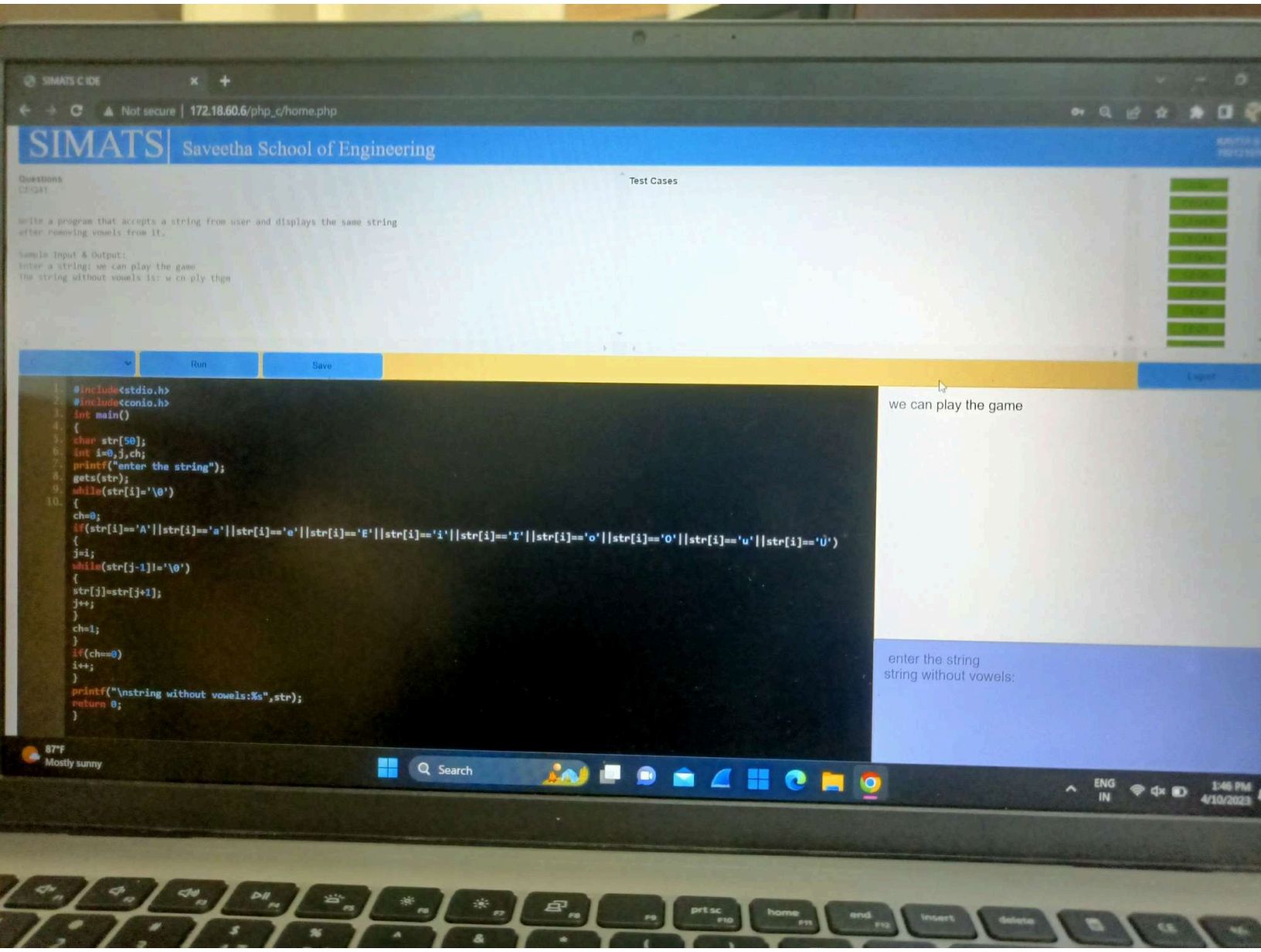
SIMATS C IDE
Not secure | 172.18.60.6/php_c/home.php
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Questions
Test Cases
Write a program that accepts a string from user and displays the same string
after removing vowels from it.
Sample Input & Output:
Enter a string: we can play the game
The string without vowels is: w cn ply thgm
Run
Save
#include<stdio.h>
#include<conio.h>
int main()
{
char str[50];
int i=0,j,ch;
printf("enter the string");
gets(str);
while(str[i]='\0')
{
ch=0;
if(str[i]=='A'||str[i]=='a'||str[i]=='e'||str[i]=='E'||str[i]=='i'||str[i]=='I'||str[i]=='o'||str[i]=='O'||str[i]=='u'||str[i]=='U')
{
j=i;
while(str[j-1]!='\0')
{
str[j]=str[j+1];
j++;
}
ch=1;
}
if(ch==0)
i++;
}
printf("\nstring without vowels:%s",str);
return 0;
}
we can play the game
enter the string
string without vowels:
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Search
ENG
IN
1:46 PM
4/10/2023

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Questions

CEQ42.

Write a program to print hollow Rectangle Dollar pattern?

Test Cases

C | Run | Save

```c
#include<stdio.h>
int main()
{
int n=4;
int m=6;
int i,j;
for(i=1;i<=n;i++)
{
for(j=1;j<=m;j++)
{
if(i==1||i==n||j==1||j==m)
{
printf("    $");
}
else
{
printf(" ");
}}
printf("%n");
}
return 0;
}
```

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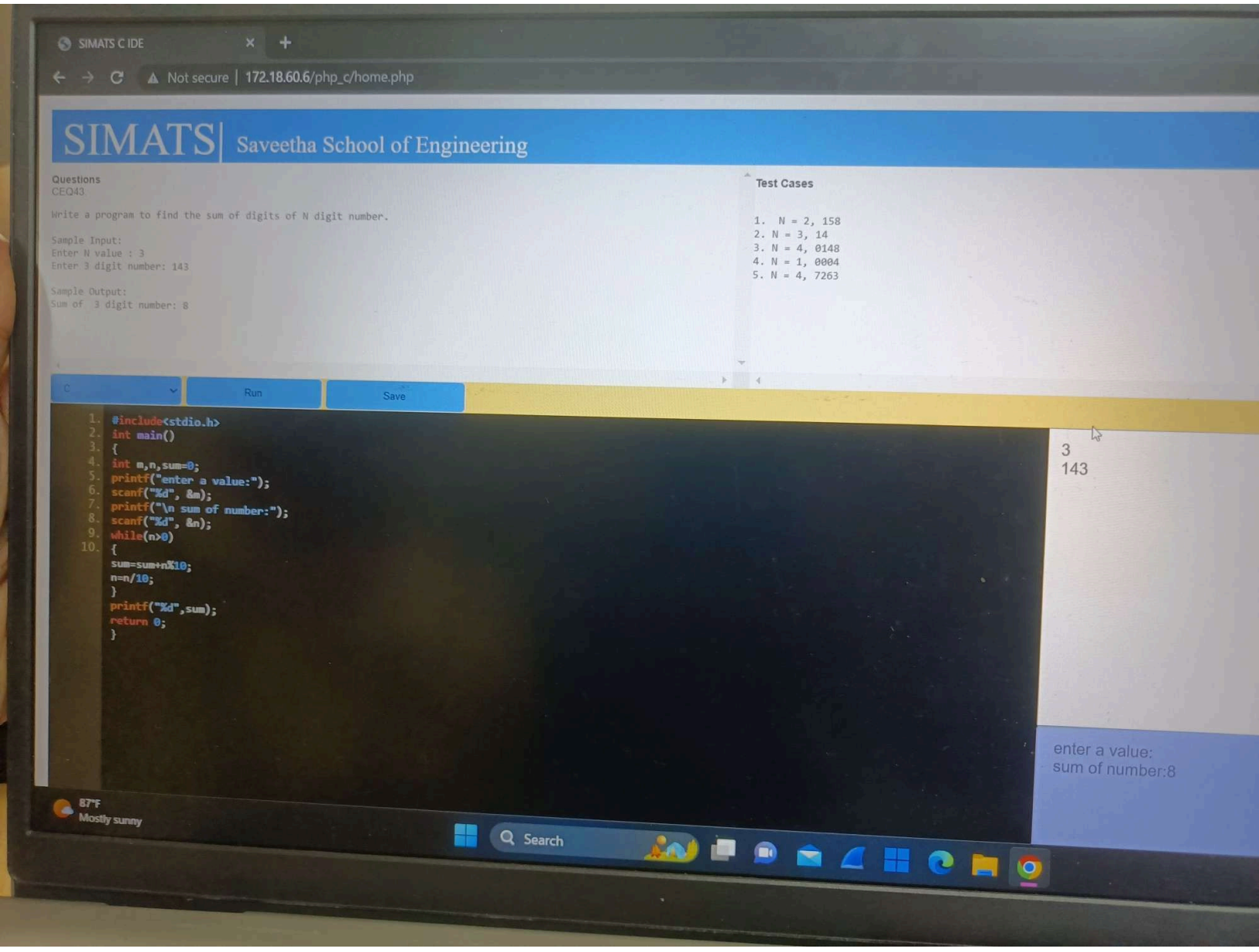
Search


SIMATS C IDE
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Questions
CEQ43
Write a program to find the sum of digits of N digit number.
Sample Input:
Enter N value : 3
Enter 3 digit number: 143
Sample Output:
Sum of 3 digit number: 8
Test Cases
1. N = 2, 158
2. N = 3, 14
3. N = 4, 0148
4. N = 1, 0004
5. N = 4, 7263
C
Run
Save
@include<stdio.h>
int main()
{
int m,n,sum=0;
printf("enter a value:");
scanf("%d", &m);
printf("\n sum of number:");
scanf("%d", &n);
while(n>0)
{
sum=sum+n%10;
n=n/10;
}
printf("%d",sum);
return 0;
}
3
143
enter a value:
sum of number:8
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Questions

CEQ44

Write a program to find the square root of a perfect square number(print both the positive and negative values)

Sample Input:
Enter the number : 6561

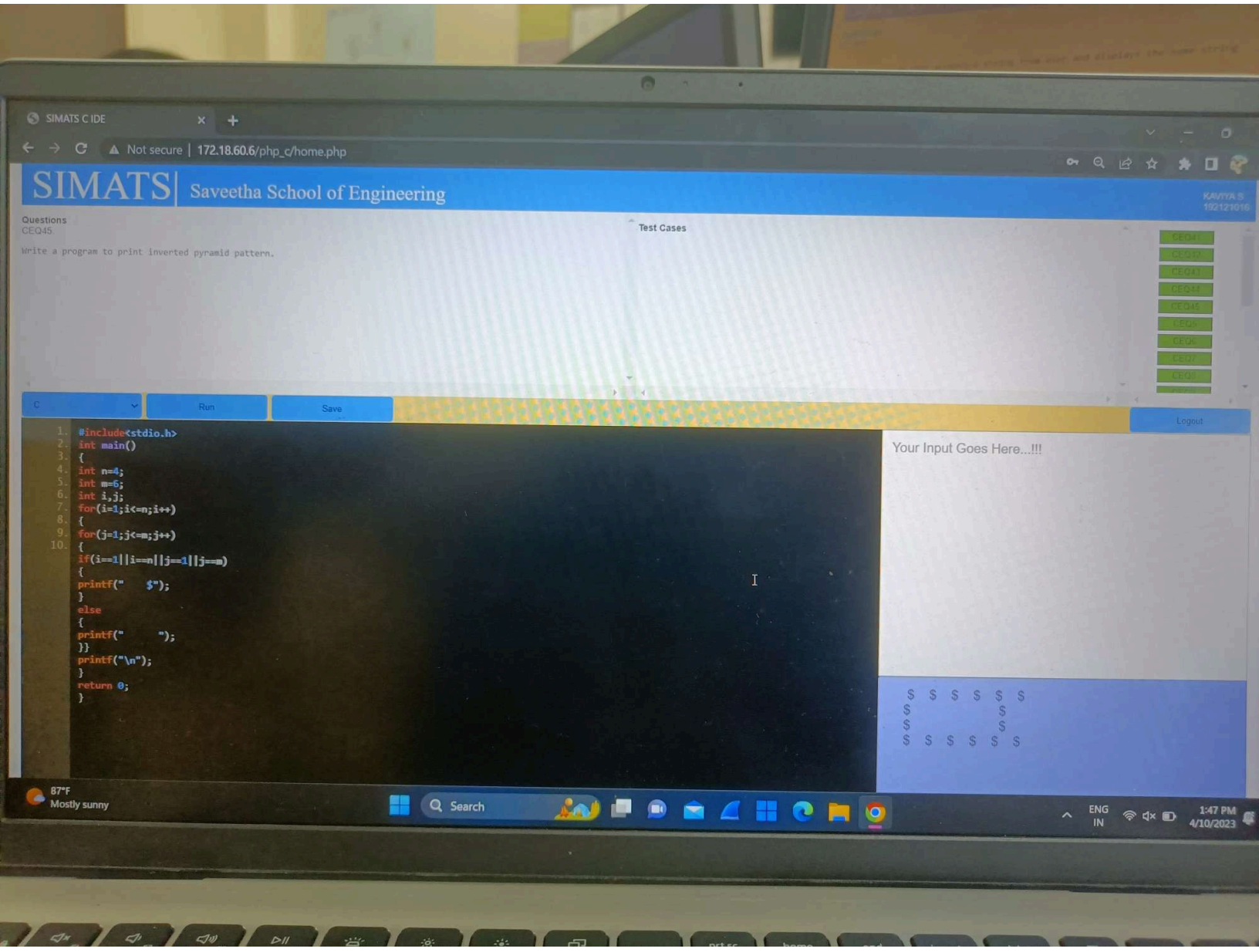
Sample Output:
Square Root: 81, -81

Test Cases

1. 1225
2. 9801
3. 1827
4. -100
5. 0

C | Run | Save

```c
#include<stdio.h>
#include<math.h>
int main()
{
float n,s;
printf("%n enter the number:");
scanf("%d", &n);
s=sqrt(n);
printf("%n square root : %f",s);
return 0;
}
```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192121016
Questions
CEQ45
Write a program to print inverted pyramid pattern.
Test Cases
C
Run
Save
Logout
#include<stdio.h>
int main()
{
int n=4;
int m=6;
int i,j;
for(i=1;i<=n;i++)
{
for(j=1;j<=m;j++)
{
if(i==1||i==n||j==1||j==m)
{
printf(" $");
}
else
{
printf(" ");
}}
printf("\n");
}
return 0;
}
Your Input Goes Here...!!!
$ $ $ $ $ $
$ $
$ $
$ $ $ $ $ $
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Search
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IN
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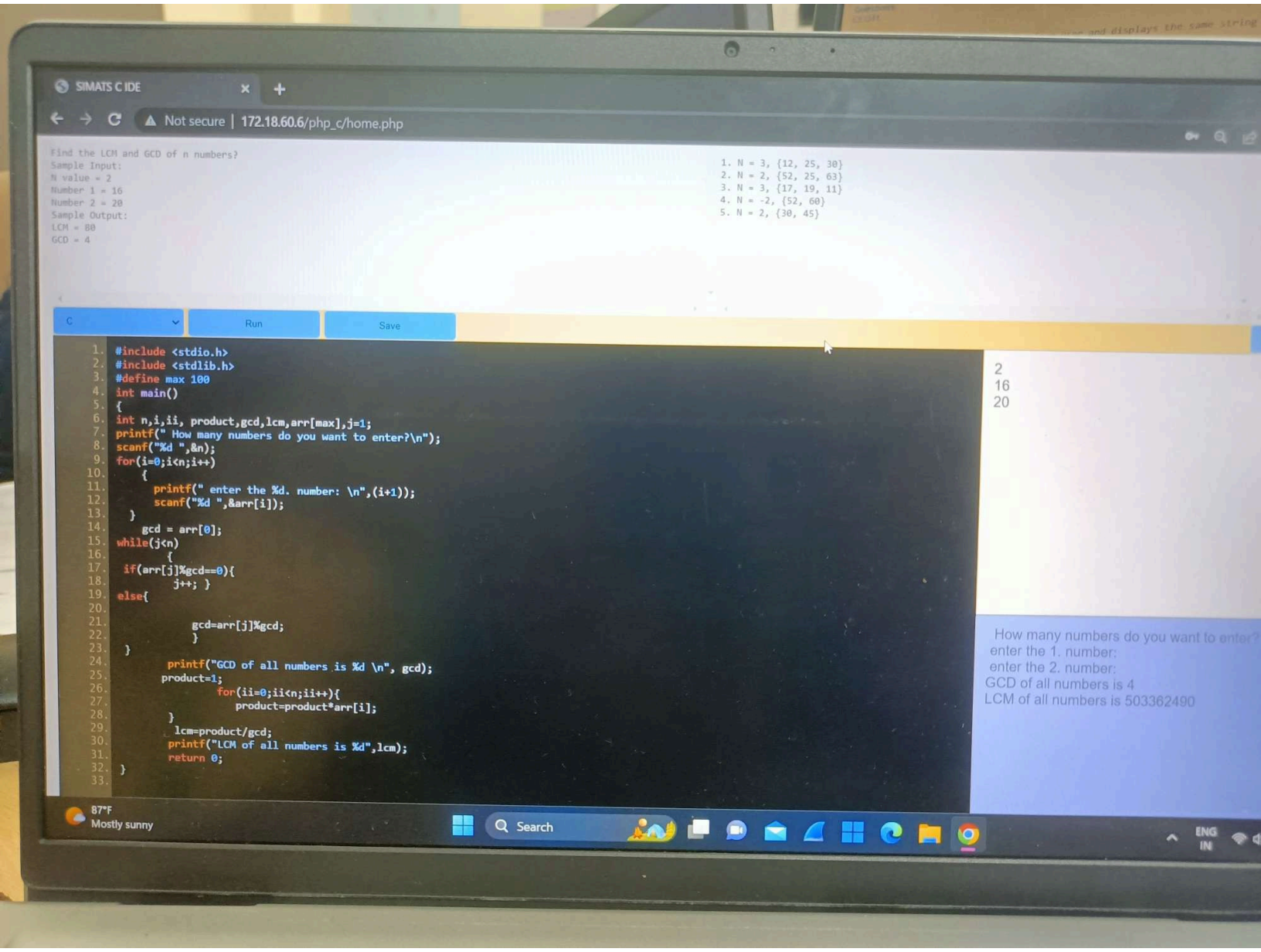
4/10/2023


SIMATS C IDE
Not secure | 172.18.60.6/php_c/home.php
Find the LCM and GCD of n numbers?
Sample Input:
N value = 2
Number 1 = 16
Number 2 = 20
Sample Output:
LCM = 80
GCD = 4
1. N = 3, {12, 25, 30}
2. N = 2, {52, 25, 63}
3. N = 3, {17, 19, 11}
4. N = -2, {52, 60}
5. N = 2, {30, 45}
C
Run
Save
#include <stdio.h>
#include <stdlib.h>
#define max 100
int main()
{
int n,i,ii, product,gcd,lcm,arr[max],j=1;
printf(" How many numbers do you want to enter?\n");
scanf("%d ",&n);
for(i=0;i<n;i++)
{
printf(" enter the %d. number: \n",(i+1));
scanf("%d ",&arr[i]);
}
gcd = arr[0];
while(j<n)
{
if(arr[j]%gcd==0){
j++; }
else{
gcd=arr[j]%gcd;
}
}
printf("GCD of all numbers is %d \n", gcd);
product=1;
for(ii=0;ii<n;ii++){
product=product*arr[i];
}
lcm=product/gcd;
printf("LCM of all numbers is %d",lcm);
return 0;
}
2
16
20
How many numbers do you want to enter?
enter the 1. number:
enter the 2. number:
GCD of all numbers is 4
LCM of all numbers is 503362490
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Questions
CEQ6.

Write a program to print Right Triangle Star Pattern.

Sample Input:: n = 5
Output:

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

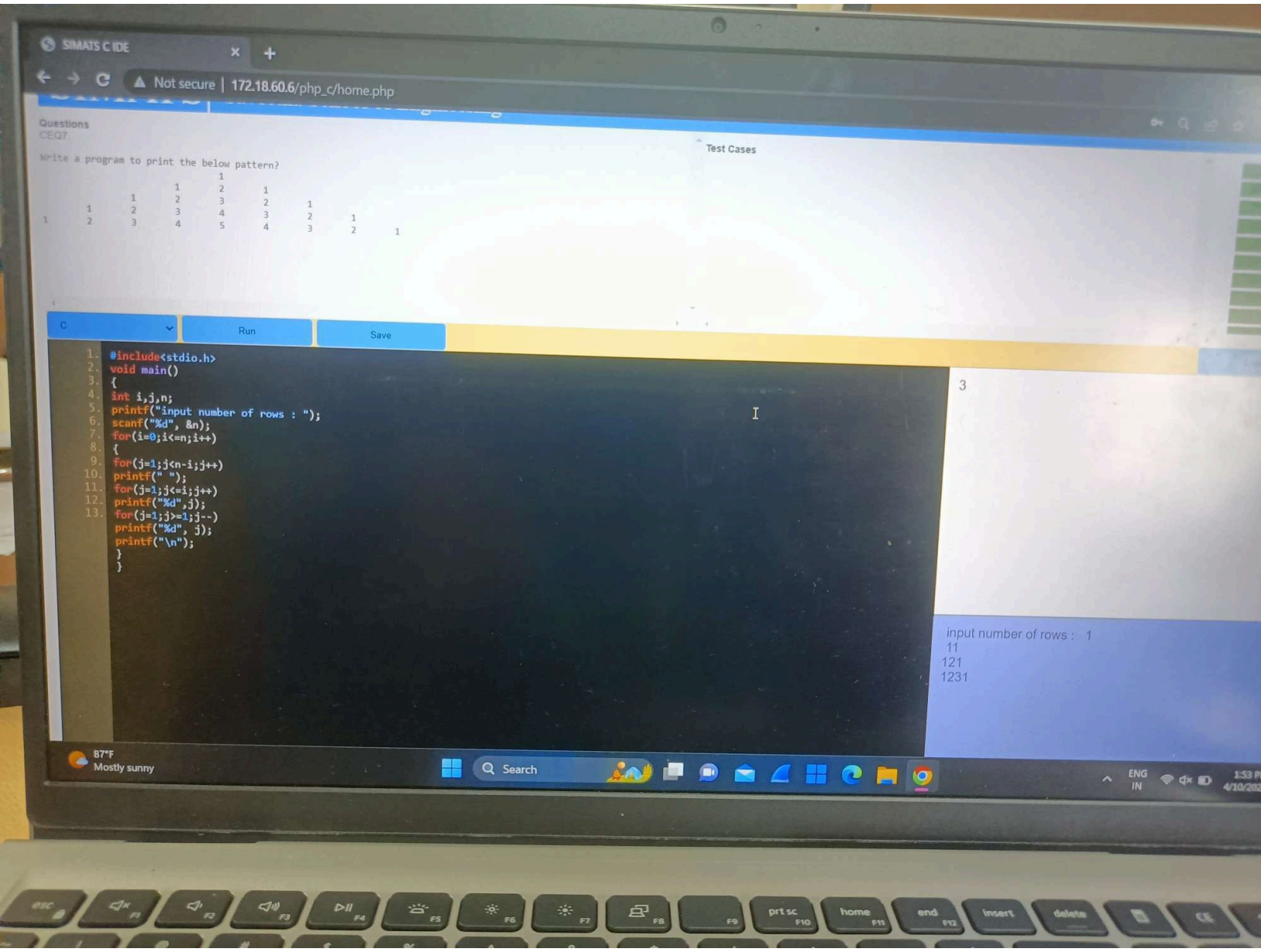
Test Case

C

Run

Save

```c
#include <stdio.h>
int main() {
    int i, j, rows;
    printf("Enter the number of rows: ");
    scanf("%d", &rows);
    for (i = 1; i <= rows; ++i) {
        for (j = 1; j <= i; ++j) {
            printf("* ");
        }
        printf("\n");
    }
    return 0;
}
```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Questions
CEQ7.
Write a program to print the below pattern?
1
1 2 1
1 2 3 2 1
1 2 3 4 3 2 1
1 2 3 4 5 4 3 2 1
Test Cases
C
Run
Save
#include<stdio.h>
void main()
{
int i,j,n;
printf("input number of rows : ");
scanf("%d", &n);
for(i=0;i<=n;i++)
{
for(j=1;j<n-i;j++)
printf(" ");
for(j=1;j<=i;j++)
printf("%d",j);
for(j=1;j>=1;j--)
printf("%d", j);
printf("\n");
}
}
3
input number of rows : 1
11
121
1231
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Questions

CEQ8

Write a program using function to calculate the simple interest. Suppose the customer is a senior citizen, He is being offered 12 percent rate of interest; for all other customers, the ROI is 10 percent.

Sample Input:
Enter the principal amount: 200000
Enter the no of years: 3
Is customer senior citizen (y/n): n

Sample Output:
Interest: 60000

Test Cases

1. Principal: 2000 , Years: 0
2. Principal: 20000 , Years: -2
3. Principal: -2000 , Years: 2
4. Principal: 2 , Years: 2000
5. Principal: 0 , Years: 5

C | Run | Save

```c
#include <stdio.h>

int main()
{
 float principle, rate, sinterest;
 int time;

 printf("Enter Principle Amount, Rate %% per Annum and Time\n");
 scanf ("%f %f %d", &principle, &rate, &time);

 sinterest = (principle * rate * time)/ 100.0;

 printf ("Principle Amount = %f\n", principle);
 printf ("Rate %% per Annum   = %f%%\n", rate);
 printf ("Time    = %d years\n", time);
 printf ("Simple Interest  = %f\n", sinterest);
}
```

200000
3
n

Enter Principle Amount, Rate %
Principle Amount = 200000.00
Rate % per Annum = 3.00%
Time = 362419088 years
Simple Interest = 217451436441

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Questions

CEQ9

Write a C Program to Find Even Sum of Fibonacci Series Till number N?

Sample Input: n = 4

Sample Output: 33

(n = 4, So here the Fibonacci series will be produced from 0th term till 8th term:0, 1, 1, 2, 3, 5, 8, 13, 21
Sum of numbers at even indexes = 0 + 1 + 3 + 8 + 21 = 33)

Test Cases

Run | Save

```c
#include <stdio.h>
int calculateEvenSum(int n)
{
 if (n <= 0)
return 0;
int fibo[2 * n + 1];
fibo[0] = 0, fibo[1] = 1;
 int sum = 0;
 for (int i = 2; i <= 2 * n; i++) {
fibo[i] = fibo[i - 1] + fibo[i - 2];
 if (i % 2 == 0)
 sum += fibo[i];
}
return sum;
}
 int main()
{
 int n = 5;
  int sum = calculateEvenSum(n);
  printf("Even indexed Fibonacci Sum upto %d terms = %d",n, sum);
  return 0;
}
```

Your Input Goes Here...!!!

Even indexed Fibonacci Sum upto 5 ter

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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

C | Run | Save

```c
#include <stdio.h>
#include <stdlib.h>

int main()
{
    int num1, num2,r,i;
printf("Enter the first number for the range: ");
    scanf("%d",&num1);
    printf("Enter the second number for the range: ");
    scanf("%d",&num2);
    printf("\nDisplay the even numbers between %d and %d are: ",num1,num2);
for(i=num1; i<=num2; i++){
        r=i%2;
        if(r==0)
            printf("\n %d",i); }
printf("\n\nDisplay the odd numbers between %d and %d are: ",num1,num2);

    for(i=num1; i<=num2; i++){
        r=i%2;
        if(r==1)
            printf("\n %d",i);
    }
    getch();
    return 0;
}
```

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Questions

CMQ5

Write a program to find the number of student users in the college, get the total users, staff users details from the

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

C

Run

Save

```c
#include<stdio.h>
int main()
{
int total,staff;
scanf("%d", &total);
scanf("%d", &staff);
int non=staff/3;
int stu=total-(non+staff);
printf("%d", stu);
}
```

856
126

688

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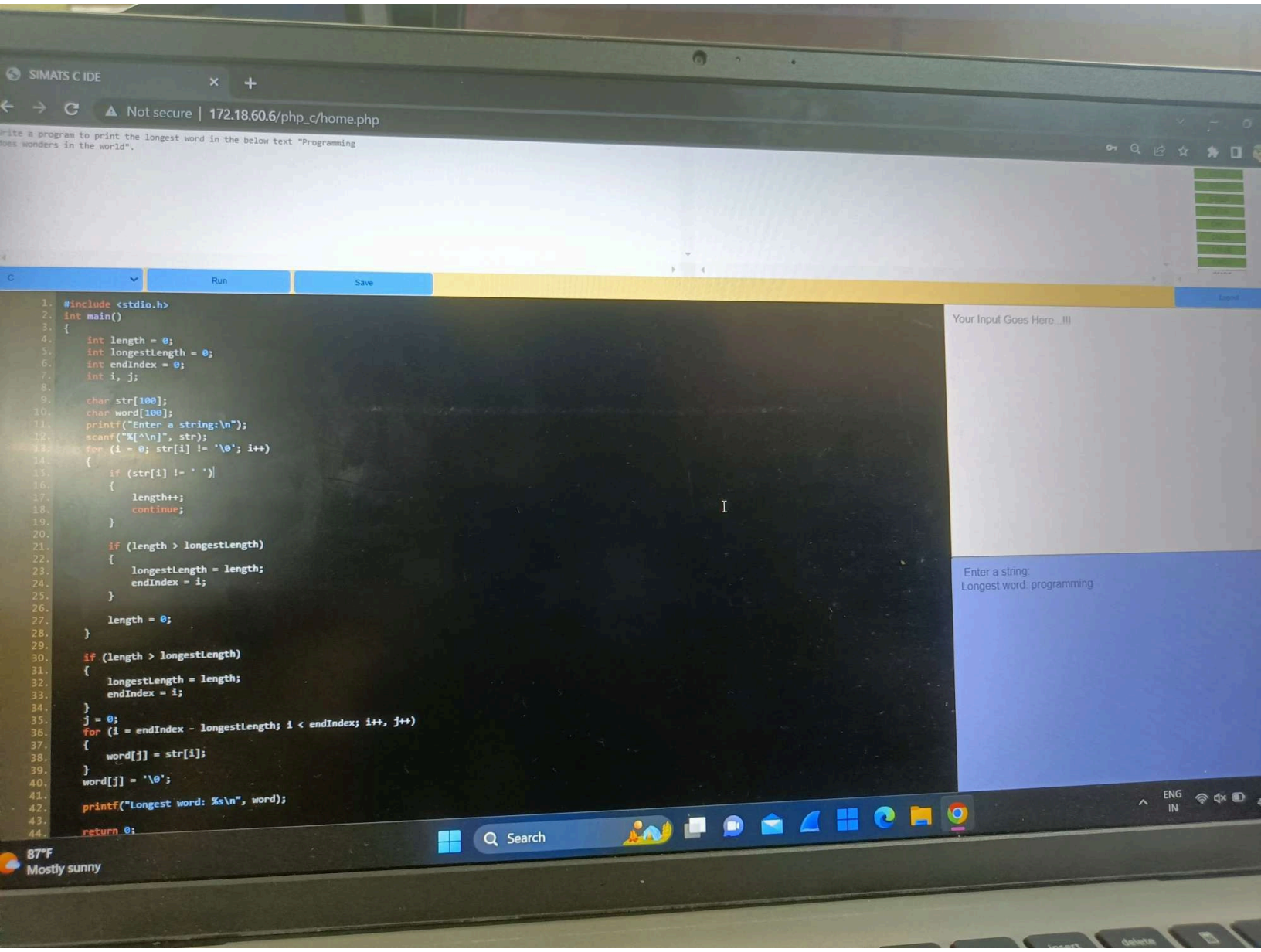
Search




```c
#include <stdio.h>
int main()
{
    int length = 0;
    int longestLength = 0;
    int endIndex = 0;
    int i, j;

    char str[100];
    char word[100];
    printf("Enter a string:\n");
    scanf("%[^\n]", str);
    for (i = 0; str[i] != '\0'; i++)
    {
        if (str[i] != ' ')
        {
            length++;
            continue;
        }

        if (length > longestLength)
        {
            longestLength = length;
            endIndex = i;
        }

        length = 0;
    }

    if (length > longestLength)
    {
        longestLength = length;
        endIndex = i;
    }
    j = 0;
    for (i = endIndex - longestLength; i < endIndex; i++, j++)
    {
        word[j] = str[i];
    }
    word[j] = '\0';

    printf("Longest word: %s\n", word);

    return 0;
```

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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 :
Science 82

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)

C | Run | Save

```c
#include <stdio.h>
#include <stdlib.h>
struct course {
  int marks;
  char subject[30];
};

int main() {
  struct course *ptr;
  int noOfRecords;
  printf("Enter the number of records: ");
  scanf("%d", &noOfRecords);

  // Memory allocation for noOfRecords structures
  ptr = (struct course *)malloc(noOfRecords * sizeof(struct course));
  for (int i = 0; i < noOfRecords; ++i) {
    printf("Enter subject and marks:\n");
    scanf("%s %d", (ptr + i)->subject, &(ptr + i)->marks);
  }

  printf("Displaying Information:\n");
  for (int i = 0; i < noOfRecords; ++i) {
    printf("%s\t%d\n", (ptr + i)->subject, (ptr + i)->marks);
  }

  free(ptr);

  return 0;
}
```

2
sci 40
math 78

Enter the number of records: 2
Enter subject and marks:
Displaying Information:
sci 40
math 78

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CHQ4

Write a program to print n prime numbers then find the nth Prime number.

Sample Input:
N = 3

Sample Output:
3rd Prime number is 5
3 prime numbers after 5 are: 7, 11, 13

1. N = P
2. N = 0
3. N = -4
4. N = 11
5. N = 7.2

C | Run | Save

```c
#include<stdio.h>

void main()
{
    int i,j,n;

    printf("Enter the number till which you want prime numbers\n");
    scanf("%d",&n);

    printf("Prime numbers are:-\n");
    for(i=2;i<=n;i++)
    {
        int c=0;
        for(j=1;j<=i;j++)
        {
            if(i%j==0)
            {
                c++;
            }
        }

       if(c==2)
        {
            printf("%d ",i);
        }
    }
}
```

3

Enter the number till which you want
Prime numbers are:-
2 3

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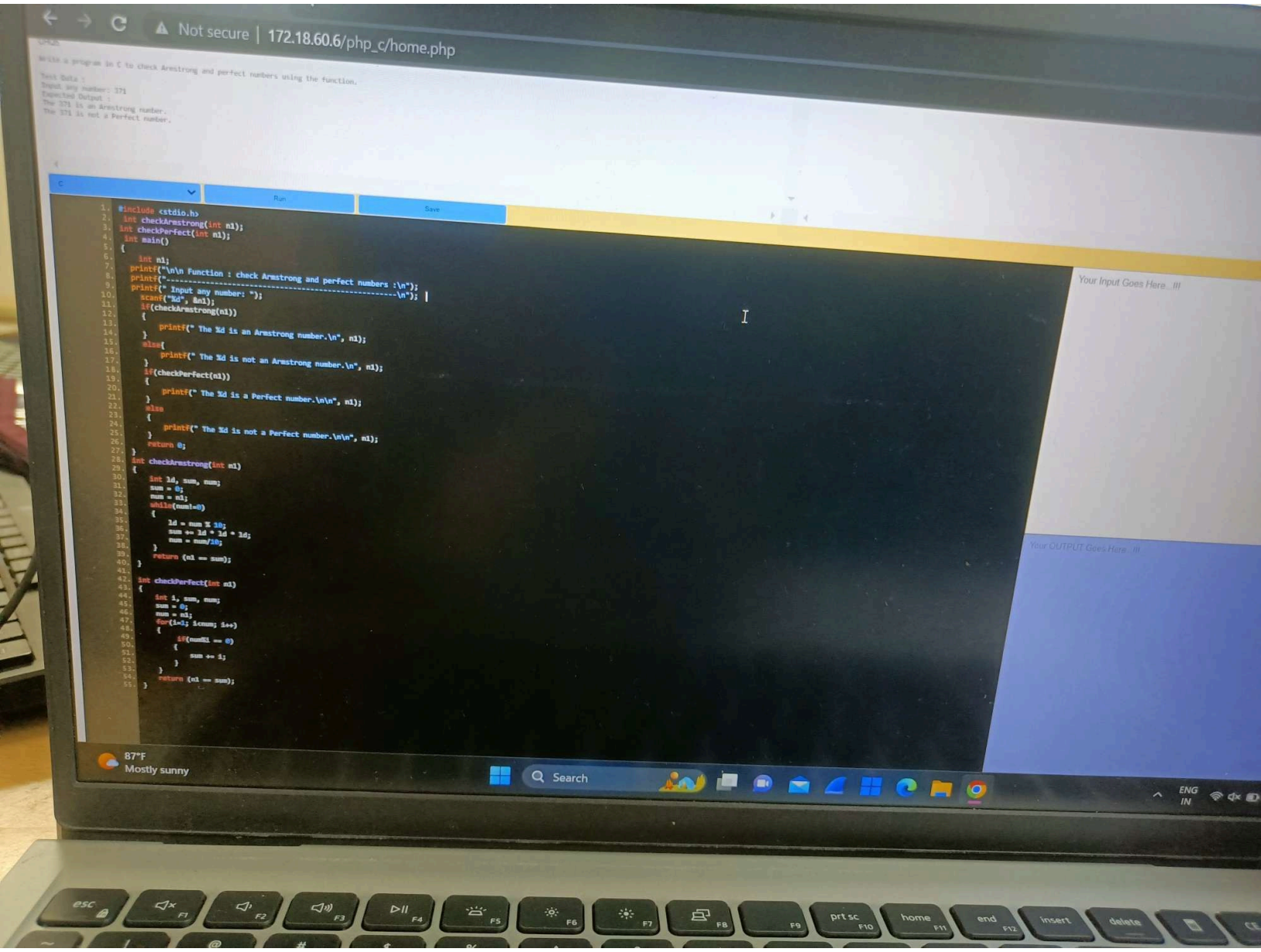
Not secure | 172.18.60.6/php_c/home.php
Write a program in C to check Armstrong and perfect numbers using the function.
Test Data :
Input any number: 371
Expected Output :
The 371 is an Armstrong number.
The 371 is not a Perfect number.
Run
Save
#include <stdio.h>
int checkArmstrong(int n1);
int checkPerfect(int n1);
int main()
{
int n1;
printf("\n\n Function : check Armstrong and perfect numbers :\n");
printf("--\n");
printf(" Input any number: ");
scanf("%d", &n1);
if(checkArmstrong(n1))
{
printf(" The %d is an Armstrong number.\n", n1);
}
else{
printf(" The %d is not an Armstrong number.\n", n1);
}
if(checkPerfect(n1))
{
printf(" The %d is a Perfect number.\n\n", n1);
}
else
{
printf(" The %d is not a Perfect number.\n\n", n1);
}
return 0;
}
int checkArmstrong(int n1)
{
int ld, sum, num;
sum = 0;
num = n1;
while(num!=0)
{
ld = num % 10;
sum += ld * ld * ld;
num = num/10;
}
return (n1 == sum);
}
int checkPerfect(int n1)
{
int i, sum, num;
sum = 0;
num = n1;
for(i=1; i<num; i++)
{
if(num%i == 0)
{
sum += i;
}
}
return (n1 == sum);
}
Your Input Goes Here... !!!
Your OUTPUT Goes Here... !!!
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Write a program to search the given element using binary search method and display its position in a linear array.

Sample Input:
Array of elements = {16, 18, 27, 16, 23, 21, 19}
Element to search = 23

Sample Output:
Given element 23 is found at 5 th position

C | Run | Save

```c
#include<stdio.h>
int main()
{
    int c, first, last, middle, n, search, array[100];
    printf("Enter number of elements\n");
    scanf("%d",&n);
    printf("Enter %d integers\n", n);
    for ( c = 0 ; c < n ; c++ )
        scanf("%d",&array[c]);
    printf("Enter value to find\n");
    scanf("%d",&search);
    first = 0;
    last = n - 1;
    middle = (first+last)/2;
    while( first <= last )
    {
        if ( array[middle] < search )
            first = middle + 1;
        else if ( array[middle] == search )
        {
            printf("%d found at location %d.\n", search, middle+1);
            break;
        }
        else
            last = middle - 1;
        middle = (first + last)/2;
    }
    if ( first > last )
        printf("Not found! %d is not present in the list.\n", search);
    return 0;
}
```

16
18
27
16
23
21
19

23

Enter number o
Enter 16 intege
Enter value to fi
Not found! 13 is

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Search

Questions
CHQ8.

Find the M^{th} maximum number and N^{th} minimum number in an array and then find the sum of it and difference

Sample Input:
Array of elements = {14, 16, 87, 36, 25, 89, 34}
M = 1
N = 3

Sample Output:
1st Maximum Number = 89
3rd Minimum Number = 25
Sum = 114
Difference = 64

Test Cases

1. {16, 16, 16 16, 16}, M = 0, N =
2. {0, 0, 0, 0}, M = 1, N = 2
3. {-12, -78, -35, -42, -85}, M = 3 ,
4. {15, 19, 34, 56, 12}, M = 6 , N =
5. {85, 45, 65, 75, 95}, M = 5 , N =

C | Run | Save

```c

#include <stdio.h>


int min(int a,int b)
{

  int min = a;

  if(min > b)

    min = b;

  return min;
}


int max(int a,int b)
{

  int max = a;

  if(max < b)
```

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Run Save

```
23.   if(max < b)
24.
25.     max = b;
26.
27.   return max;
28. }
29.
30.
31. int getMin(int arr[], int n)
32. {
33.
34.   int res = arr[0];
35.
36.   for (int i = 1; i < n; i++)
37.
38.     res = min(res, arr[i]);
39.
40.   return res;
41. }
42.
43.
44. int getMax(int arr[], int n)
45. {
46.
47.   int res = arr[0];
48.
49.   for (int i = 1; i < n; i++)
50.
51.     res = max(res, arr[i]);
52.
53.   return res;
54. }
55.
56.
57.
58. int findSum(int arr[], int n)
```

Run Save

```
int findSum(int arr[], int n)
{

  int min = getMin(arr, n);

  int max = getMax(arr, n);


  return min + max;
}


int findProduct(int arr[], int n)
{

  int min = getMin(arr, n);

  int max = getMax(arr, n);

  return min * max;
}


int main()
{

  int arr[] = { 12, 1234, 45, 67, 1 };
  int n = sizeof(arr) / sizeof(arr[0]);


  printf("Sum = %d\n",findSum(arr, n));
```

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```
    int max = getMax(arr, n);

    return min * max;
}


int main()
{
    int arr[] = { 12, 1234, 45, 67, 1 };
    int n = sizeof(arr) / sizeof(arr[0]);

    printf("Sum = %d\n",findSum(arr, n));

    printf("Product = %d\n",findProduct(arr, n));

    return 0;
}
```

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Questions
CHQ8.

In an organization they decide to give bonus to all the employees on New Year. A 5% bonus on salary is given to the grade A workers and 10% bonus on salary to the grade B workers. Write a program to enter the salary and grade of the employee. If the salary of the employee is less than $10,000 then the employee gets an extra 2% bonus on salary Calculate the bonus that has to be given to the employee and print the salary that the employee will get.

Sample Input & Output:
Enter the grade of the employee: B
Enter the employee salary: 50000
Salary=50000
Bonus=5000.0

C | Run | Save

```c
#include<stdio.h>

#include<string.h>

 int main()

{

 int i,j;

 float salary,bonus;

 char gender;

 printf("Enter M for Male and F for Female\n");

 scanf("%c",&gender);

 printf("Enter Salary\n");

 scanf("%f",&salary);

 if(gender=='M' || gender=='m')

 {

  if(salary>10000)

   bonus=(float)(salary*0.05);

  else

   bonus=(float)(salary*0.07);

 }

 if(gender=='F' || gender=='f')

 {

  if(salary>10000)

   bonus=(float)(salary*0.1);

  else

   bonus=(float)(salary*0.12);

 }

  salary+=bonus;

  printf("Bonus=%.2f\nSalary=%.2f\n",bonus,salary);

 }
```

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SIMATS C IDE

Not secure | 172.18.60.6/php_c/home.php

CMQ8.

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

C | Run | Save

```c
#include<stdio.h>
struct student
{
int age;
char name[25];
}
stud[100];
void main()
{
int i,n;
printf("enter the no of students\n");
scanf("%d",&n);
printf("enter student info as name,age");
for(i=0;i<n;i++)
{
scanf("%s %d\n",stud[1].name,&stud[i].age);
}
printf("\nNAME\t\tAGE\t\n");
for(i=0;i<n;i++)
{
printf("%s %d\n",stud[i].name,stud[i].age);
}
}
```

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