

CSA02- C Programming

M.POOJITHA

192224094

Questions

CEQ3.

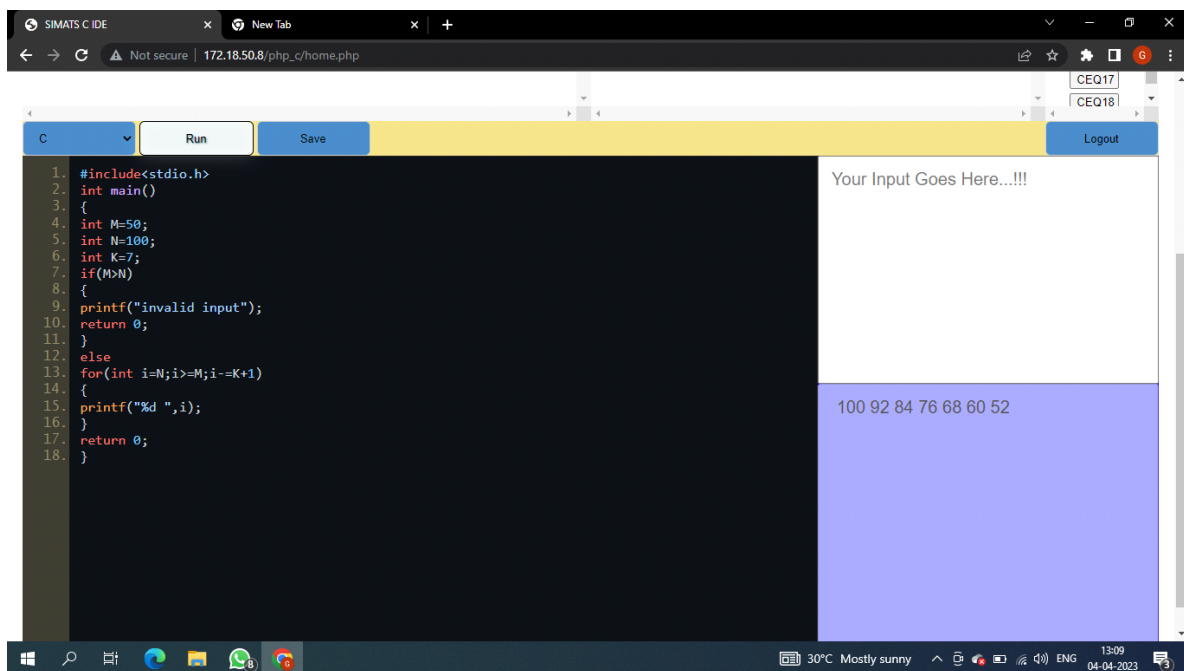
Write a program to reverse a number using loop?(Get the input from user)

Sample Input:

Number: 14567

Sample Output:

Reverse Number: 76541



```
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.    {
14.        for(int i=N;i>=M;i-=K+1)
15.        {
16.            printf("%d ",i);
17.        }
18.        return 0;
19.    }
```

Your Input Goes Here....!!!

100 92 84 76 68 60 52

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

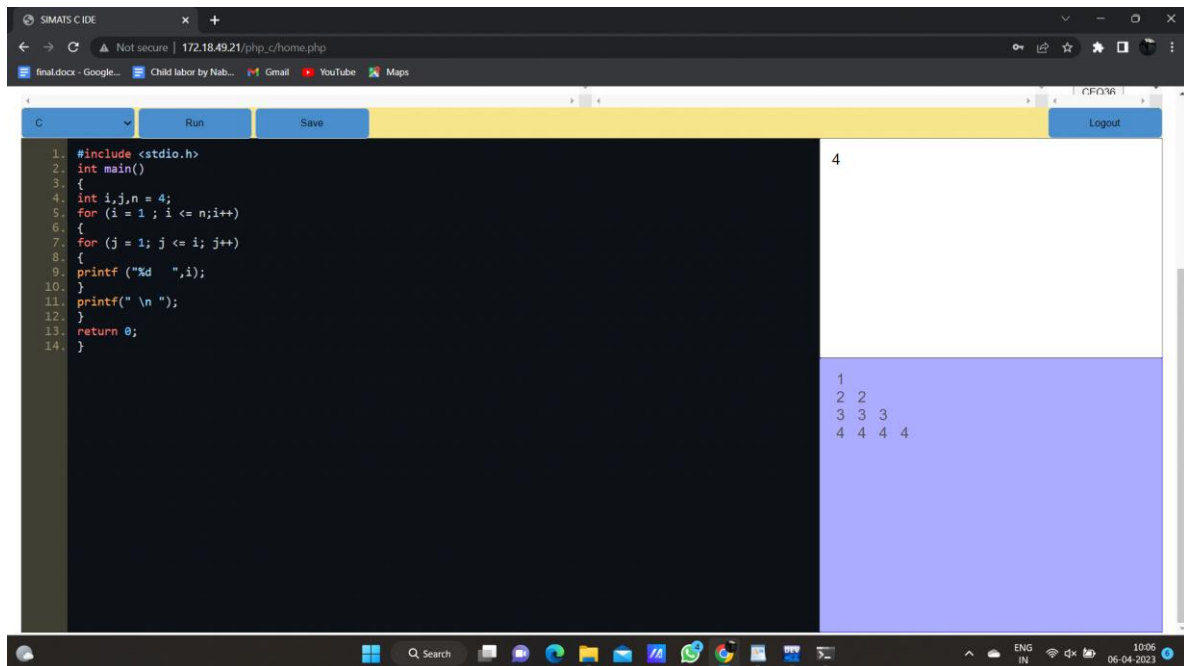
No. of terms:Fibonacci series:0, 1 1 2 3 5

Questions

CEQ29.

Write a program to print the below pattern.

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



The screenshot shows a C IDE window titled "SIMATS C IDE". The browser address bar shows "172.18.49.21/php_c/home.php". The IDE has a menu bar with "C", "Run", "Save", and "Logout". The code editor contains the following C program:

```
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. }
```

The output window on the right shows the pattern:

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

The Windows taskbar at the bottom shows the date and time as 06-04-2023 10:06.

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
0.6
,the square of number 0.600000 is 0.360000
,the cube of number 0.600000 is 0.216000
```

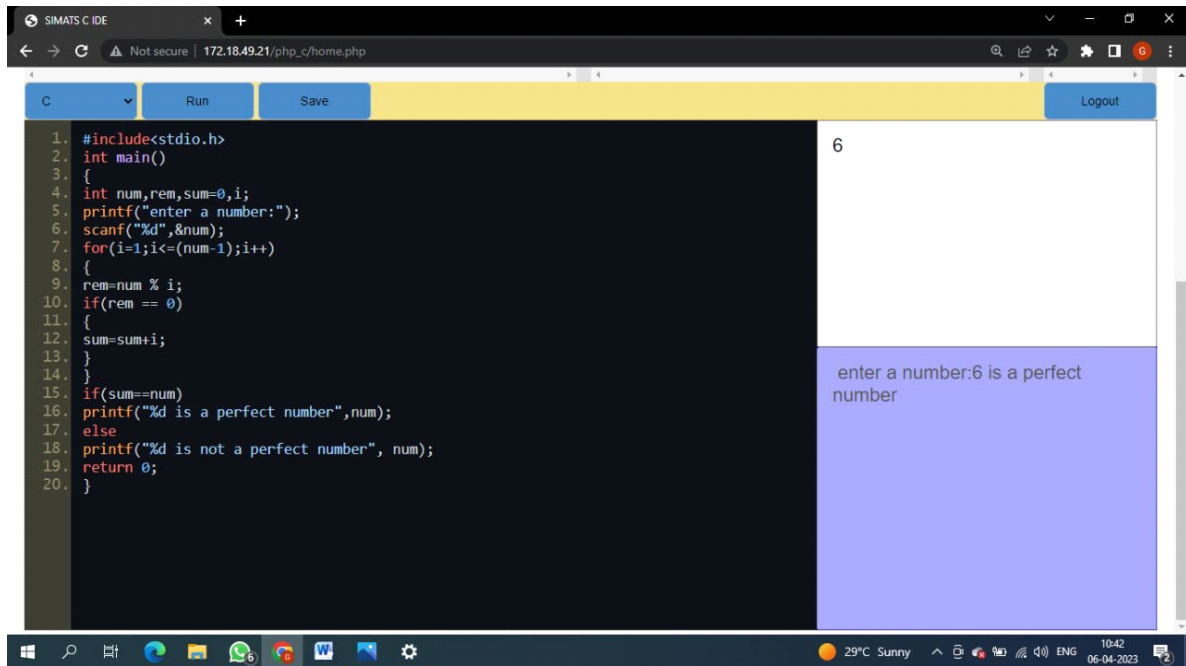
Questions

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 tabs for "SIMATS C IDE" and "Not secure". The main content area shows a C program in the SIMATS C IDE. The program is as follows:

```
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 output of the program is displayed in a light blue box on the right side of the IDE, showing "6" and "enter a number:6 is a perfect number". The browser's status bar at the bottom shows the system clock as 18:42 on 06-04-2023, and the weather as 29°C Sunny.

Questions

CEQ33.

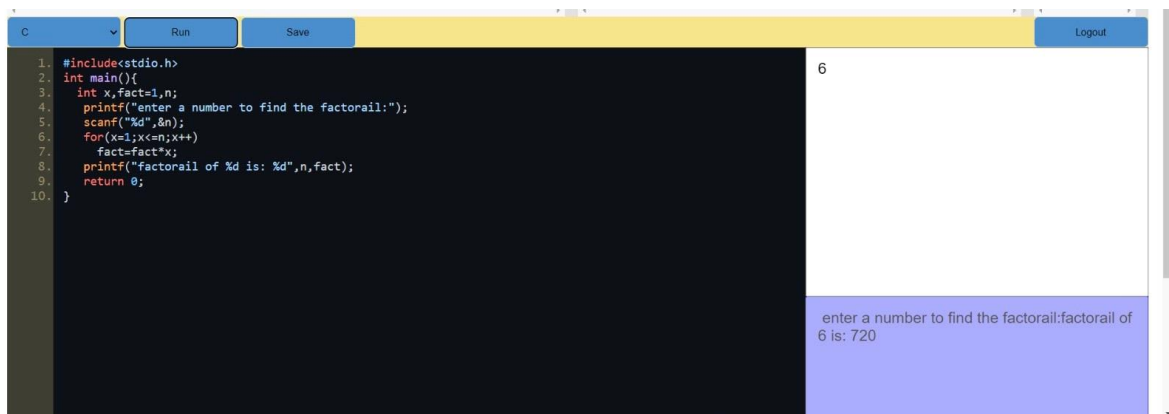
Find the factorial of n?

Sample Input:

N = 6

Sample Output:

6 Factorial = 720



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

```
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 IDE has a top bar with buttons for 'Run', 'Save', and 'Logout'. The output window on the right shows the input '6' and the 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 rows from 1 to `rows`. The inner loop iterates over columns from 1 to `rows`. In each iteration, it prints the value of `number` followed by a space. After each row, it prints a newline character. The `number` variable is incremented after each print statement. The output of the program is a square pattern of numbers, where each row contains `rows` numbers and the numbers increase sequentially from 1 to `rows * rows`.

```
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.

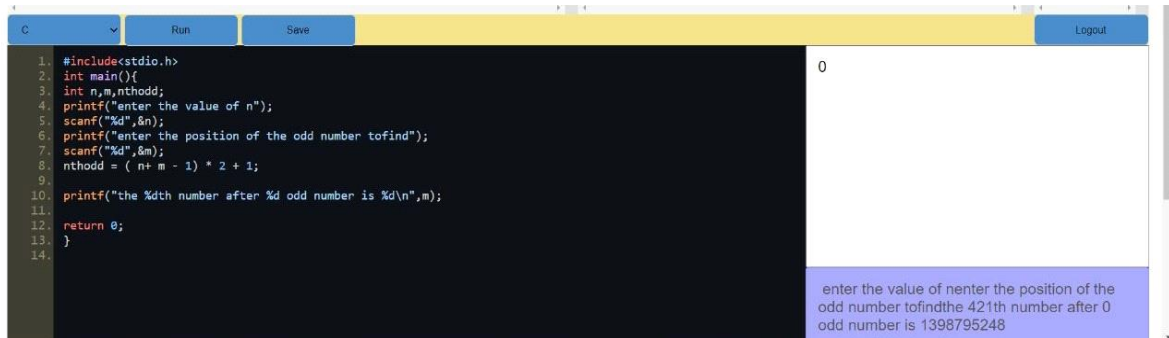
Find the nth odd number after n odd number.

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 blue 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.

```
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. }
```

I am a programmer
p

Enter a string:Enter a character to search for:The character p is present in the string

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 the following code:

```
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("noteligible for voting");
11.        printf("has to wait %d years",18-age);
12.    }
13.    return 0;
14. }
15.
```

The output console on the right shows the input '7' and the resulting output: 'enter the age' followed by 'noteligible for votinghas 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-themed editor and a light-colored output console. The editor contains the following code:

```
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. }
```

The output console on the right has a header "Your Input Goes Here...!!!" and displays the result "81.000000" on a blue background.

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. The program reads a string 'hi' and removes vowels, resulting in 'h'. The code is as follows:

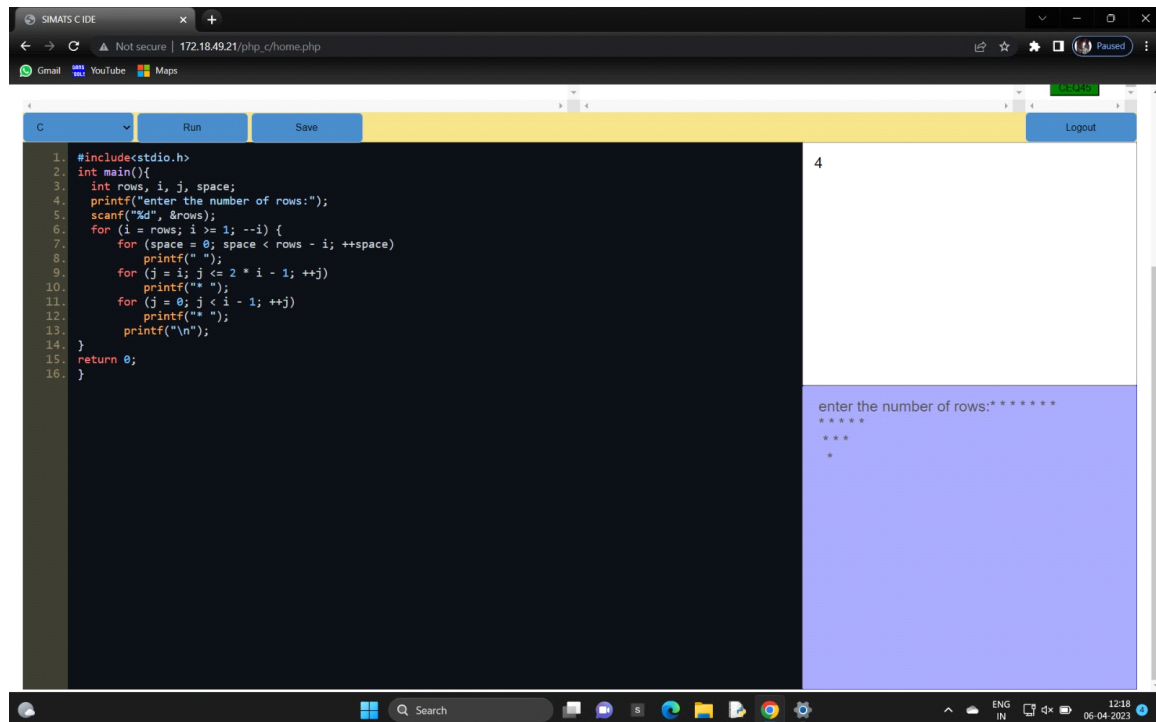
```
1. #include<stdio.h>
2. #include<string.h>
3. int main(){
4.     char str[100];
5.     int i,j, len = 0;
6.     printf("enter the string");
7.     scanf("%s",str);
8.     len = strlen(str);
9.     for(i = 0; i < len ; i++){
10.        if(str[i] == 'a' || str[i] == 'e' || str[i] == 'i' || str[i] == '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 of the program is '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 on the right shows the number 4 entered, followed by the prompt "enter the number of rows:*" and a blue box containing the pattern:

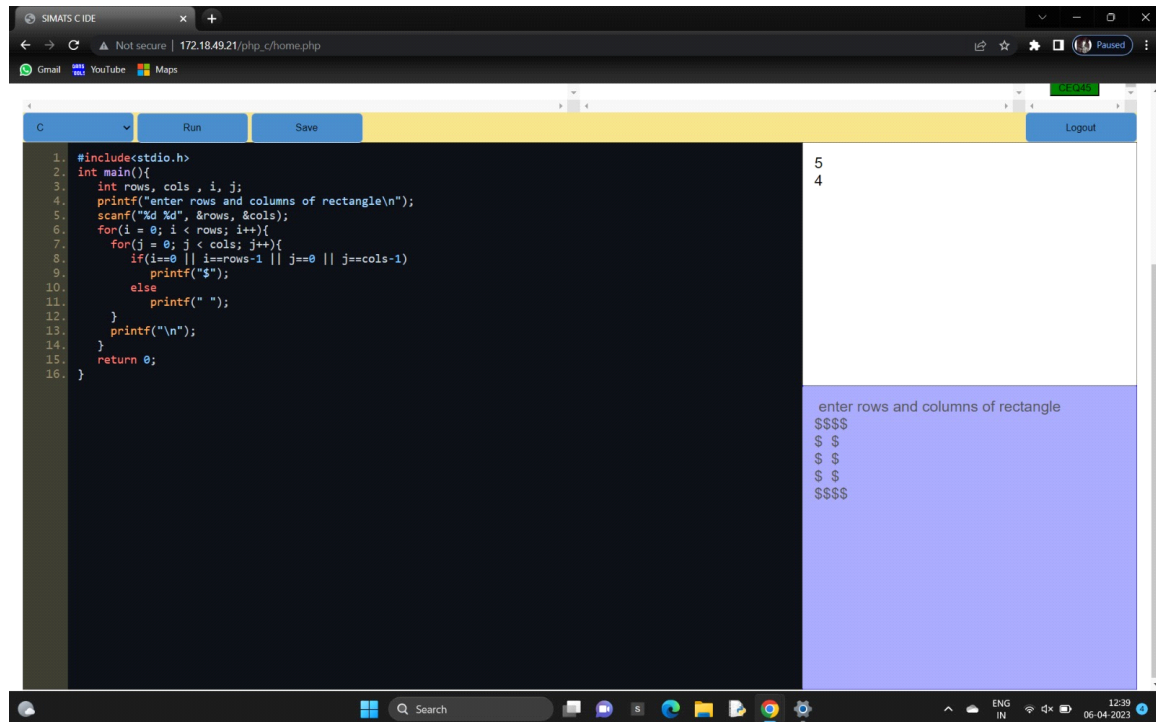
```
*****
****
***
**
*
```

The Windows taskbar at the bottom shows the date as 05-04-2023 and the time as 12:18.

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

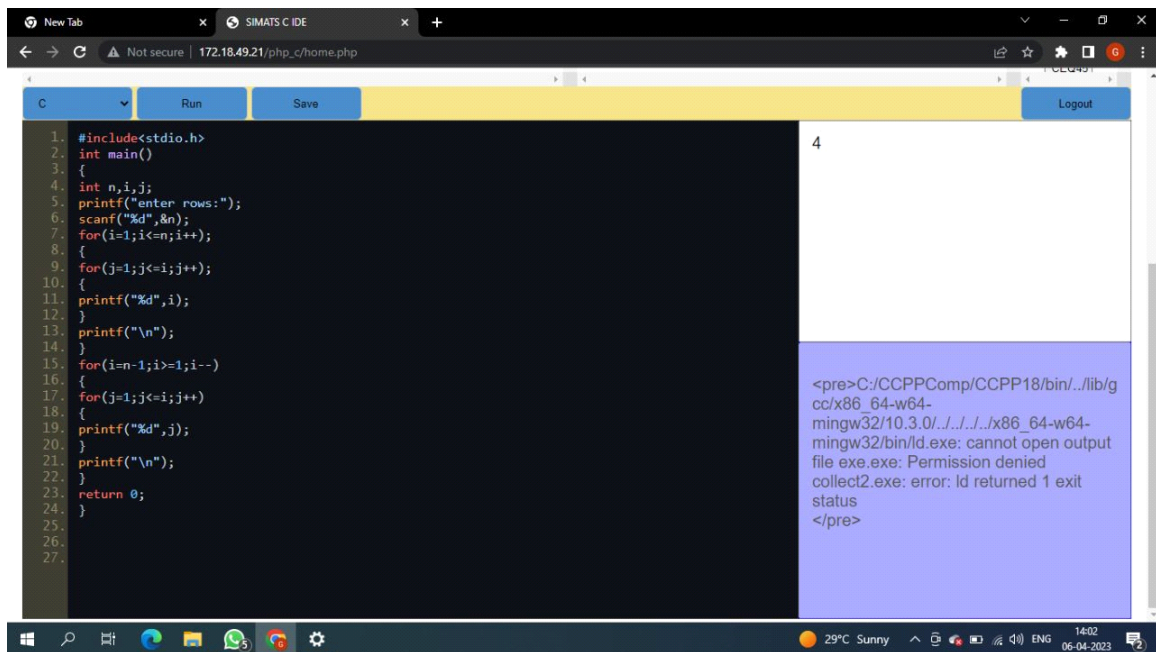
enter rows and columns of rectangle
\$\$\$\$
\$ \$
\$ \$
\$ \$
\$ \$
\$ \$\$\$

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