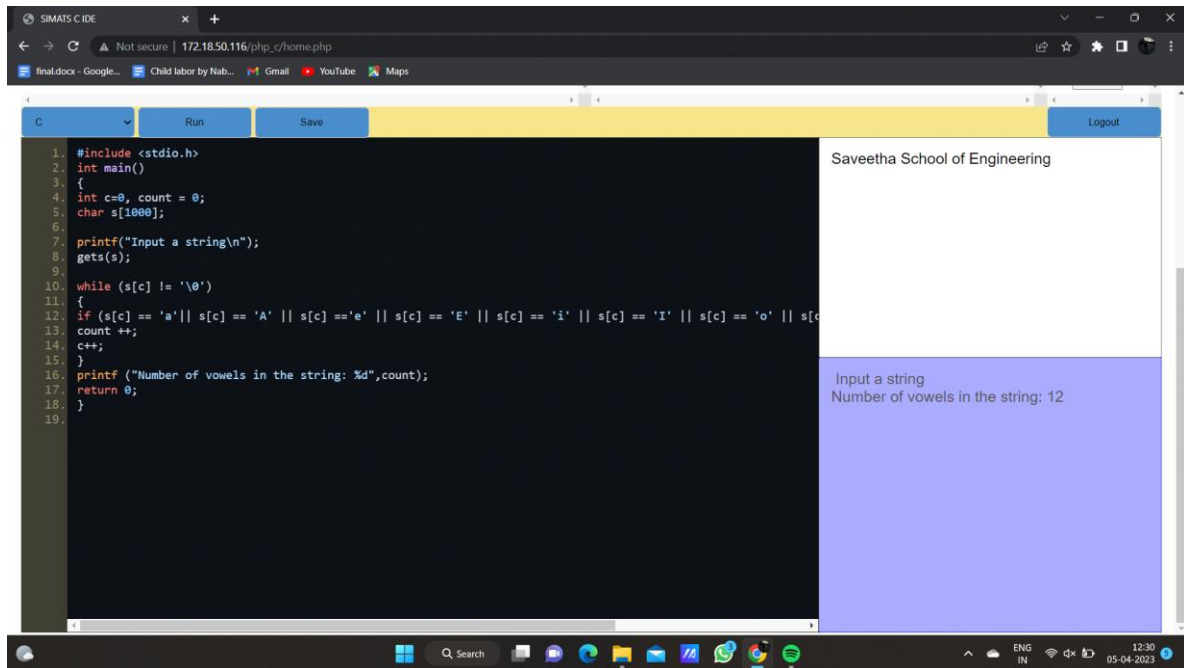
Write a program to print the number of vowels in the given statement?

Sample Input:

Saveetha School of Engineering

Sample Output:

Number o vowels = 12



The screenshot shows a web browser window with a C IDE. The code in the editor 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 area on the right shows the input string "Saveetha School of Engineering" and the resulting output "Number of vowels in the string: 12".

Questions

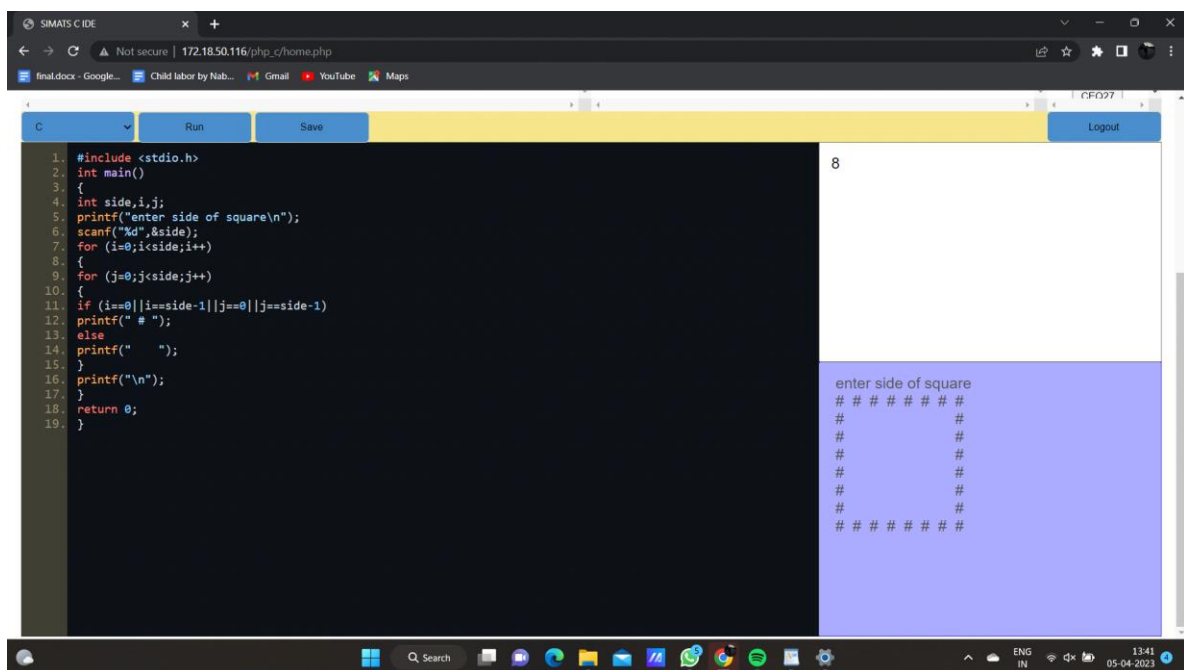
CEQ26.

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

Sample Input: #

Output:

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



The screenshot shows a web-based C IDE interface. The code editor on the left contains a C program that takes an integer 'side' as input and prints a hollow square pattern using '#' characters. The output window on the right shows the program's execution with the input '8' and the resulting hollow square pattern.

```
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. }
```

8

enter side of square

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

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

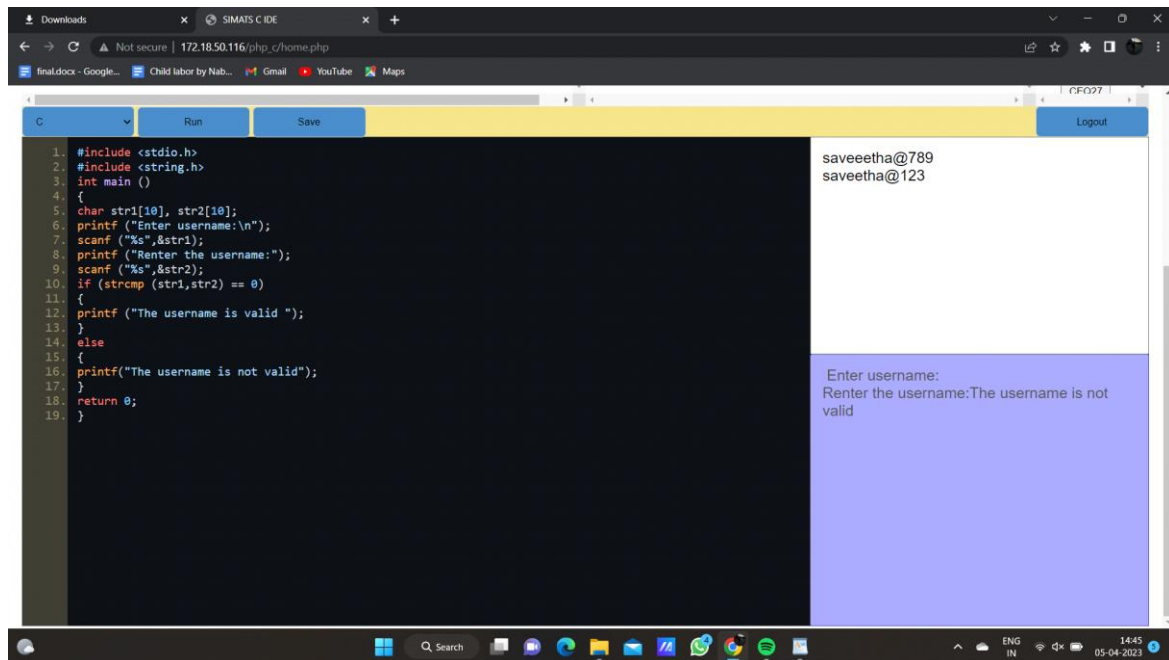
Sample Input:

Enter the user name: Saveetha@789

Reenter the user name: Saveetha@123

Sample Output:

User name is Invalid



The screenshot shows a web browser window with a URL bar indicating a local development environment. The browser displays a PHP script in a web IDE. The script is as follows:

```
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. }
```

The output of the script is displayed in a text area on the right side of the IDE. It shows the input 'saveeetha@789' and 'saveeetha@123', followed by the output 'The username is not valid'.

Questions

CEQ27.

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

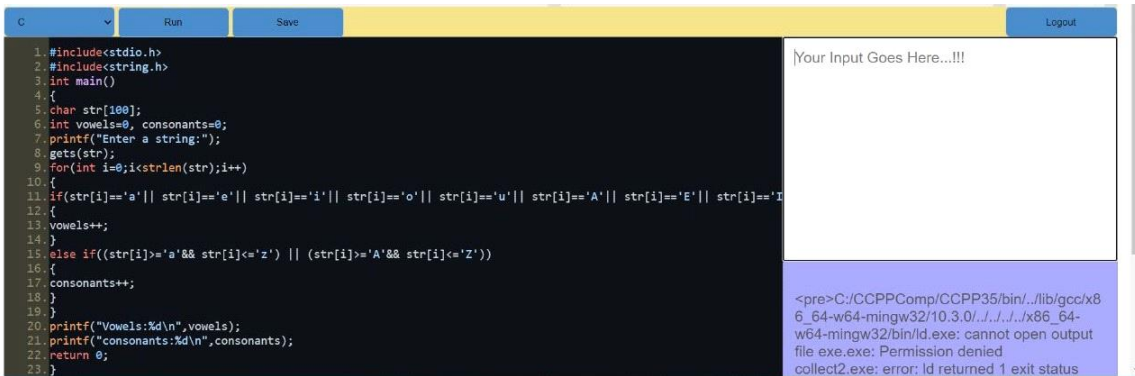
Sample Input:

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 editor on the left contains a C++ program that reads a string and counts vowels and consonants. The output window on the right shows the input 'Your Input Goes Here...!!!' and a command prompt window below it showing an error message: 'collect2.exe: error: ld returned 1 exit status'.

```
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. }
```

Your Input Goes Here...!!!

<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;:

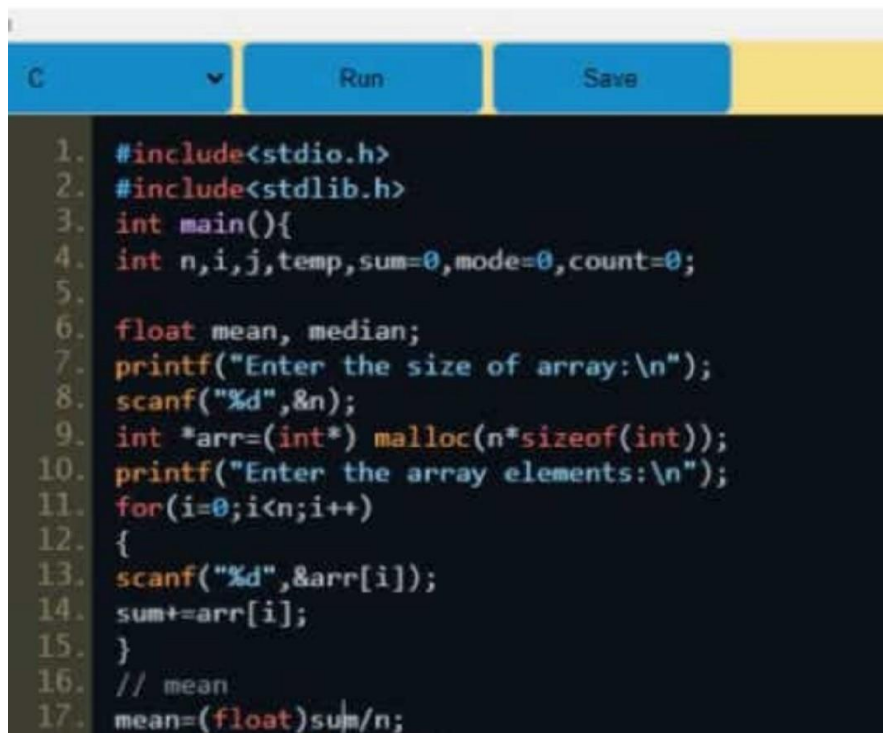
Array of elements = {16, 18, 27, 16, 23, 21, 19}

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. }
```