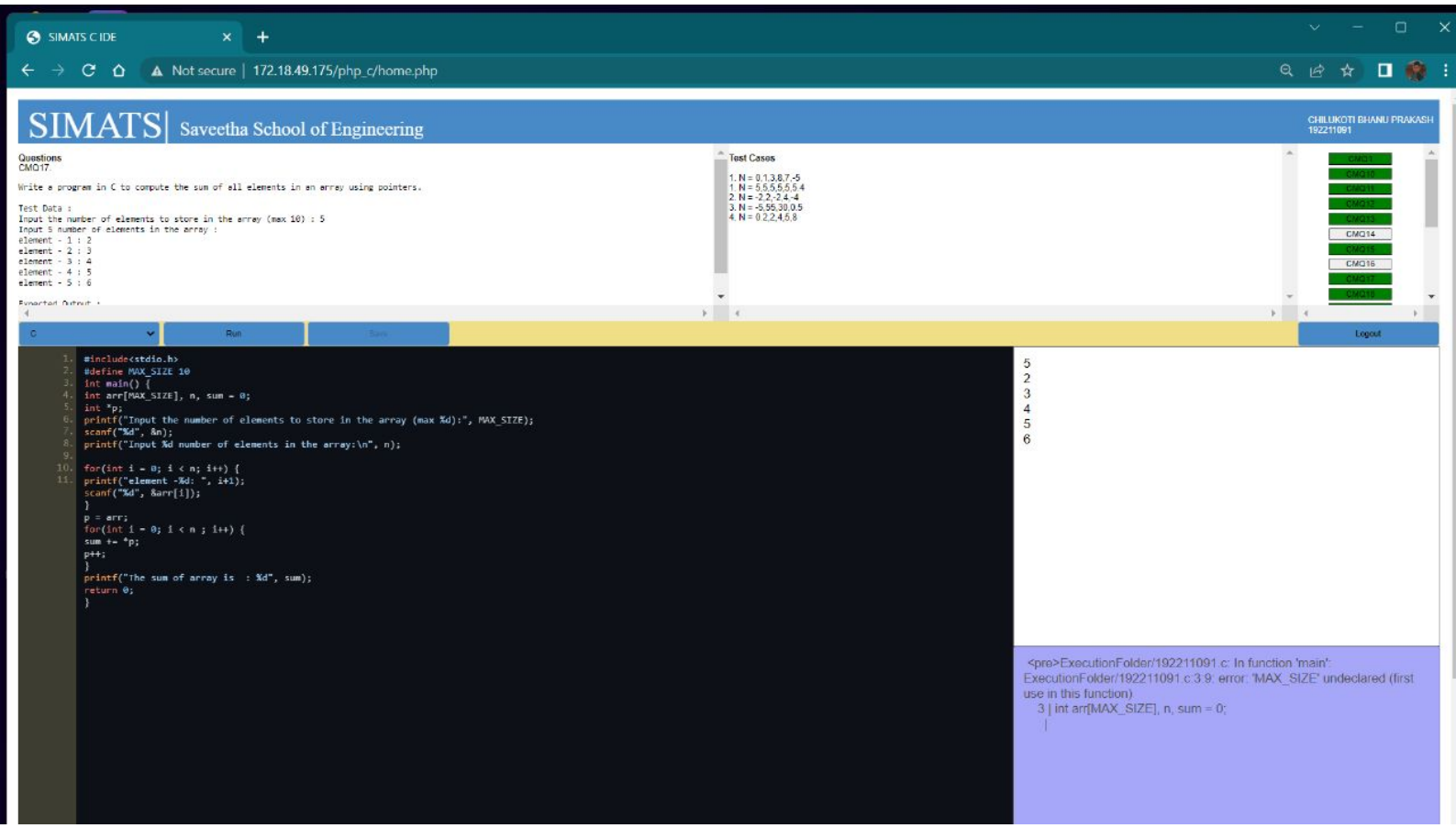
SIMATS C IDE
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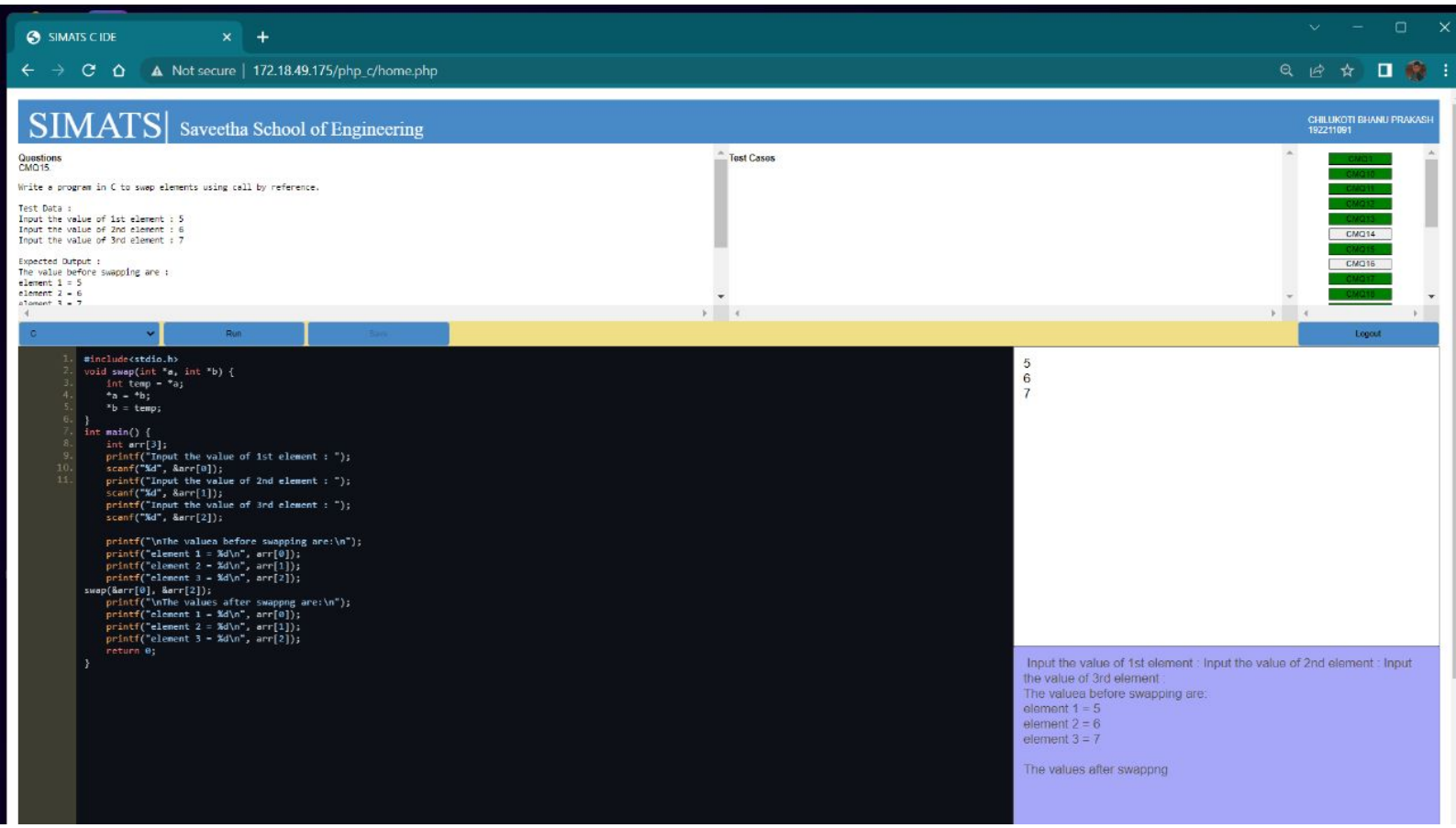
192211091
Questions
CMQ17.
Write a program in C to compute the sum of all elements in an array using pointers.
Test Data :
Input the number of elements to store in the array (max 10) : 5
Input 5 number of elements in the array :
element - 1 : 2
element - 2 : 3
element - 3 : 4
element - 4 : 5
element - 5 : 6
Test Cases
1. N = 0,1,3,8,7,-5
1. N = 5,5,5,5,5,5,4
2. N = -2,2,-2,4,-4
3. N = -5,55,30,0,5
4. N = 0,2,2,4,5,6
CMQ17
CMQ10
CMQ11
CMQ12
CMQ13
CMQ14
CMQ15
CMQ16
CMQ17
CMQ18
C
Run
Logout
#include<stdio.h>
#define MAX_SIZE 10
int main() {
int arr[MAX_SIZE], n, sum = 0;
int *p;
printf("Input the number of elements to store in the array (max %d):", MAX_SIZE);
scanf("%d", &n);
printf("Input %d number of elements in the array:\n", n);
for(int i = 0; i < n; i++) {
printf("element -%d: ", i+1);
scanf("%d", &arr[i]);
}
p = arr;
for(int i = 0; i < n ; i++) {
sum += *p;
p++;
}
printf("The sum of array is : %d", sum);
return 0;
}
5
2
3
4
5
6
<pre>ExecutionFolder/192211091.c: In function 'main':
ExecutionFolder/192211091.c:3:9: error: 'MAX_SIZE' undeclared (first use in this function)
3 | int arr[MAX_SIZE], n, sum = 0;


SIMATS C IDE
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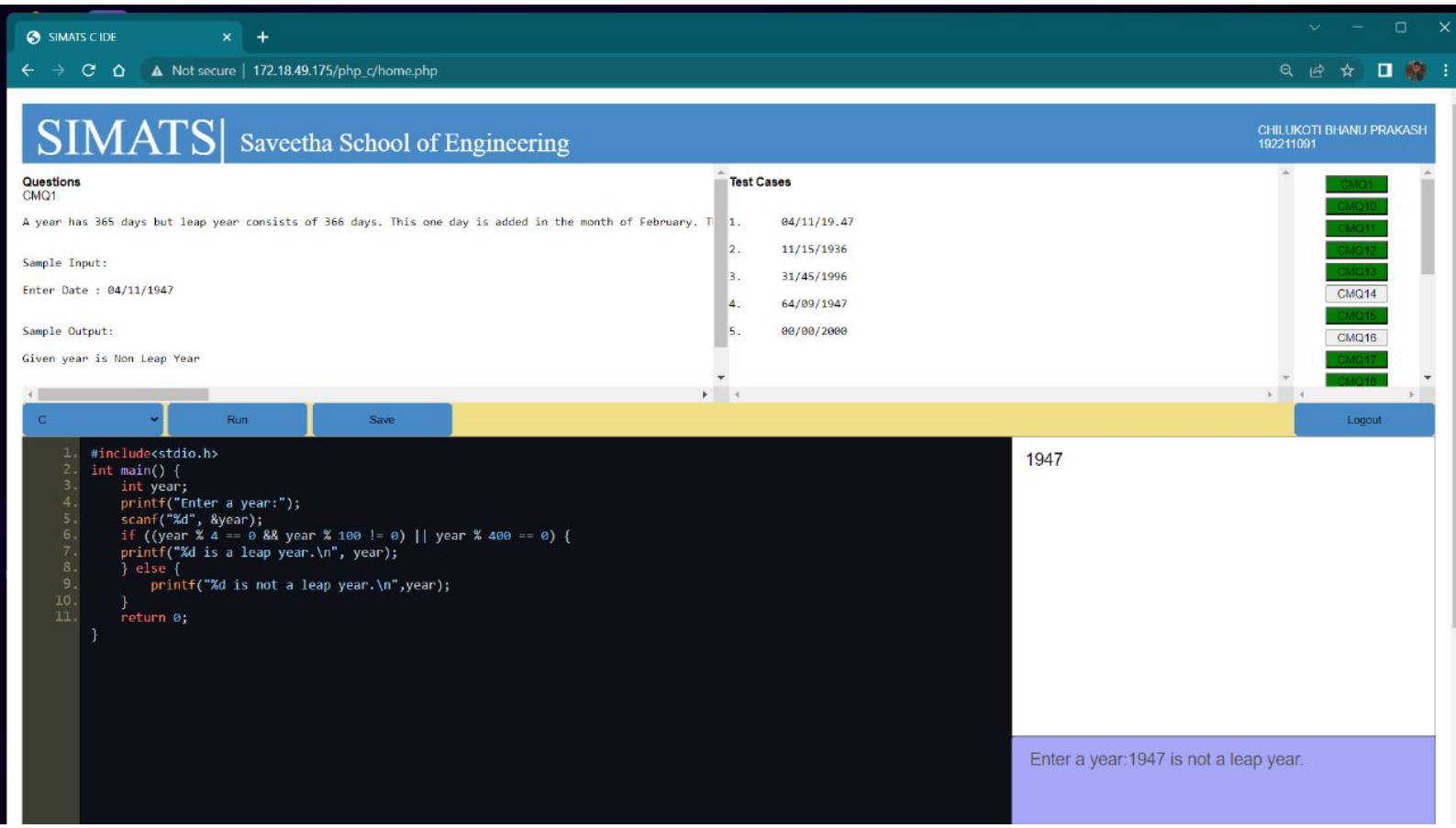
Questions
CMQ15
Write a program in C to swap elements using call by reference.
Test Data :
Input the value of 1st element : 5
Input the value of 2nd element : 6
Input the value of 3rd element : 7
Expected Output :
The value before swapping are :
element 1 = 5
element 2 = 6
Test Cases
CMQ14
CMQ16
Logout
#include<stdio.h>
void swap(int *a, int *b) {
int temp = *a;
*a = *b;
*b = temp;
}
int main() {
int arr[3];
printf("Input the value of 1st element : ");
scanf("%d", &arr[0]);
printf("Input the value of 2nd element : ");
scanf("%d", &arr[1]);
printf("Input the value of 3rd element : ");
scanf("%d", &arr[2]);
printf("\nThe values before swapping are:\n");
printf("element 1 = %d\n", arr[0]);
printf("element 2 = %d\n", arr[1]);
printf("element 3 = %d\n", arr[2]);
swap(&arr[0], &arr[2]);
printf("\nThe values after swappng are:\n");
printf("element 1 = %d\n", arr[0]);
printf("element 2 = %d\n", arr[1]);
printf("element 3 = %d\n", arr[2]);
return 0;
}
5
6
7
Input the value of 1st element : Input the value of 2nd element : Input the value of 3rd element :
The values before swapping are:
element 1 = 5
element 2 = 6
element 3 = 7
The values after swappng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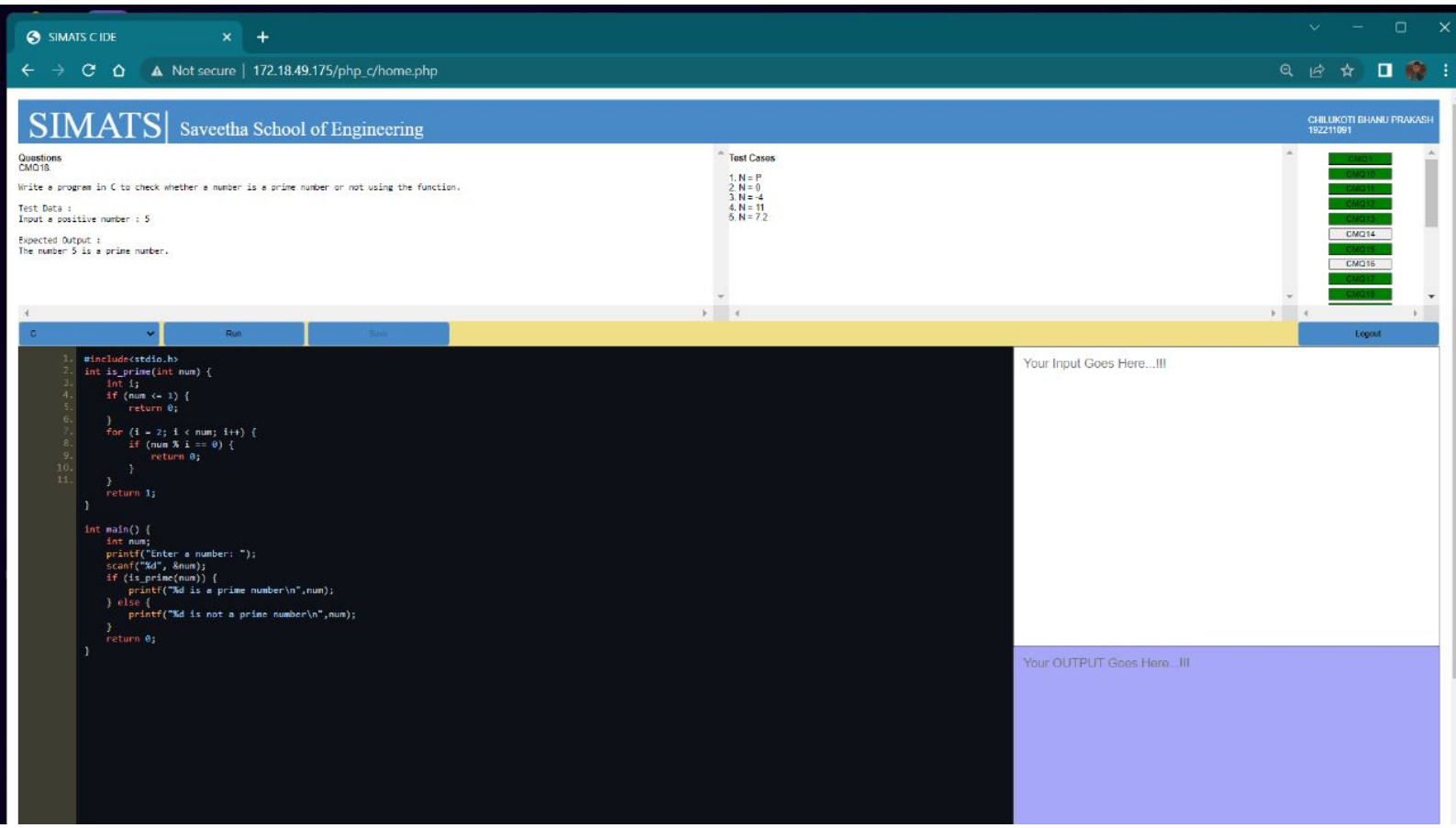
Questions
CMQ1.
A year has 365 days but leap year consists of 366 days. This one day is added in the month of February. T
Sample Input:
Enter Date : 04/11/1947
Sample Output:
Given year is Non Leap Year
Test Cases
1. 04/11/19.47
2. 11/15/1936
3. 31/45/1996
4. 64/09/1947
5. 00/00/2000
CMQ1
CMQ10
CMQ11
CMQ12
CMQ13
CMQ14
CMQ15
CMQ16
CMQ17
CMQ18
C
Run
Save
Logout
#include<stdio.h>
int main() {
int year;
printf("Enter a year:");
scanf("%d", &year);
if ((year % 4 == 0 && year % 100 != 0) || year % 400 == 0) {
printf("%d is a leap year.\n", year);
} else {
printf("%d is not a leap year.\n",year);
}
return 0;
}
1947
Enter a year:1947 is not a leap year.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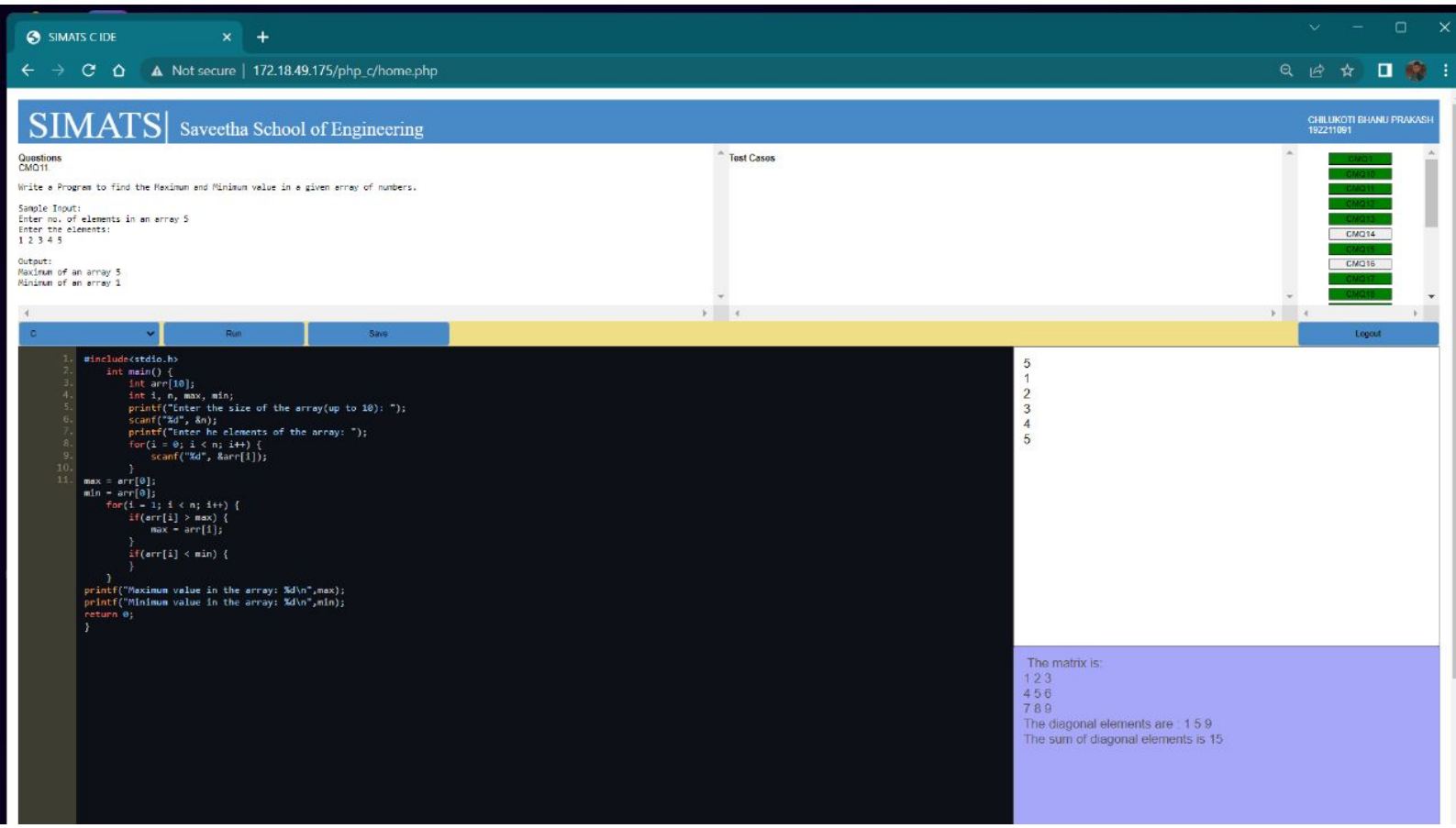
Questions
CMQ18.
Write a program in C to check whether a number is a prime number or not using the function.
Test Data :
Input a positive number : 5
Expected Output :
The number 5 is a prime number.
Test Cases
1. N = P
2. N = 0
3. N = -4
4. N = 11
5. N = 7.2
CMQ13
CMQ14
CMQ16
C
Run
Logout
#include<stdio.h>
int is_prime(int num) {
int i;
if (num <= 1) {
return 0;
}
for (i = 2; i < num; i++) {
if (num % i == 0) {
return 0;
}
}
return 1;
}
int main() {
int num;
printf("Enter a number: ");
scanf("%d", &num);
if (is_prime(num)) {
printf("%d is a prime number\n",num);
} else {
printf("%d is not a prime number\n",num);
}
return 0;
}
Your Input Goes Here...!!!
Your OUTPUT Goes Here...!!!


SIMATS C IDE
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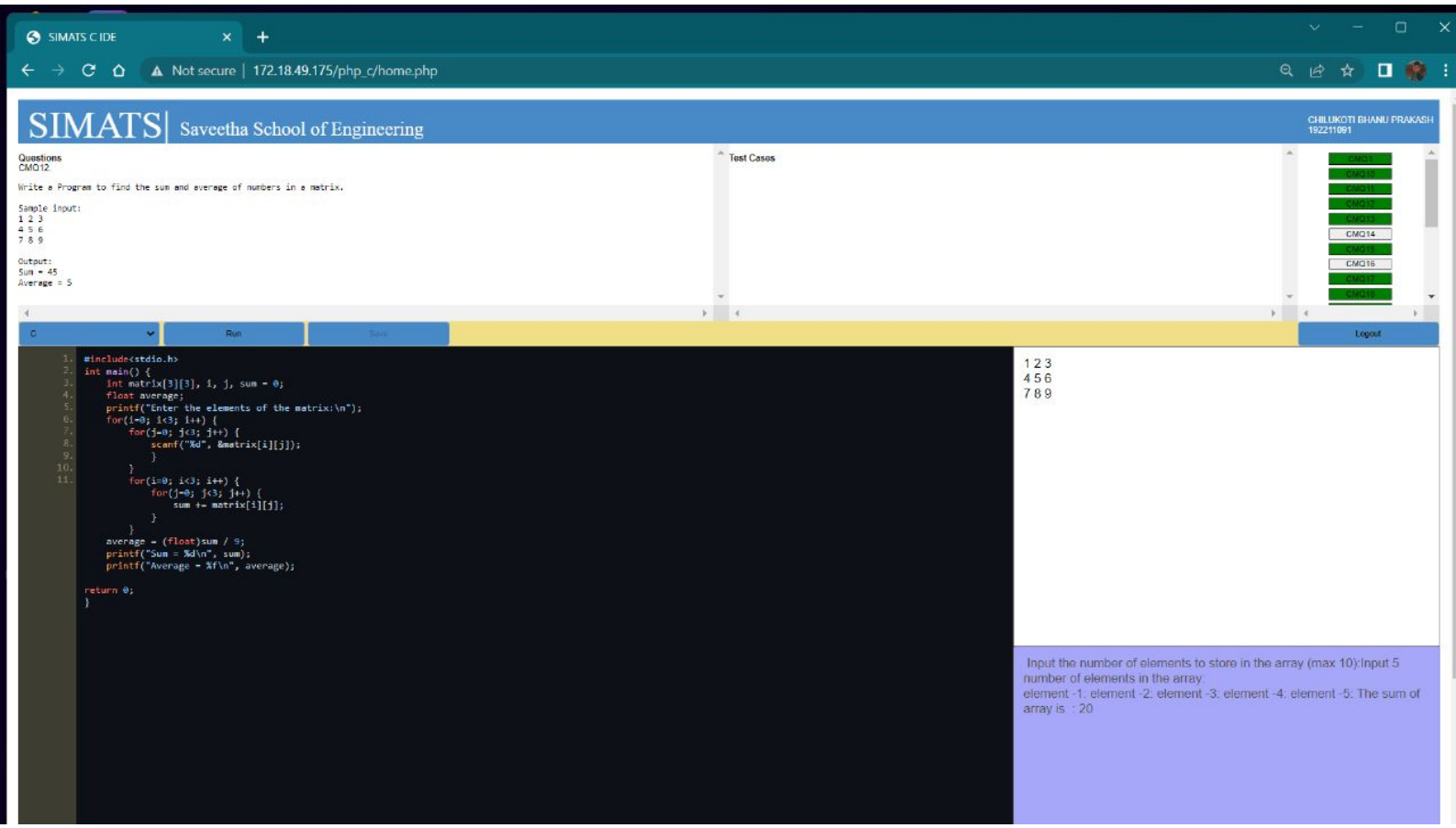
Questions
CMQ11
Write a Program to find the Maximum and Minimum value in a given array of numbers.
Sample Input:
Enter no. of elements in an array 5
Enter the elements:
1 2 3 4 5
Output:
Maximum of an array 5
Minimum of an array 1
Test Cases
CMQ11
CMQ12
CMQ13
CMQ14
CMQ15
CMQ16
CMQ17
C
Run
Save
Logout
#include<stdio.h>
int main() {
int arr[10];
int i, n, max, min;
printf("Enter the size of the array(up to 10): ");
scanf("%d", &n);
printf("Enter he elements of the array: ");
for(i = 0; i < n; i++) {
scanf("%d", &arr[i]);
}
max = arr[0];
min = arr[0];
for(i = 1; i < n; i++) {
if(arr[i] > max) {
max = arr[i];
}
if(arr[i] < min) {
}
}
printf("Maximum value in the array: %d\n",max);
printf("Minimum value in the array: %d\n",min);
return 0;
}
5
1
2
3
4
5
The matrix is:
1 2 3
4 5 6
7 8 9
The diagonal elements are : 1 5 9
The sum of diagonal elements is 15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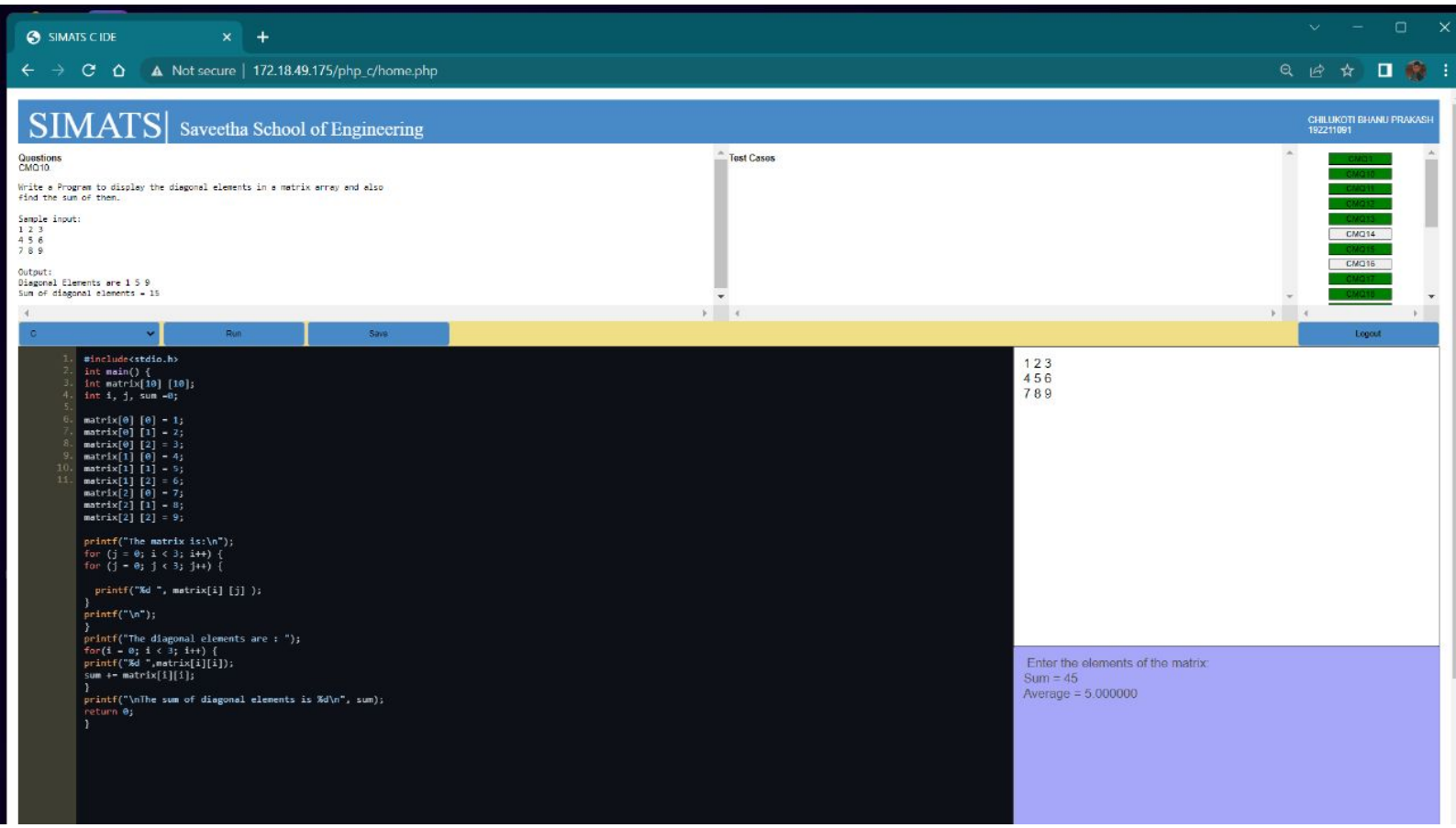
192211091
Questions
CMQ12.
Write a Program to find the sum and average of numbers in a matrix.
Sample input:
1 2 3
4 5 6
7 8 9
Output:
Sum = 45
Average = 5
Test Cases
CMQ14
CMQ16
C
Run
Logout
#include<stdio.h>
int main() {
int matrix[3][3], i, j, sum = 0;
float average;
printf("Enter the elements of the matrix:\n");
for(i=0; i<3; i++) {
for(j=0; j<3; j++) {
scanf("%d", &matrix[i][j]);
}
}
for(i=0; i<3; i++) {
for(j=0; j<3; j++) {
sum += matrix[i][j];
}
}
average = (float)sum / 9;
printf("Sum = %d\n", sum);
printf("Average = %f\n", average);
return 0;
}
1 2 3
4 5 6
7 8 9
Input the number of elements to store in the array (max 10):Input 5 number of elements in the array
element -1: element -2: element -3: element -4: element -5: The sum of array is : 20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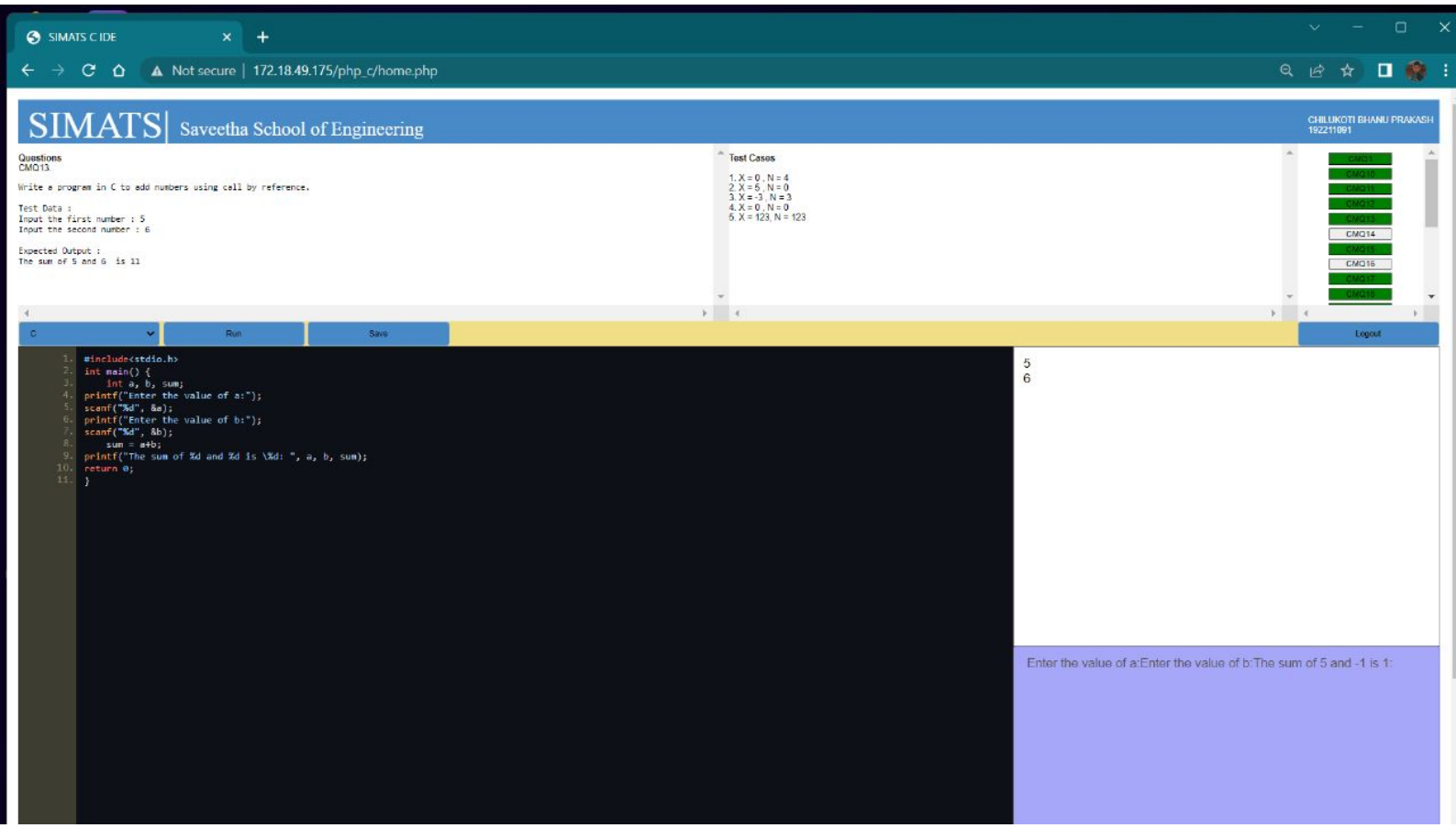
Questions
CMQ10.
Write a Program to display the diagonal elements in a matrix array and also
find the sum of them.
Sample input:
1 2 3
4 5 6
7 8 9
Output:
Diagonal Elements are 1 5 9
Sum of diagonal elements = 15
Test Cases
CMQ14
CMQ16
C
Run
Save
Logout
#include<stdio.h>
int main() {
int matrix[10] [10];
int i, j, sum =0;
matrix[0] [0] = 1;
matrix[0] [1] = 2;
matrix[0] [2] = 3;
matrix[1] [0] = 4;
matrix[1] [1] = 5;
matrix[1] [2] = 6;
matrix[2] [0] = 7;
matrix[2] [1] = 8;
matrix[2] [2] = 9;
printf("The matrix is:\n");
for (j = 0; i < 3; i++) {
for (j = 0; j < 3; j++) {
printf("%d ", matrix[i] [j]);
}
printf("\n");
}
printf("The diagonal elements are : ");
for(i = 0; i < 3; i++) {
printf("%d ",matrix[i][i]);
sum += matrix[i][i];
}
printf("\nThe sum of diagonal elements is %d\n", sum);
return 0;
}
1 2 3
4 5 6
7 8 9
Enter the elements of the matrix
Sum = 45
Average = 5.000000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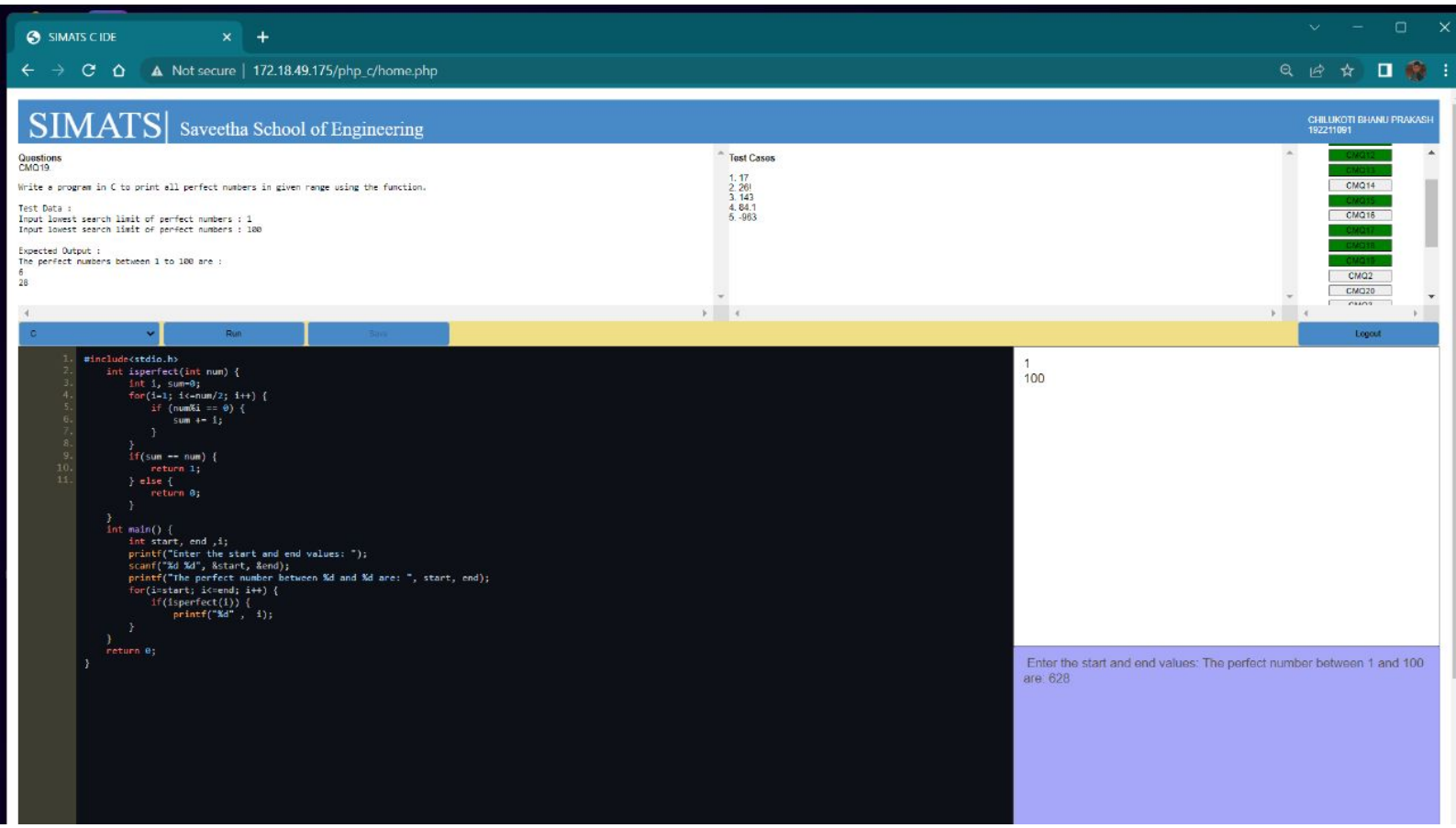
Questions
CMQ13.
Write a program in C to add numbers using call by reference.
Test Data :
Input the first number : 5
Input the second number : 6
Expected Output :
The sum of 5 and 6 is 11
Test Cases
1. X = 0 , N = 4
2. X = 5 , N = 0
3. X = -3 , N = 3
4. X = 0 , N = 0
5. X = 123, N = 123
CMQ14
CMQ16
C
Run
Save
Logout
#include<stdio.h>
int main() {
int a, b, sum;
printf("Enter the value of a:");
scanf("%d", &a);
printf("Enter the value of b:");
scanf("%d", &b);
sum = a+b;
printf("The sum of %d and %d is \%d: ", a, b, sum);
return 0;
}
5
6
Enter the value of a:Enter the value of b:The sum of 5 and -1 is 1: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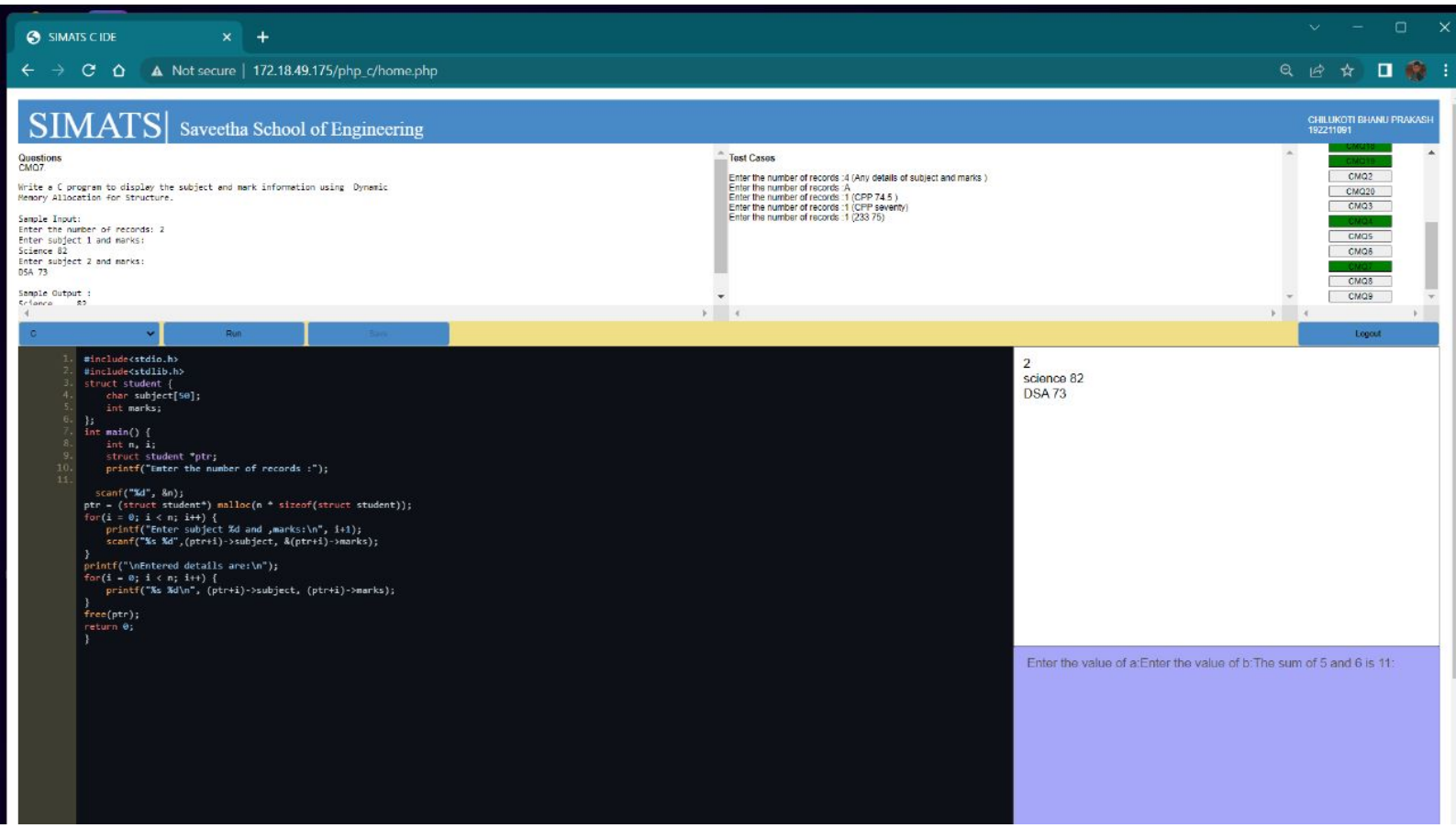
Questions
CMQ19
Write a program in C to print all perfect numbers in given range using the function.
Test Data :
Input lowest search limit of perfect numbers : 1
Input lowest search limit of perfect numbers : 100
Expected Output :
The perfect numbers between 1 to 100 are :
6
28
Test Cases
1. 17
2. 26!
3. 143
4. 84.1
5. -983
CMQ13
CMQ14
CMQ15
CMQ16
CMQ17
CMQ18
CMQ19
CMQ2
CMQ20
C
Run
Save
Logout
#include<stdio.h>
int isperfect(int num) {
int i, sum=0;
for(i=1; i<=num/2; i++) {
if (num%i == 0) {
sum += i;
}
}
if(sum == num) {
return 1;
} else {
return 0;
}
}
int main() {
int start, end ,i;
printf("Enter the start and end values: ");
scanf("%d %d", &start, &end);
printf("the perfect number between %d and %d are: ", start, end);
for(i=start; i<=end; i++) {
if(isperfect(i)) {
printf("%d" , i);
}
}
return 0;
}
1
100
Enter the start and end values: The perfect number between 1 and 100 are: 628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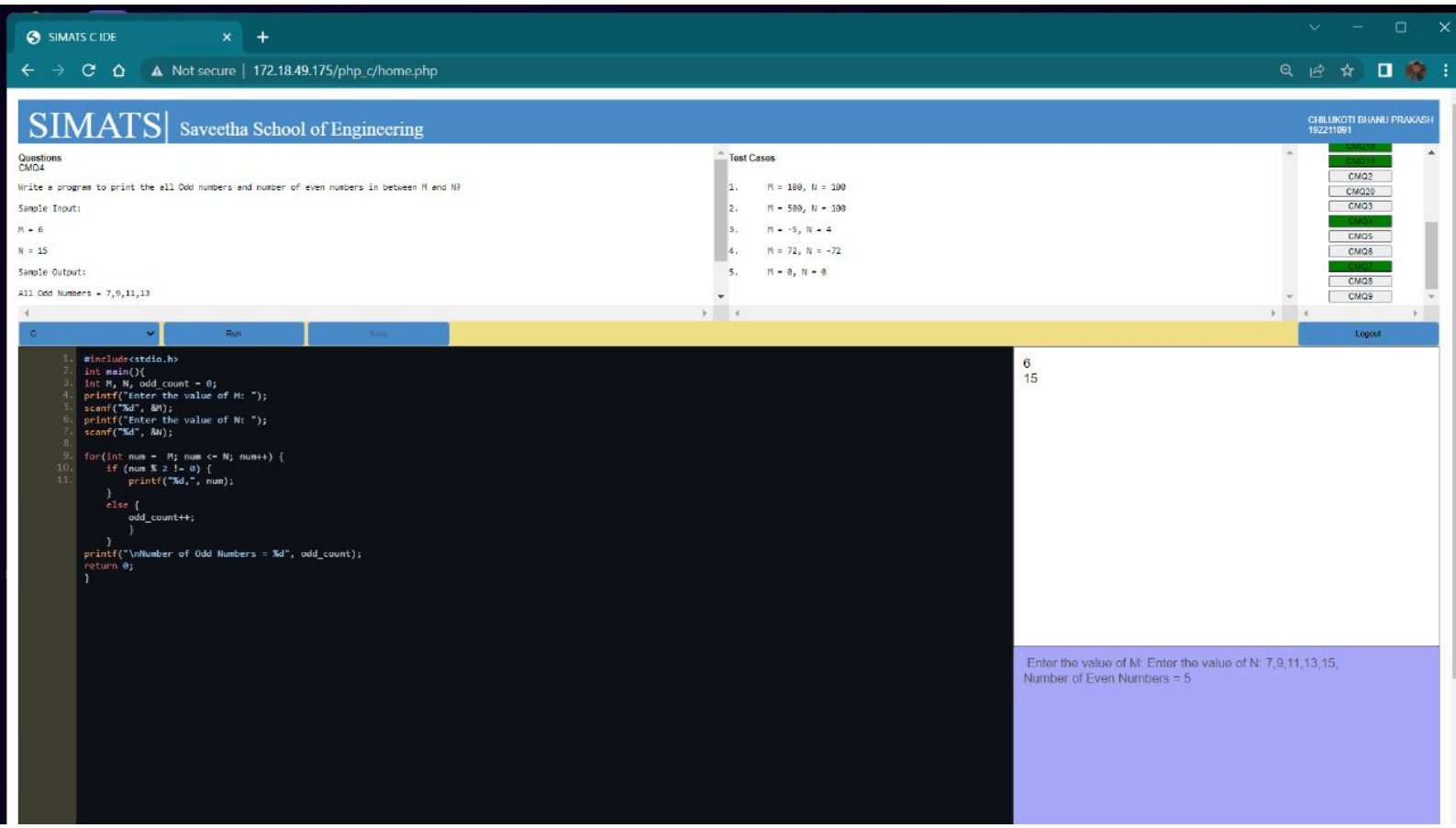
Questions
CMQ7.
Write a C program to display the subject and mark information using Dynamic Memory Allocation for Structure.
Sample Input:
Enter the number of records: 2
Enter subject 1 and marks:
Science 82
Enter subject 2 and marks:
DSA 73
Sample Output :
Test Cases
Enter the number of records :4 (Any details of subject and marks)
Enter the number of records :A
Enter the number of records :1 (CPP 74.5)
Enter the number of records :1 (CPP seventy)
Enter the number of records :1 (233 75)
CMQ19
CMQ2
CMQ20
CMQ3
CMQ4
CMQ5
CMQ6
CMQ7
CMQ8
CMQ9
C
Run
Logout
#include<stdio.h>
#include<stdlib.h>
struct student {
char subject[50];
int marks;
};
int main() {
int n, i;
struct student *ptr;
printf("Enter the number of records :");
scanf("%d", &n);
ptr = (struct student*) malloc(n * sizeof(struct student));
for(i = 0; i < n; i++) {
printf("Enter subject %d and ,marks:\n", i+1);
scanf("%s %d",(ptr+i)->subject, &(ptr+i)->marks);
}
printf("\nEntered details are:\n");
for(i = 0; i < n; i++) {
printf("%s %d\n", (ptr+i)->subject, (ptr+i)->marks);
}
free(ptr);
return 0;
}
2
science 82
DSA 73
Enter the value of a:Enter the value of b:The sum of 5 and 6 is 11:


SIMATS C IDE
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192211091
Questions
CMQ4
Write a program to print the all Odd numbers and number of even numbers in between M and N?
Sample Input:
M = 6
N = 15
Sample Output:
All Odd Numbers = 7,9,11,13
Test Cases
1. M = 100, N = 100
2. M = 500, N = 100
3. M = -5, N = 4
4. M = 72, N = -72
5. M = 0, N = 0
CMQ20
CMQ3
CMQ5
CMQ6
CMQ8
CMQ9
C
Run
Logout
#include<stdio.h>
int main(){
int M, N, odd_count = 0;
printf("Enter the value of M: ");
scanf("%d", &M);
printf("Enter the value of N: ");
scanf("%d", &N);
for(int num = M; num <= N; num++) {
if (num % 2 != 0) {
printf("%d,", num);
}
else {
odd_count++;
}
}
printf("\nNumber of Odd Numbers = %d", odd_count);
return 0;
}
6
15
Enter the value of M: Enter the value of N: 7,9,11,13,15,
Number of Even Numbers = 5

Questions
CMQ9.

Write a program to find the sum and average of the elements in an array

Sample Input;

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

Sample Output:

Sum = 140

Average = 20

Test Cases

CMQ1b
CMQ2
CMQ2b
CMQ3
CMQ4
CMQ5
CMQ6
CMQ7
CMQ8
CMQ9

C | Run | Save | Logout

```c
#include <stdio.h>

int main() {
    int array[] = {16, 18, 27, 16, 23, 21, 19};
    int array_size = sizeof(array) / sizeof(array[0]);
    int array_sum = 0;
    float array_avg=0.0;

    // calculate sum
    for (int i = 0; i < array_size; i++) {
        array_sum += array[i];
    }

    // calculate average
    array_avg = (float)array_sum / array_size;

    // print results
    printf("Sum: %d\n", array_sum);
    printf("Average: %0.1f\n", array_avg);

    return 0;
}
```

Your Input Goes Here...!!!

Sum: 140
Average: 20.0

Questions
CMQ5

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: 688

Test Cases

1. Total User: 0
2. Total User: -143
3. Total User: 1026, Staff User: 1026
4. Total User: 450, Staff User: 540
5. Total User: 600, Staff User: 450

CMQ15
CMQ19
CMQ2
CMQ20
CMQ3
CMQ4
CMQ5
CMQ6
CMQ7
CMQ8

C | Run | Save | Logout

```c
#include <stdio.h>

int main() {
    int total_users = 856;
    int staff_users = 126;
    int student_users = total_users - staff_users;

    printf("Student Users:%d\n" , student_users);

 return 0;
}
```

Your Input Goes Here...!!!

Student Users:730

Questions
CMQ6.

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

Test Cases

CMQ2
CMQ20
CMQ3
CMQ4
CMQ5
CMQ6
CMQ7
CMQ8

C | Run | Save | Logout

```c
#include<stdio.h>
#include<conio.h>
int main() {
char *a;
int i, max=0, pos=0, l=0;
gets(a);
for(i=0; a[i]!='\0'; i++)
{
if(l==max)
{
pos=i-max;
}
if (a[i]==' ')
{
l=0;
}
else
{
l++;
}if(l>max)
{
max=l;
}
}
printf("%d\n" ,max);
for(i=1; i<=max;i++,pos++)
{
printf("%c" ,a[pos]);
```

Your Input Goes Here...!!!

Runtime Error

Questions
CMQ9.

Write a program to find the sum and average of the elements in an array

Sample Input;

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

Sample Output:

Sum = 140

Average = 20

Test Cases

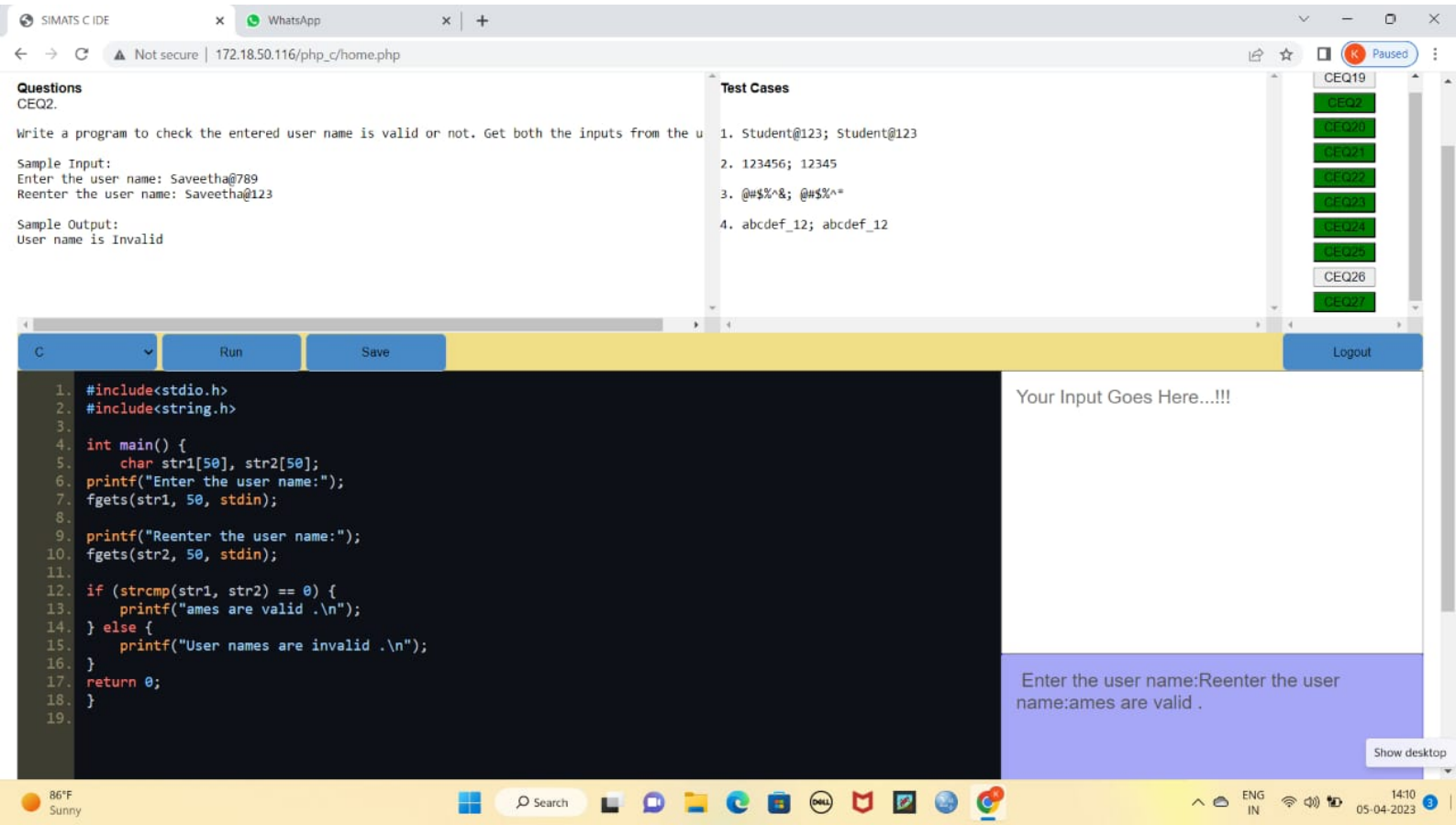
CMQ1
CMQ2
CMQ3
CMQ4
CMQ5
CMQ6
CMQ7
CMQ8
CMQ9

C | Run | Save | Logout

```c
#include <stdio.h>

int main() {
    int array[] = {16, 18, 27, 16, 23, 21, 19};
    int array_size = sizeof(array) / sizeof(array[0]);
    int array_sum = 0;
    float array_avg=0.0;

    // calculate sum
    for (int i = 0; i < array_size; i++) {
        array_sum += array[i];
    }

    // calculate average
    array_avg = (float)array_sum / array_size;

    // print results
    printf("Sum: %d\n", array_sum);
    printf("Average: %0.1f\n", array_avg);

    return 0;
}
```

Your Input Goes Here...!!!

Sum: 140
Average: 20.0


SIMATS C IDE
WhatsApp
Not secure | 172.18.50.116/php_c/home.php
Paused
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
Test Cases
1. Student@123; Student@123
2. 123456; 12345
3. @#$%^&; @#$%^*
4. abcdef_12; abcdef_12
CEQ19
CEQ2
CEQ20
CEQ21
CEQ22
CEQ23
CEQ24
CEQ25
CEQ26
CEQ27
C
Run
Save
Logout
#include<stdio.h>
#include<string.h>
int main() {
char str1[50], str2[50];
printf("Enter the user name:");
fgets(str1, 50, stdin);
printf("Reenter the user name:");
fgets(str2, 50, stdin);
if (strcmp(str1, str2) == 0) {
printf("ames are valid .\n");
} else {
printf("User names are invalid .\n");
}
return 0;
}
Your Input Goes Here...!!!
Enter the user name:Reenter the user name:ames are valid .
Show desktop
86°F
Sunny
Search
ENG
IN
14:10
05-04-2023

Questions
CEQ20.

Find the factorial of n?

Sample Input:
N = 4

Sample Output:
4 Factorial = 24

Test Cases

1. N = 0
2. N = -5
3. N = 1
4. N = Q
5. N = 3A

CEQ19
CEQ2
CEQ20
CEQ21
CEQ22
CEQ23
CEQ24
CEQ25
CEQ26

C | Run | Save | Logout

```c
#include <stdio.h>

int main() {
    int num, i, factorial = 1;

    printf("Enter a positive integer:");
    scanf("%d", &num);

    if (num < 0) {
        printf("invalid input: number must be positive.\n");
    } else {
        for (i = 1; i <= num; i++) {
            factorial *= i;
        }
        printf("The factorial of %d is %d.\n", num, factorial);
    }
```

4

Enter a positive integer:The factorial of 445 is

Questions
CMQ16

Write a program in C to find the factorial of a given number using pointers.

Test Data :
Input a number : 5

Expected Output :
The Factorial of 5 is : 120

Test Cases

1. N = 0
2. N = -5
3. N = 1
4. N = M
5. N = %

CMQ7
CMQ10
CMQ11
CMQ12
CMQ13
CMQ14
CMQ15
CMQ16
CMQ17
CMQ18

C | Run | Save | Logout

```c
#include <stdio.h>

void factorial(int num, int *result);

int main() {
    int num, result;
    printf("Enter a number: ");
    scanf("%d", &num);
    factorial(num, &result);
    printf("The factorial of %d is: %d\n", num , result);
    return 0;
}

void factorial(int num, int *result) {
     int i;
     *result = 1;
     for (i = 1; i <= num; i++) {
         *result *= i;
     }
}
```

Your Input Goes Here...!!!

Enter a number: The factorial of 0 is: 1

Questions
CMQ14.

Write a program in C to store n elements in an array and print the elements using pointer.

Test Data :
Input the number of elements to store in the array :5
Input 5 number of elements in the array :
element - 0 : 5
element - 1 : 7
element - 2 : 2
element - 3 : 9
element - 4 : 8

Expected Output :

Test Cases

1. N = 16
2. N = -8
3. N = 0
4. N = -10.01
5. N = 11.22

CMQ9
CMQ10
CMQ11
CMQ12
CMQ13
CMQ14
CMQ15
CMQ16
CMQ17
CMQ18

C | Run | Save | Logout

```c
#include <stdio.h>
int main() {

 int n, i;
printf("Enter the number of elements: ");
scanf("%d", &n);

int arr[n];
int *ptr  = arr;

printf("Enter %d elements:\n", n);
for(i = 0; i < n; i++) {
scanf("%d", ptr+1);
}
printf("Elements in the array are: \n");
for(i = 0; i < n; i++) {
printf("%d ", *(ptr+i));
}

return 0;
}
```

Your Input Goes Here...!!!

Enter the number of elements: Enter 0 elements:
Elements in the array are: