

# DAY-4 C PROGRAMMING

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1.

The screenshot shows a web-based C IDE interface. The browser address bar shows '172.18.49.175/php\_c/home.php'. The page header includes 'SIMATS | Saveetha School of Engineering' and a user profile 'YOGESH KUMAR K 192225005'. The main content area is divided into three sections: a problem description, sample input/output, and test cases.

**Problem Description:** Write a program to find the number of student users in the college, get the total users, staff users details from the client.

**Sample Input:**  
Total Users: 856  
Staff Users: 126

**Sample Output:**  
Student Users: 680

**Test Cases:**

Test Case	Input	Output
1.	Total Users: 0	
2.	Total Users: -143	
3.	Total Users: 1026, Staff Users: 1026	
4.	Total Users: 450, Staff Users: 540	
5.	Total Users: 680, Staff Users: 450	

The code editor shows the following C program:

```
1. #include<stdio.h>
2. int main()
3. {
4.     int student_users,total_users,staff_users;
5.     printf("\n enter the number of student users");
6.     scanf("%d",&student_users);
7.     printf("\n enter the total number of users");
8.     scanf("%d",&total_users);
9.     staff_users=total_users-student_users;
10.    int non_teaching_staff_users=staff_users/3;
11.    printf("\n number of students users %d", student_users);
12.    printf("\n number of staff_users %d", staff_users);
13.    printf("\n number of non_teaching staff users %d",non_teaching_staff_users);
14.    return 0;
15. }
```

The output window shows the results of the program execution:

```
856
126
enter the number of student users
enter the total number of users
number of students users 856
number of staff_users -730
number of non_teaching staff users -243
```

2.

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**Questions**  
CMQ18  
Write a program in C to check whether a number is a prime number or not using the function.  
Test Data :  
Input a positive number : 5  
Expected Output :  
The number 5 is a prime number.

**Test Cases**  
1 N = P  
2 N = 0  
3 N = 4  
4 N = 11  
5 N = 7.2

**CMQ18**  
CMQ12  
CMQ14  
CMQ16  
CMQ17

**C** Run Save Logout

```
1. #include<stdio.h>
2. int main()
3. {
4.     int n;
5.     printf("\n enter the number");
6.     scanf("%d",&n);
7.     for(i=2;i<=n;i++)
8.     {
9.         if(n%i==0)
10.        {
11.            printf("\n it is a prime number");
12.        }
13.        else if(n==1)
14.        {
15.            printf(" it is neither a prime nor a composite number");
16.        }
17.        else
18.        {
19.            printf("\n it is not a prime number");
20.        }
21.    }
22.    return 0;
23. }
```

5

enter the number  
it is not a prime number  
it is not a prime number  
it is not a prime number  
it is a prime number

Screenshot (69).png Show all

14:15  
07-04-2023

3.

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**Questions**  
CMQ6  
Write a program to print the longest word in the below text "Programming does wonders in the world".

**Test Cases**

**CMQ17**  
CMQ18  
CMQ19  
CMQ2  
CMQ3  
CMQ4  
CMQ5  
CMQ6  
CMQ7

**C** Run Save Logout

```
1. #include<stdio.h>
2. #include<string.h>
3. int main() {
4.     char text[] = "programming does wonders in the world";
5.     char *word = strtok(text, " ");
6.     char longest_word[100] = " ";
7.     while (word != NULL){
8.         if(strlen(word) > strlen(longest_word)){
9.             strcpy(longest_word, word);
10.        }
11.        word = strtok(NULL, " ");
12.    }
13.    printf("the longest word is: %s\n",longest_word);
14.    return 0;
15. }
```

Your Input Goes Here....!!!

the longest word is: programming

13:59  
07-04-2023

4.

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**Questions**  
CMQ20  
Write a program to reverse a number using function?(Get the input from user).  
Sample Input:  
Number: 14567  
Sample Output:  
Reverse Number: 76541

**Test Cases**

1. 45721
2. 000
3. A01947
4. 10945
5. 145*999=144855

**Code:**

```

1. #include<stdio.h>
2. int findreverse(int n)
3. {
4.     int sum=0;
5.     while(n!=0)
6.     {
7.         sum = sum*10 + n%10;
8.         n /= 10;
9.     }
10.    return sum;
11. }
12. int main()
13. {
14.     int number, reverse;
15.     printf("enter a number:");
16.     scanf("%d",&number);
17.     reverse = findreverse(number);
18.     printf("the reverse of %d is:%d",number, reverse);
19.     return 0;
20. }

```

**Output:** 76541

**Input:** enter a number: the reverse of 76541 is:14567

5.

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**Questions**  
CMQ11  
Write a Program to find the Maximum and Minimum value in a given array of numbers.  
Sample Input:  
Enter no. of elements in an array 5  
Enter the elements:  
1 2 3 4 5  
Output:  
Maximum of an array 5  
Minimum of an array 1

**Test Cases**

CMQ10
CMQ11
CMQ12
CMQ13
CMQ14
CMQ15
CMQ16
CMQ17
CMQ18

**Code:**

```

1. #include<stdio.h>
2. int main()
3. {
4.     int a[1000],i,n,min,max;
5.     printf("enter size of an array:\n");
6.     scanf("%d",&n);
7.     printf("enter the elements:\n");
8.     for(i=0;i<n;i++)
9.     {
10.        scanf("%d",&a[i]);
11.    }
12.    min=max=a[0];
13.    for(i=1;i<n;i++)
14.    {
15.        if(min>a[i])
16.            min=a[i];
17.        if(max<a[i])
18.            max=a[i];
19.    }
20. }

```

**Output:** Your Input Goes Here...!!!

**Input:** enter x and y values: before swapping  
x:5  
y:6  
z:7  
after swapping:  
x:6  
y:7  
z:5



7.

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**Questions**  
CMQ12  
Write a Program to find the sum and average of numbers in a matrix.  
  
Sample Input:  
1 2 3  
4 5 6  
7 8 9  
  
Output:  
Sum = 45  
Average = 5

**Test Cases**  

Test Case 1

Test Case 2

Test Case 3

Test Case 4

Test Case 5

Test Case 6

Test Case 7

Test Case 8

Test Case 9

Test Case 10

C

Run

Save

```
1. #include<stdio.h>
int main(){
int matrix[100][100],rows,cols;
printf("Enter the number of rows:");
scanf("%d",&rows);
printf("Enter the number of columns:");
scanf("%d",&cols);
printf("Enter the elements in the matrix:");
for(int i=0;i<rows;i++){
for(int j=0;j<cols;j++){
scanf("%d",&matrix[i][j]);
}
}
//sum of matrix numbers
```