

## CSA02- C Programming

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### Questions

CEQ3.

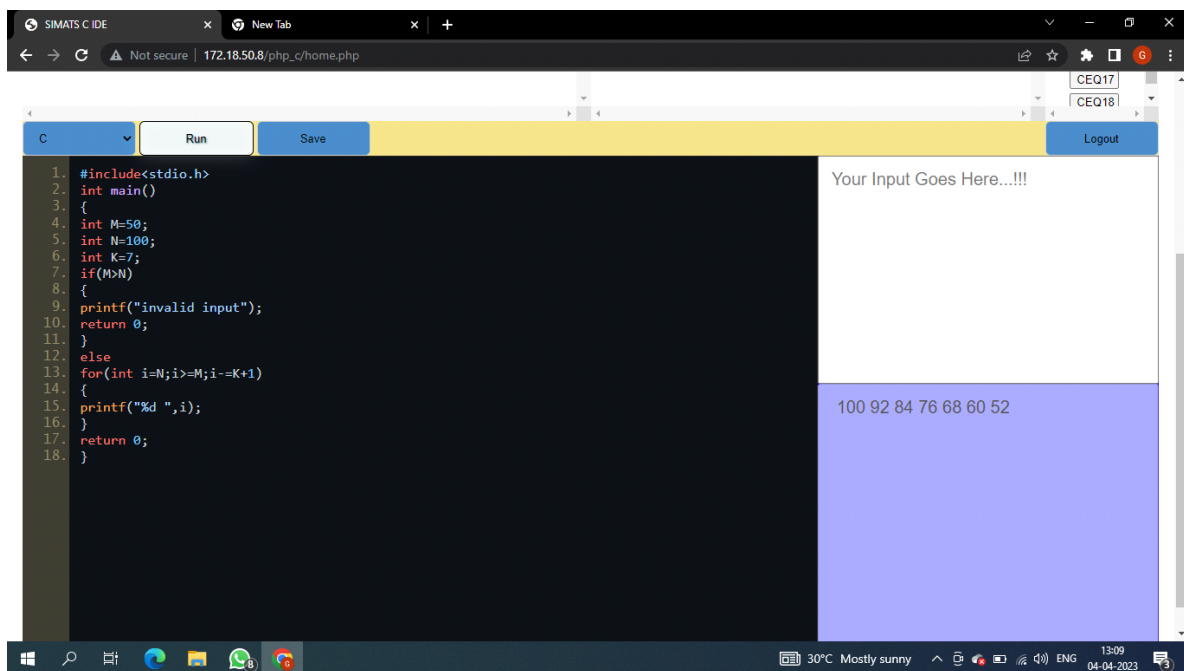
Write a program to reverse a number using loop?(Get the input from user)

Sample Input:

Number: 14567

Sample Output:

Reverse Number: 76541



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 M=50;
5.     int N=100;
6.     int K=7;
7.     if(M>N)
8.     {
9.         printf("invalid input");
10.        return 0;
11.    }
12.    else
13.    for(int i=N;i>=M;i-=K+1)
14.    {
15.        printf("%d ",i);
16.    }
17.    return 0;
18. }
```

On the right side of the IDE, there is an input field labeled "Your Input Goes Here....!!!" and a blue box displaying the output: "100 92 84 76 68 60 52". The browser's address bar shows "172.18.50.8/php\_c/home.php". The Windows taskbar at the bottom indicates the system time is 13:09 on 04-04-2023, with a weather forecast of 30°C Mostly sunny.

## Questions

CEQ28.

Write a program to print the Fibonacci series.

Sample Input:

Enter the n value: 6

Sample Output:

0      1      1      2      3      5



The screenshot shows a C programming IDE with a dark theme. The code editor on the left contains a program to calculate the Fibonacci series. The program prompts the user for the number of terms, reads the input, and prints the series. The output window on the right shows the input '6' and the resulting Fibonacci series: '0, 1 1 2 3 5'.

```
1. #include<stdio.h>
2. int main()
3. {
4.     int count,n,t1=0,t2=1,temp=0;
5.     printf("No. of terms:");
6.     scanf("%d",&n);
7.     printf("Fibonacci series:%d, %d",t1,t2);
8.     count=2;
9.     while(count<n)
10.    {
11.        temp=t1+t2;
12.        t1=t2;
13.        t2=temp;
14.        ++count;
15.        printf("%d ",temp);
16.    }
17.    return 0;
18. }
```

6

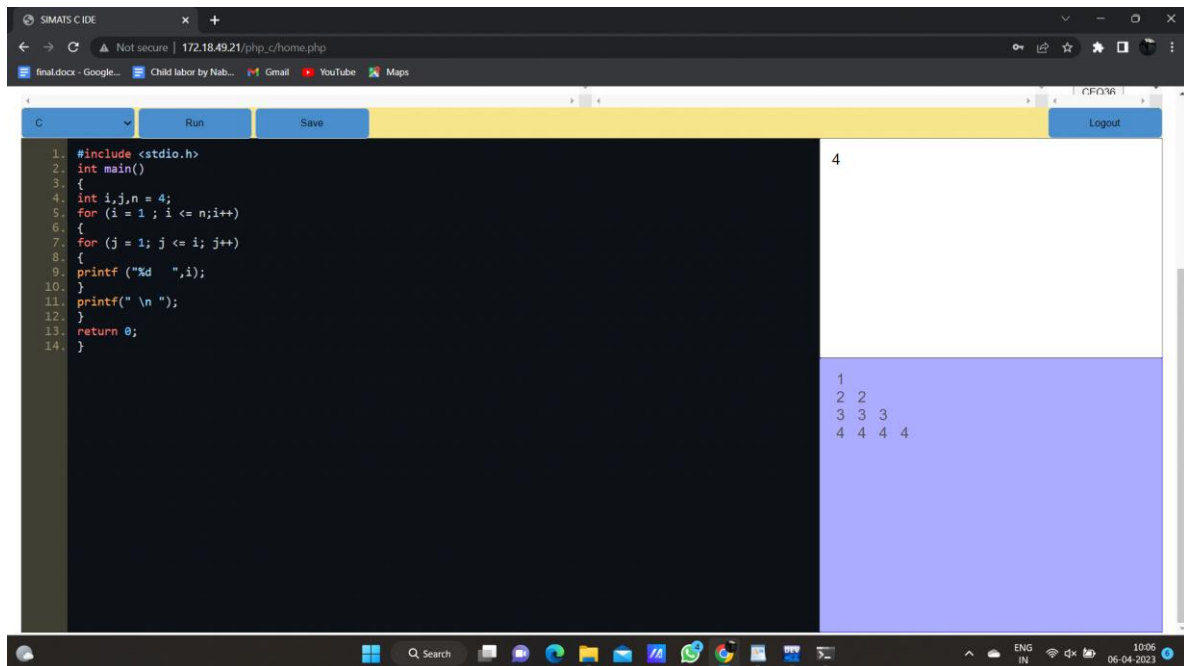
No. of terms:Fibonacci series:0, 1 1 2 3 5

## Questions

CEQ29.

Write a program to print the below pattern.

```
1
2 2
3 3 3
4 4 4 4
```



The screenshot shows a web-based C IDE interface. The editor contains a C program that prints a pattern of numbers. The program uses nested loops to print the numbers 1 through 4 in a triangular shape. The output is displayed in a separate window on the right side of the IDE.

```
1. #include <stdio.h>
2. int main()
3. {
4.     int i,j,n = 4;
5.     for (i = 1 ; i <= n;i++)
6.     {
7.         for (j = 1; j <= i; j++)
8.         {
9.             printf("%d ",i);
10.        }
11.        printf("\n ");
12.    }
13.    return 0;
14. }
```

Output:

```
4
1
2 2
3 3 3
4 4 4 4
```

## Questions

CEQ30.

Write a program to find the square, cube of the given decimal number.

Sample Input:

Given Number: 0.6

Sample Output:

Square Number: 0.36

Cube Number:0.216

The screenshot shows a C programming IDE with a dark theme. The code editor on the left contains the following C program:

```
1. #include<stdio.h>
2. int main()
3. {
4.     float n,sqr,cub;
5.     printf("enter a number");
6.     scanf("%f",&n);
7.     sqr=n*n;
8.     cub=n*n*n;
9.     printf("\n,the square of number %f is %f",n,sqr);
10.    printf("\n,the cube of number %f is %f",n,cub);
11.    return 0;
12. }
```

On the right side of the IDE, there is a console window. It displays the input '0.6' and the output of the program:

```
enter a number
,the square of number 0.600000 is 0.360000
,the cube of number 0.600000 is 0.216000
```

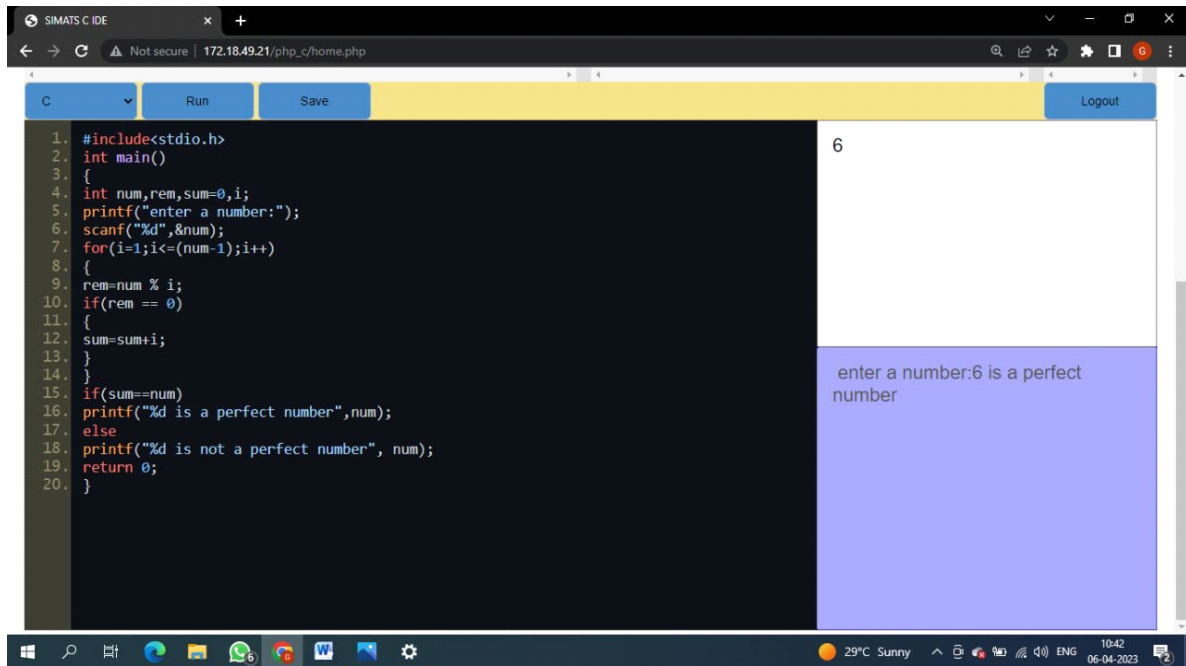
### Questions

CEQ32.

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



The screenshot shows a web browser window with the address bar displaying "172.18.49.21/php\_c/home.php". The browser has a dark theme. Below the address bar is a toolbar with buttons for "C", "Run", "Save", and "Logout". The main content area is split into two panes. The left pane contains a C program with the following code:

```
1. #include<stdio.h>
2. int main()
3. {
4.     int num,rem,sum=0,i;
5.     printf("enter a number:");
6.     scanf("%d",&num);
7.     for(i=1;i<=(num-1);i++)
8.     {
9.         rem=num % i;
10.        if(rem == 0)
11.        {
12.            sum=sum+i;
13.        }
14.    }
15.    if(sum==num)
16.        printf("%d is a perfect number",num);
17.    else
18.        printf("%d is not a perfect number", num);
19.    return 0;
20. }
```

The right pane shows the output of the program. It contains the text "6" in the top half and "enter a number:6 is a perfect number" in the bottom half. The bottom half of the right pane has a light blue background. At the bottom of the browser window, there is a taskbar with various icons, including the Windows logo, a search icon, and several application icons. The system tray shows the date and time as "18:42 06-04-2023" and the weather as "29°C Sunny".

## Questions

CEQ33.

Find the factorial of n?

Sample Input:

N = 6

Sample Output:

6 Factorial = 720

The screenshot shows a C programming IDE with a dark-themed editor and a light-themed output console. The editor contains the following C code:

```
1. #include<stdio.h>
2. int main(){
3.     int x,fact=1,n;
4.     printf("enter a number to find the factorial:");
5.     scanf("%d",&n);
6.     for(x=1;x<=n;x++)
7.         fact=fact*x;
8.     printf("factorail of %d is: %d",n,fact);
9.     return 0;
10. }
```

The output console on the right shows the input '6' and the resulting output 'enter a number to find the factorial:factorail of 6 is: 720'.

**Questions**  
CEQ34.

Write a program to print the below pattern.

```
1
4   9
16  25  36
49  64  81  100
```

The screenshot shows a C programming IDE with a dark theme. The code editor on the left contains a C program that prints a square pattern of numbers. The program starts by including `stdio.h` and defining a `main` function. It declares variables `rows`, `i`, `j`, and `number`. It prompts the user to enter the number of rows, which is stored in `rows`. Then, it uses nested loops to print the pattern. The outer loop iterates over the rows, and the inner loop iterates over the columns. The numbers are calculated as `number * number` and printed with a space separator. The program ends with a `return 0;` statement.

```
1. #include<stdio.h>
2. int main(){
3.     int rows,i,j,number=1;
4.     printf("Enter the number of rows: \n");
5.     scanf("%d",&rows);
6.     for(i=1;i<=rows;i++){
7.         for(j=1;j<=i;j++){
8.             printf("%d",number*number);
9.             ++number;
10.        }
11.        printf("\n");
12.    }
13.    return 0;
14. }
```

On the right side of the IDE, there is a text area labeled "Your Input Goes Here...!!!" and a status bar at the bottom that says "Loading ....."

CEQ35.

Write a program to find the number of composite numbers in an array of elements

Sample Input::

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

Sample Output:

Number of Composite Numbers = 5



The screenshot shows a C program in an IDE. The code defines an array of 7 elements and counts the number of composite numbers. The output shows the input elements and the total count of composite numbers, which is 3.

```
1. #include<stdio.h>
2. void main()
3. {
4.     int i,n=7,a[100],count=0;
5.     printf("Enter elements:");
6.     for(i=0;i<n;i++)
7.     {
8.         scanf("%d",&a[i]);
9.     }
10.    for(i=0;i<n;i++)
11.    {
12.        if(a[i]==2)
13.        {
14.            continue;
15.        }
16.        else if(a[i]%2==0)
17.        {
18.            count++;
19.        }
20.    }
21.    if(count>2)
22.    {
23.        printf("\nTotal num of composite nums:%d",count);
24.    }
25. }
```

16  
18  
27  
16  
23  
21  
19

Enter elements:  
Total num of composite nums:3



### Questions

CEQ36.

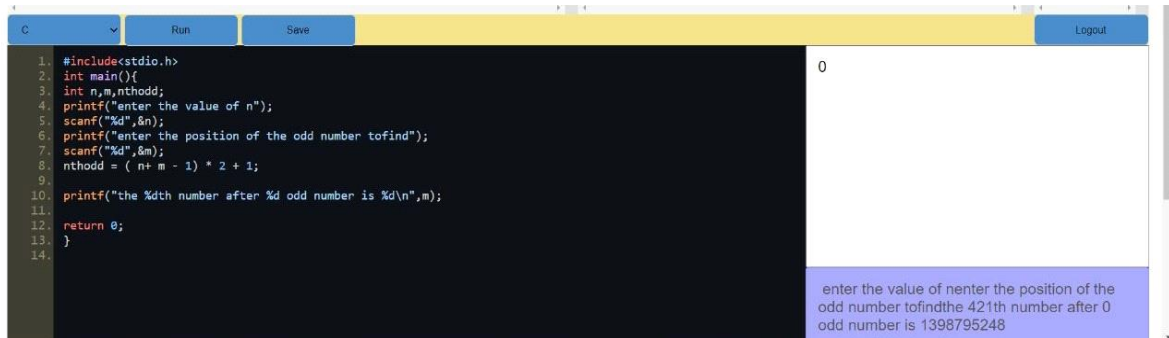
Find the nth odd number after n odd number.

Sample Input:

N : 4

Sample Output:

4th Odd number after 4 odd numbers = 15



The screenshot shows a C programming IDE with a dark theme. The code is as follows:

```
1. #include<stdio.h>
2. int main(){
3.     int n,m,nthodd;
4.     printf("enter the value of n");
5.     scanf("%d",&n);
6.     printf("enter the position of the odd number tofind");
7.     scanf("%d",&m);
8.     nthodd = ( n+ m - 1) * 2 + 1;
9.
10.    printf("the %dth number after %d odd number is %d\n",m);
11.
12.    return 0;
13. }
14.
```

The IDE has a top bar with buttons for 'C', 'Run', 'Save', and 'Logout'. The output window on the right shows the number '0'. A status bar at the bottom right contains the text: 'enter the value of n enter the position of the odd number tofind the 421th number after 0 odd number is 1398795248'.

### Questions

CEQ37.

Write a program that finds whether a given character is present in a string or not.  
In case it is present it prints the index at which it is present.  
Do not use built-in find functions to search the character.

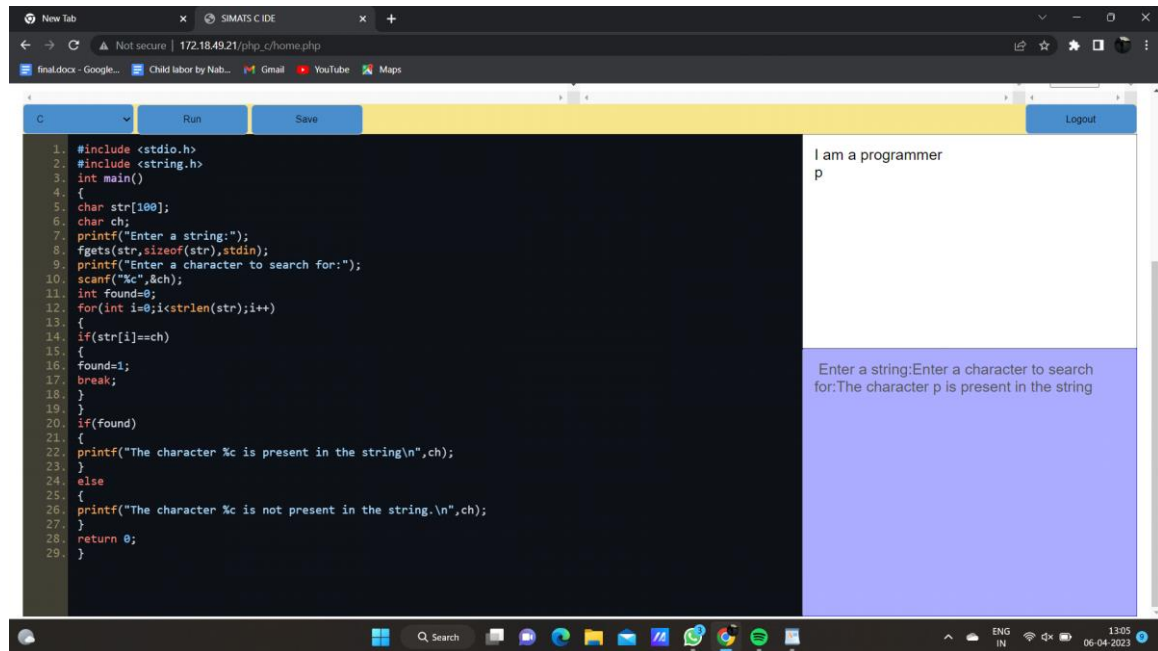
Sample Input:

Enter the string: I am a programmer  
Enter the character to be searched: p

Sample Output:

P is found in string at index: 8

Note: Check for non-available Character in the given statement as Hidden Test case.



The screenshot shows a web browser window with the address bar displaying "172.18.49.21/php\_c/home.php". The browser tabs include "New Tab", "SIMATS C IDE", and "final.docx - Google...". The main content area is divided into two sections: a code editor on the left and an output window on the right. The code editor contains the following C program:

```
1. #include <stdio.h>
2. #include <string.h>
3. int main()
4. {
5.     char str[100];
6.     char ch;
7.     printf("Enter a string:");
8.     fgets(str, sizeof(str), stdin);
9.     printf("Enter a character to search for:");
10.    scanf("%c", &ch);
11.    int found=0;
12.    for(int i=0; i<strlen(str); i++)
13.    {
14.        if(str[i]==ch)
15.        {
16.            found=1;
17.            break;
18.        }
19.    }
20.    if(found)
21.    {
22.        printf("The character %c is present in the string\n", ch);
23.    }
24.    else
25.    {
26.        printf("The character %c is not present in the string.\n", ch);
27.    }
28.    return 0;
29. }
```

The output window on the right displays the program's execution results. It shows the input string "I am a programmer" and the character "p". Below this, it displays the prompt "Enter a string: Enter a character to search for:" followed by the output "The character p is present in the string". The output window has a light blue background.

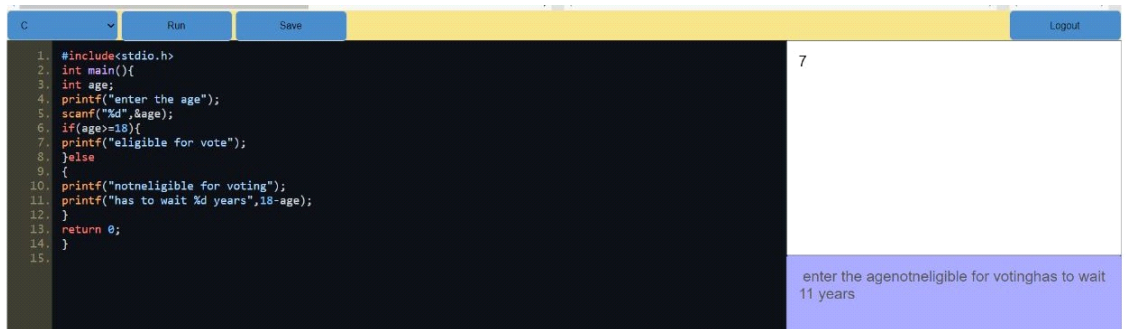
#### Questions

CEQ4.

Write a program to find whether the person is eligible for vote or not. And if that particular

Sample Input:  
Enter your age:7

Sample output:  
You are allowed to vote after 11 years



The screenshot shows a C programming IDE with a dark-themed editor and a light-themed output console. The editor contains a C program that checks if a person is eligible to vote based on their age. The output console shows the input '7' and the resulting output 'enter the age not eligible for voting has to wait 11 years'.

```
1. #include<stdio.h>
2. int main(){
3.     int age;
4.     printf("enter the age");
5.     scanf("%d",&age);
6.     if(age<=18){
7.         printf("eligible for vote");
8.     }else
9.     {
10.        printf("not eligible for voting");
11.        printf("has to wait %d years",18-age);
12.    }
13.    return 0;
14. }
15.
```

7

enter the age not eligible for voting has to wait 11 years

### 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

The screenshot shows a C programming IDE with a dark-themed editor and a light-themed output console. The editor contains the following C code:

```
1. #include<stdio.h>
2. int main()
3. {
4.     int sum=0;
5.     int num=143;
6.     while(num!=0)
7.     {
8.         sum+=num%10;
9.         num=num/10;
10.    }
11.    printf("\n Sum:%d",sum);
12.    return 0;
13. }
```

The output console on the right has a header "Your Input Goes Here...!!!" and a blue-shaded area displaying the result "Sum:8". The IDE interface includes buttons for "Run", "Save", and "Logout" at the top.

### Questions

CEQ39.

Program to find whether the given number is Armstrong number or not

Sample Input:

Enter number : 153

Sample Output:

Given number is Armstrong number

C

Run

Save

Logout

```
1. #include<stdio.h>
2. void main()
3. {
4.     int num=153,r,sum=0,temp;
5.     printf("enter a number:");
6.     scanf("%d",&num);
7.     for(temp=num;num!=0;num=num/10)
8.     {
9.         r=num%10;
10.        sum=sum+(r*r*r);
11.    }
12.    if(sum==temp)
13.    {
14.        printf("armstrong number:");
15.    }
16.    else
17.    {
18.        printf("not armstrong number:");
19.    }
20. }
21.
```

Your Input Goes Here...!!!

enter a number;armstrong number:

### Questions

CEQ44.

Write a program to find the square root of a perfect square number(print both the posit

Sample Input:

Enter the number : 6561

Sample Output:

Square Root: 81, -81

The screenshot shows a C programming IDE with a dark theme. The editor displays a C program that uses the `sqrt` function from the `math.h` library to calculate the square root of 6561. The program is as follows:

```
1. #include <math.h>
2. #include <stdio.h>
3. double findsqrt(double N)
4. {
5.     return sqrt(N);
6. }
7. int main()
8. {
9.     int N=6561;
10.    printf("%f",findsqrt(N));
11.    return 0;
12. }
```

On the right side of the IDE, there is an input/output window. The top section, labeled "Your Input Goes Here...!!!", is currently empty. The bottom section, which has a light blue background, displays the output of the program: `81.000000`.

CEQ41.

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

The screenshot shows a C program in a code editor with a dark theme. The code is as follows:

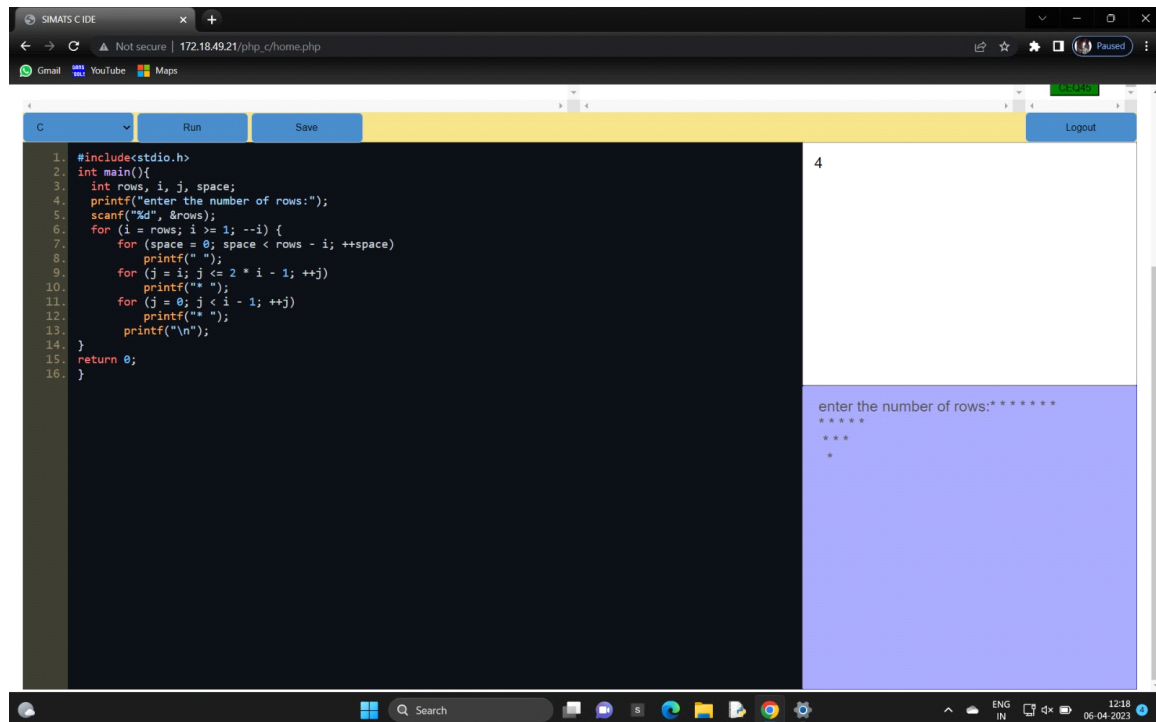
```
1 #include<stdio.h>
2 #include<string.h>
3 int main(){
4     char str[100];
5     int i,j, len = 0;
6     printf("enter the string");
7     scanf("%s",str);
8     len = strlen(str);
9     for(i = 0; i < len ; i++){
10        if(str[i] == 'a' || str[i] == 'e' || str[i] == 'i' || str[i] == 'o' || str[i] == 'u' ||
11           str[i] == 'A' || str[i] == 'E' || str[i] == 'I' || str[i] == 'O' || str[i] == 'U'){
12             for (j = i; j < len; j++){
13                 str[j] = str[j + 1];
14             }
15             i--;
16             len--;
17         }
18         str[len + 1] = '\0';
19     }
20     printf("after deleting the vowels will be %s",str);
21     return 0;
```

The output window on the right shows the input 'hi' and the output 'enter the stringafter deleting the vowels will be h'.

## Questions

CEQ45.

Write a program to print inverted pyramid pattern.



The screenshot shows a web browser window with a C IDE. The code is as follows:

```
1. #include<stdio.h>
2. int main(){
3.     int rows, i, j, space;
4.     printf("enter the number of rows:");
5.     scanf("%d", &rows);
6.     for (i = rows; i >= 1; --i) {
7.         for (space = 0; space < rows - i; ++space)
8.             printf(" ");
9.         for (j = i; j <= 2 * i - 1; ++j)
10.            printf("* ");
11.         for (j = 0; j < i - 1; ++j)
12.            printf(" ");
13.         printf("\n");
14.     }
15.     return 0;
16. }
```

The output of the program is shown on the right side of the IDE. It displays the number 4, followed by the prompt "enter the number of rows:\*". Below this, the inverted pyramid pattern is printed:

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

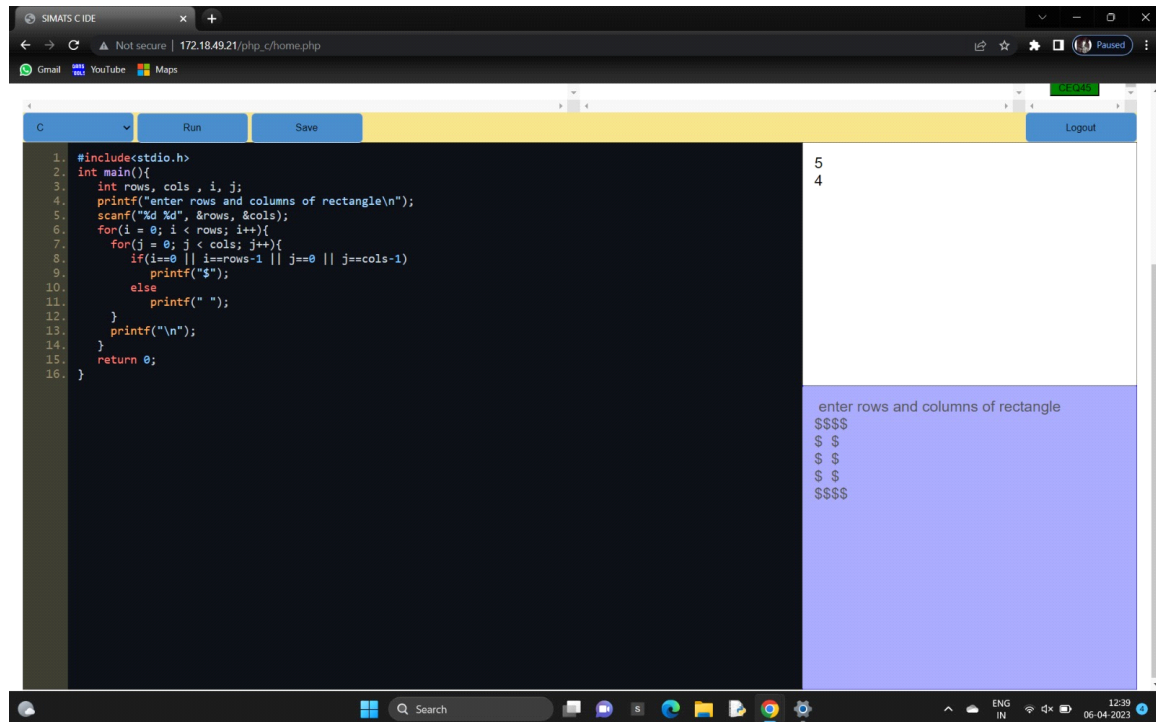
The IDE interface includes a "Run" button, a "Save" button, and a "Logout" button. The browser address bar shows "172.18.49.21/php\_c/home.php". The Windows taskbar at the bottom shows the time as 12:18 on 05-04-2023.



## Questions

CEQ42.

Write a program to print hollow Rectangle Dollar pattern?



The screenshot shows a C program in the SIMATS C IDE. The program prompts the user to enter the number of rows and columns of a rectangle. The user has entered 5 rows and 4 columns. The program then prints a hollow rectangle pattern using dollar signs (\$). The pattern consists of 5 rows and 4 columns. The first and last rows are filled with four dollar signs each. The middle three rows have a dollar sign at the first and last positions, with three spaces in between. The output is displayed in a light blue box on the right side of the IDE.

```
1. #include<stdio.h>
2. int main(){
3.     int rows, cols , i, j;
4.     printf("enter rows and columns of rectangle\n");
5.     scanf("%d %d", &rows, &cols);
6.     for(i = 0; i < rows; i++){
7.         for(j = 0; j < cols; j++){
8.             if(i==0 || i==rows-1 || j==0 || j==cols-1)
9.                 printf('$');
10.            else
11.                printf(" ");
12.        }
13.        printf("\n");
14.    }
15.    return 0;
16. }
```

5  
4

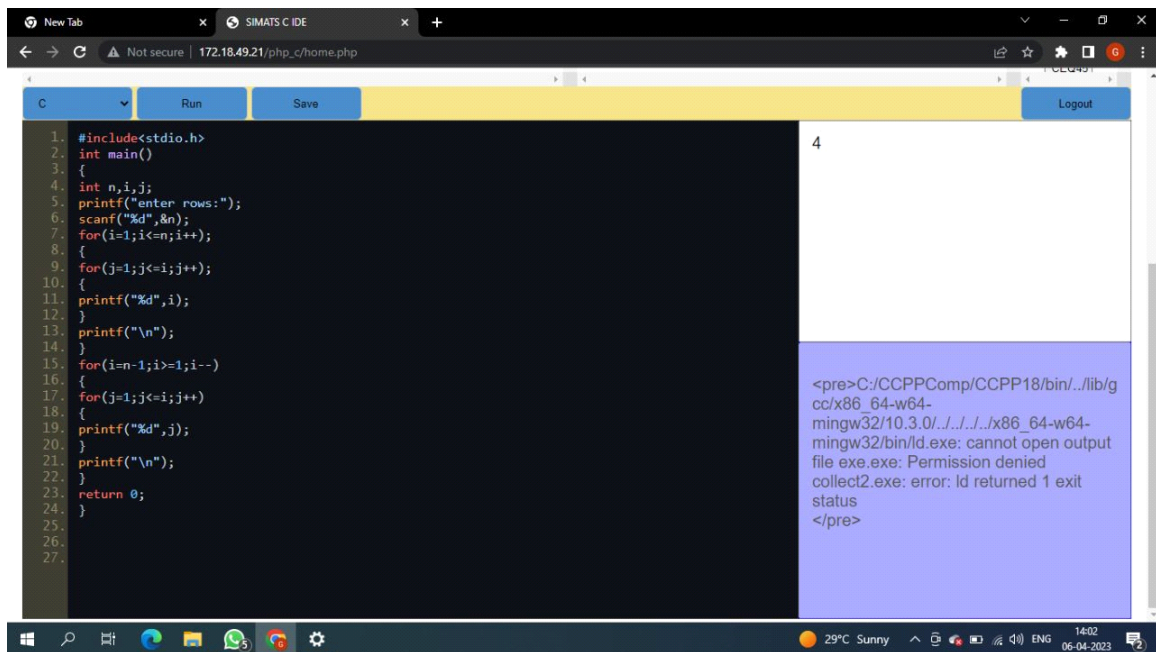
enter rows and columns of rectangle  
\$\$\$\$  
\$ \$  
\$ \$  
\$ \$  
\$ \$  
\$ \$\$\$

## Questions

CEQ38.

Write a program to print the below pattern.

```
1
2 2
3 3 3
4 4 4 4
3 3 3
2 2
1
```



```
1. #include<stdio.h>
2. int main()
3. {
4.     int n,i,j;
5.     printf("enter rows:");
6.     scanf("%d",&n);
7.     for(i=1;i<=n;i++){
8.         {
9.             for(j=1;j<=i;j++){
10.                {
11.                    printf("%d",i);
12.                }
13.                printf("\n");
14.            }
15.            for(i=n-1;i>=1;i--){
16.                {
17.                    for(j=1;j<=i;j++){
18.                        {
19.                            printf("%d",j);
20.                        }
21.                        printf("\n");
22.                    }
23.                }
24.            }
25.        }
26.    }
27.    }
```

4

```
<pre>C:/CCPPComp/CCPP18/bin/./lib/g
cc/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
</pre>
```

#### Questions

CEQ40.

Write a program to arrange the letters of the word alphabetically in reverse order.

Sample Input:

Enter the word : MOSQUE

Sample Output:

Alphabetical Order: U S Q O M E

#### Test Cases

1. HYPOTHECATION
2. MATRICULATION
3. MANIPULATION
4. SATISFACTION
5. DEDICATION

CEQ37

CEQ38

CEQ39

CEQ4

CEQ41

CEQ42

CEQ43

CEQ44

CEQ45

C

Run

Save

Logout

```
1. #include <stdio.h>
2. #include <string.h>
3.
4. int main() {
5.     char word[100];
6.     printf("Enter a word: ");
7.     scanf("%s", word);
8.
9.     int n = strlen(word);
10.
11.     for(int i = 0; i < n-1; i++) {
12.         for(int j = 0; j < n-i-1; j++) {
13.             if (word[j] < word[j+1]) {
14.                 char temp = word[j];
15.                 word[j] = word[j+1];
16.                 word[j+1] = temp;
17.             }
18.         }
19.     }
20.
21.     printf("Letters arranged alphabetically in reverse order: ");
22.     for (int i = n-1; i >= 0; i--) {
23.         printf("%c", word[i]);
24.     }
25.     printf("\n");
26.     return 0;
27. }
```

DEDICATION

Enter a word: Letters arranged alphabetically  
in reverse order: ACDDEIINOT