

CSA0265- C Programming

TEAM-6

Y. HEMANTH KUMAR REDDY

192211361

SIMATS| Saveetha School of Engineering

Test Cases

Test Case	Result
1. 04/11/1947	Passed
2. 11/15/1936	Passed
3. 31/05/1996	Passed
4. 64/09/1947	Passed
5. 00/00/2000	Passed

Your Input Goes Here...!!!

Enter a year: 0 is a leap year.

```
#include <stdio.h>
int main() {
    int year;
    printf("Enter a year: ");
    scanf("%d", &year);
    if (year % 4 == 0) {
        if (year % 100 == 0) {
            if (year % 400 == 0)
                printf("%d is a leap year.", year);
            else
                printf("%d is not a leap year.", year);
        } else
            printf("%d is a leap year.", year);
    } else
        printf("%d is not a leap year.", year);
    return 0;
}
```

SIMATS| Saveetha School of Engineering

Test Cases

Test Case	Result
1. 1 2 3 4 5 6 7 8 9	Pending

Your Input Goes Here...!!!

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

```
#include <stdio.h>
int main() {
    int matrix[3][3];
    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 (i = 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;
}
```

SIMATS CODE

Not secure | 172.18.49.175/php_c/home.php

Gmail YouTube Maps

SIMATS | Saveetha School of Engineering

YADAM HEMANTH KUMAR REDDY
192211361

Questions CMQ1.

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

C Run Save Test Cases Logout

```
1. #include<stdio.h>
2. int main() {
3.     int arr[10];
4.     int n;
5.     printf("Enter the size of the array(up to 10): ");
6.     scanf("%d", &n);
7.     printf("Enter the elements of the array: ");
8.     for(i = 0; i < n; i++) {
9.         scanf("%d", &arr[i]);
10.    }
11. max = arr[0];
12. min = arr[0];
13. for(i = 1; i < n; i++) {
14.     if(arr[i] > max) {
15.         max = arr[i];
16.     }
17.     if(arr[i] < min) {
18.         min = arr[i];
19.     }
20. }
21. printf("Maximum value in the array: %d\n",max);
22. printf("Minimum value in the array: %d\n",min);
23. return 0;
24.
25.
26.
27.
28.
```

Your Input Goes Here...!!!

Enter the size of the array(up to 10): Enter the elements of the array: Maximum value in the array: 0
Minimum value in the array: 0

ENG IN 14:53 07.04.2023

SIMATS C IDE

Not secure | 172.18.49.175/php_c/home.php

Gmail YouTube Maps

SIMATS | Saveetha School of Engineering

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

YADAM HEMANTH KUMAR REDDY
162211361

C Run Save Logout

Your Input Goes Here...!!!

Runtime Error

```
1. #include<stdio.h>
2. int main() {
3.     int matrix[3][3], i, j, sum = 0;
4.     float average;
5.     printf("Enter the elements of the matrix:\n");
6.     for(i=0; i<3; i++) {
7.         for(j=0; j<3; j++) {
8.             scanf("%d", &matrix[i][j]);
9.         }
10.    }
11.    for(i=0; i<3; i++) {
12.        for(j=0; j<3; j++) {
13.            sum += matrix[i][j];
14.        }
15.    }
16.    average = (float)sum / 9;
17.    printf("Sum = %d\n", sum);
18.    printf("Average = %f\n", average);
19.
20.    return 0;
21. }
```

14:54 07-04-2023

SIMATS C IDE Not secure | 172.18.49.175/php_c/home.php

Gmail YouTube Maps

SIMATS | Saveetha School of Engineering

YARAM HEMANTH KUMAR REDDY
192211361

Questions
CM213
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 = -1, N = 0
3. X = -3, N = 3
4. X = 0, N = 0
5. X = 123, N = 123

Logout

Your Input Goes Here...!!!

```
#include <stdio.h>
void add(int *a, int *b, int *sum){
    *sum = *a + *b;
}
int main() {
    int num1, num2, sum;
    printf("Enter two numbers to add: ");
    scanf("%d %d", &num1, &sum);
    printf("sum of %d and %d is %d", num1, num2, sum);
    return 0;
}
```

Enter two numbers to add: sum of 16 and 0 is 708

14:54 07-04-2023

SIMATS C IDE

Not secure | 172.18.49.175/php_c/home.php

Gmail YouTube Maps

SIMATS | Saveetha School of Engineering

YARAM HEMANTH KUMAR REDDY
192211361

Questions
CM214.

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 :
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 :
1. N =15
2. N = 0
3. N = 0
4. N = -10.01
5. N = 11.22

Run Save

#include <stdio.h>
int main() {
 3.
 4. int n, i;
 5. printf("Enter the number of elements: ");
 6. scanf("%d", &n);
 7.
 8. int arr[n];
 9. int *ptr = arr;
10.
11. printf("Enter %d elements:\n", n);
12. for(i = 0; i < n; i++) {
 13. scanf("%d", &ptr[i]);
 14.
 15. printf("Elements in the array are: \n");
16. for(i = 0; i < n; i++) {
 17. printf("%d ", *(ptr+i));
 18. }
 19.
 20. return 0;
 21. }

Your Input Goes Here...!!!

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

Logout

1454 07-04-2023

SIMATS C IDE

Not secure | 172.18.49.175/php_c/home.php

Gmail YouTube Maps

SIMATS| Saveetha School of Engineering

YASHAM HEMANTH KUMAR REDDY
162211381

Test Cases

Logout

Your Input Goes Here...!!!

Input the value of 1st elements : Input the value of 2nd element : Input the value of 3rd element :
The value before swapping are:
element 1 = 495
element 2 = 16
element 3 = 0
element 1 = 0
element 2 = 495
element 3 = 16

Questions
Q1Q2Q3

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
element 3 = 7

G Run Save

```
#include<csudio.h>
void swap(int *a, int *b) {
    int temp;
    *a = *b;
    *b = temp;
}
int main() {
    int arr[3];
    printf("Input the value of 1st elements : ");
    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("\n\nThe value 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[1]);
    printf("element 1 = %d\n", arr[0]);
    printf("element 2 = %d\n", arr[1]);
    printf("element 3 = %d\n", arr[2]);
    return 0;
}
```

SIMATS C IDE Not secure | 172.18.49.175/php_c/home.php

Gmail YouTube Maps

SIMATS | Saveetha School of Engineering

YARAM HEMANTH KUMAR REDDY
192211361

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 = %

Logout

Your Input Goes Here...!!!

Enter a number: The factorial of 0 is: 1

```
#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;
    }
}
```

14:54 07-04-2023

SIMATS C IDE Not secure | 172.18.49.175/php_c/home.php

Gmail YouTube Maps

SIMATS | Saveetha School of Engineering

YARAM HEMANTH KUMAR REDDY
192211361

Questions CMQ17.

Write a program in C to compute the sum of all elements in an array using pointers.

Test Data :
Input 5 number of elements in the array (max 10) : 5
element : 1 : 2
element : 2 : 3
element : 3 : 4
element : 4 : 5
element : 5 : 6

Expected Output :
4

C Run Save

Test Cases

1 N = 0 1 3 6 7 -5
2 N = 1 2 3 4 5 6
3 N = -5 5 3 0 0 5
4 N = 0 2 2 4 5 6

Your Input Goes Here...!!!

Input the number of elements to store in the array (max 10):input 0 number of elements in the array:
The sum of array is : 0

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;
}
```

14:54 07-04-2023

SIMATS C IDE Not secure | 172.18.49.175/php_c/home.php

Gmail YouTube Maps

SIMATS | Saveetha School of Engineering

YARAM HEMANTH KUMAR REDDY
192211361

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 = 72

Logout

Your Input Goes Here...!!!

```
#include<stdio.h>
int is_prime(int num) {
    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;
}
```

Enter a number: 0 is not a prime number

14:55 07-04-2023

SIMATS C IDE Not secure | 172.18.49.175/php_c/home.php

Gmail YouTube Maps

SIMATS | Saveetha School of Engineering

YARAM HEMANTH KUMAR REDDY
192211361

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. 28
3. 143
4. 841
5. -963

Logout

Your Input Goes Here...!!!

Enter the start and end values: The perfect number between 16 and 381 are:

```
#include<stdio.h>
int isperfect(int num) {
    int 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 ;
    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;
}
```

14:56 07-04-2023

SIMATS C IDE Not secure | 172.18.49.175/php_c/home.php

Gmail YouTube Maps

SIMATS | Saveetha School of Engineering

YARAM HEMANTH KUMAR REDDY
192211361

Questions CMQ1

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

Logout

Your Input Goes Here...!!!

```
#include <stdio.h>
int main() {
    int M, N, even_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 {
            even_count++;
        }
    }
    printf("\nNumber of Even Numbers = %d", even_count);
    return 0;
}
```

ExecutionFolder/192211361.c: In function 'main':
ExecutionFolder/192211361.c:8:37: error: expected ';' before '}' token
8 | printf("Enter the value of N: ");
| :;
| ;

ENG IN 14:56 07-04-2023

SIMATS C IDE Not secure | 172.18.49.175/php_c/home.php

Gmail YouTube Maps

SIMATS | Saveetha School of Engineering

YARAM HEMANTH KUMAR REDDY
192211361

Questions
CMQ20

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: 128

Sample Output:
Student Users: 688

C Run Save Test Cases

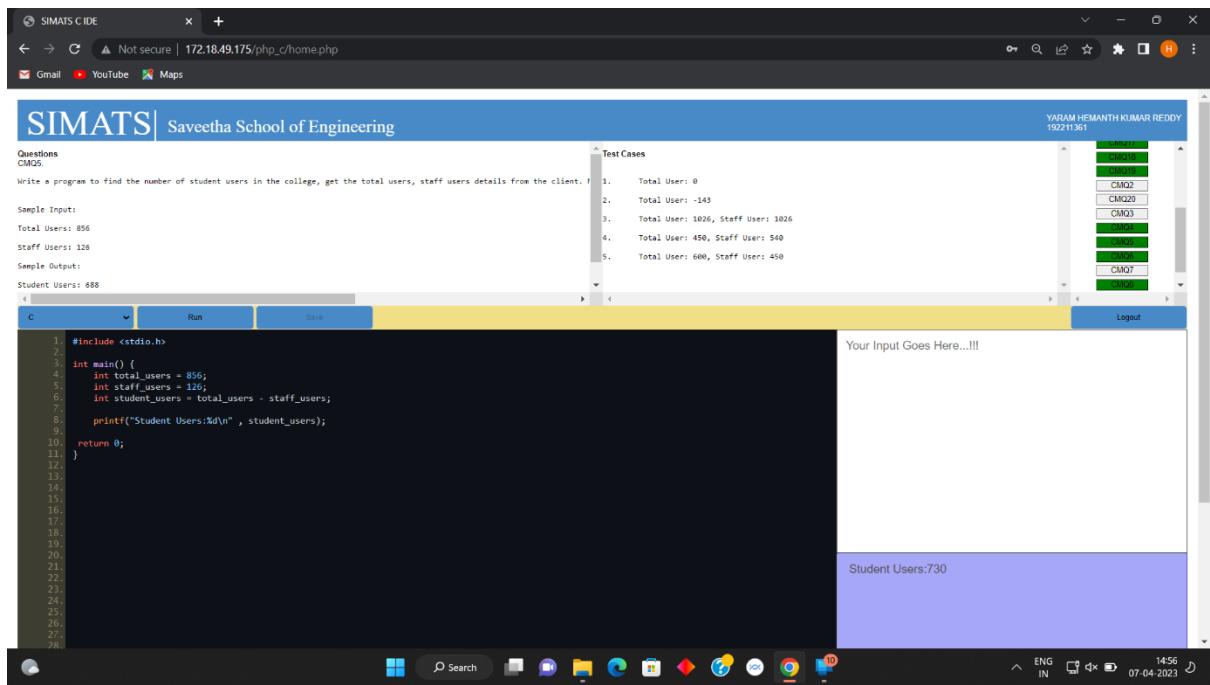
```
#include <stdio.h>
int main() {
    int total_users = 856;
    int staff_users = 128;
    int student_users = total_users - staff_users;
    printf("Student Users:%d\n", student_users);
    return 0;
}
```

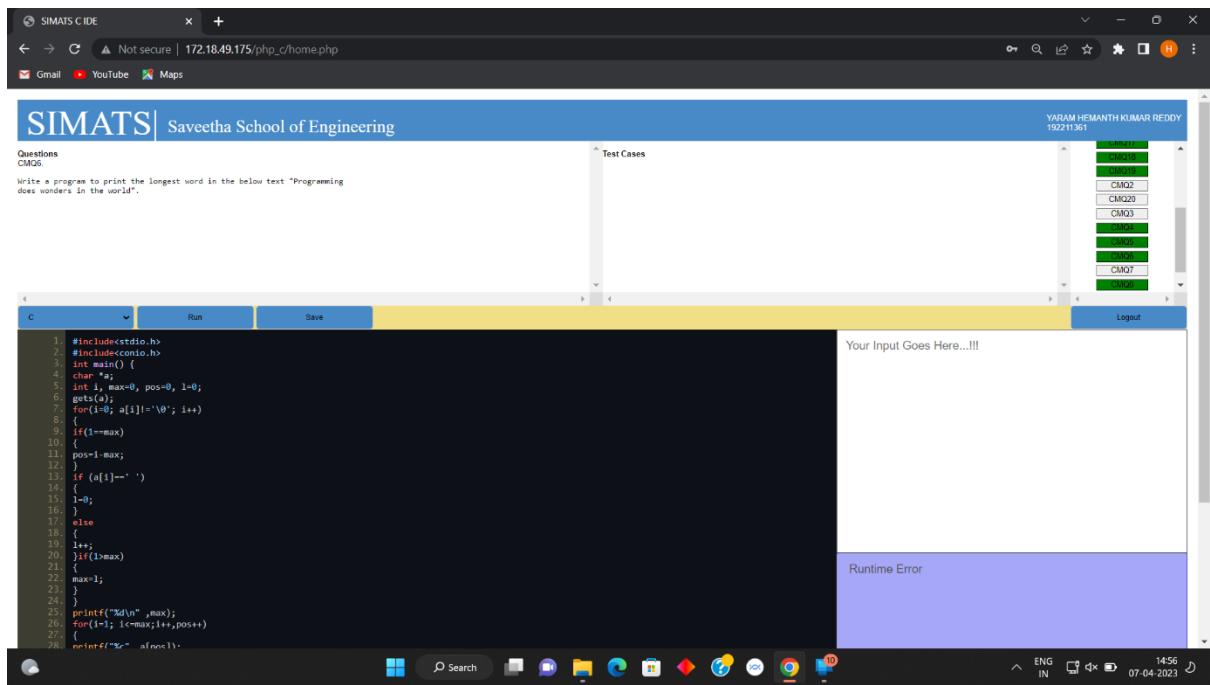
Your Input Goes Here...!!!

Student Users:730

Logout

14:56 07-04-2023





SIMATS C IDE

Not secure | 172.18.49.175/php_c/home.php

Gmail YouTube Maps

SIMATS | Saveetha School of Engineering

YARAM HEMANTH KUMAR REDDY
192211361

Questions
CMQ38
Write a C program to display the details of student(Name , Age) by passing structures to a function.

Sample Input :
Enter No.Students: 1
Enter student 1 Name, Age :AAA, 25

Sample Output:
Student 1 details:
Name :AAA
Age : 25

Test Cases

No Student -4 (Any details of student)
No Student -5
No Student 1(62, 28)
No Student A
No Student 1(XXX, 28.2)

C Run Save Logout

Your Input Goes Here...!!!

```
#include<stdio.h>
int main()
{
    int numStudents,totalUsers,numStaff,numNonTeachingStaff,numStudentsUsers;
    printf("enter the number of students user: \n");
    scanf("%d",&numStudents);
    printf("enter the total number of users: \n");
    scanf("%d",&totalUsers);
    printf("enter the number of staff users: \n");
    scanf("%d",&numStaff);
    printf("enter the number of non teaching staff users: \n");
    scanf("%d", &numNonTeachingStaff);
    numStudentsUsers=(totalUsers-numStaff-numNonTeachingStaff);
    printf("number of students users In the college is-%d\n",numStudentsUsers);
    return 0;
}
```

enter the number of students user:
enter the total number of users:
enter the number od staff users:
enter the number of non teaching saff users:
number of students users in the college is:-9441

14:56 07-04-2023