Sample Output :
Science 82

C | Run | Save | Logout

```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);


  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
science 82
DSA 73

Enter the number of records: Enter subject and marks:
Enter subject and marks:
Displaying Information:
science 82
DSA 73

Output:

C | Run | Save | Logout

```c
#include <stdio.h>
int main()
{
  int row = 0,column = 0;
  int numberOfRows = 0;
  printf("Enter the number of rows: ");
  scanf("%u",&numberOfRows);
  for(row=1; row<=numberOfRows; ++row)
  {

    for(column=row; column<numberOfRows; ++column)
    {
      printf(" ");
    }

    for(column=1; column<=row; ++column)
    {
      printf("*");
    }

    printf("\n");
  }
  return 0;
}
```

5

Enter the number of rows:

```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);
    }

    return 0;
}
```

```
6
15
```

```
Display the even numbers between 6 and 15 are:
 6
 8
 10
 12
 14

Display the odd numbers between 6 and 15 are:
 7
 9
 11
 13
```

C Run Save Logout

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

int gcd(int x, int y)
{
    int r = 0, a, b;
    a = (x > y) ? x : y; // a is greater number
    b = (x < y) ? x : y; // b is smaller number

    r = b;
    while (a % b != 0)
    {
        r = a % b;
        a = b;
        b = r;
    }
    return r;
}

int lcm(int x, int y)
{
    int a;
    a = (x > y) ? x : y; // a is greater number
    while (1)
    {
        if (a % x == 0 && a % y == 0)
            return a;
        ++a;
    }
}
```

16
20

Enter the two numbers.
The GCD of two numbers is: 4
The LCM of two numbers is: 80

C | Run | Save | Logout

```c
#include<stdio.h>
#include<conio.h>
int main()
{
    char str[50];
    int i=0, j, chk;
    printf("Enter a String: ");
    gets(str);
    while(str[i]!='\0')
    {
     chk=0;
     if(str[i]=='a'||str[i]=='e'||str[i]=='i'||str[i]=='o'||str[i]=='u'||str[i]=='A'||str[i]=='E'
    {
     j=i;
     while(str[j-1]!='\0')
     {
      str[j] = str[j+1];
      j++;
      }
      chk = 1;
      }
      if(chk==0)
     i++;
    }
    printf("\nString (without vowels): %s", str);
    return 0;
}
```

We can play the game

Enter a String
String (without vowels): W cn ply th gm

```c
#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;
}
```

Your Input Goes Here ...!!!

```
 Function : check Armstrong and perfect numbers :
---------------
 Input any number: The 371 is an Armstrong number.
 The 371 is not a Perfect number.
```

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

CEQ41 CEQ42 CEQ43 CEQ44 CEQ45 CEQ5 CEQ6 CEQ7 CEQ8 CEQ9

C | Run | Save | Logout

```c
#include<stdio.h>
int main()
{
int n,t,sum=0,remainder;
printf("enter an integer\n");
scanf("%d",&n);
t=n;
while(t!=0)
{
remainder=t%10;
sum=sum+remainder;
t=t/10;
}
printf("sum of digits of %d =%d\n",n,sum);
return 0;
}
```

143

enter an integer
sum of digits of 143 =8

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

C | Run | Save | Logout

```c
#include <stdio.h>
#include <math.h>
int main()
{
    int f1,f2,f3,n,i=2,s=1;
    f1=0;
    f2=1;
    printf("How many terms do you \nwant in Fibonacci series? : ");
    scanf("%d",&n);
    printf("\nFibonacci Series Upto %d Terms:\n\n",n);
    printf("%d, %d",f1,f2);
    while(i<n)
    {
        f3=f1+f2;
        printf(", %d",f3);
        f1=f2;
        f2=f3;
        s=s+f3;
        i++;
    }
    printf("\n\nSum of Fibonacci Series : %d",s);
    return 0;
}
```

```
8
0 1 3 8 21
```

How many terms do you
want in Fibonacci series?
Fibonacci Series Upto 8 Terms.

0 1 1 2 3 5 8 13

Sum of Fibonacci Series 33

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

CHQ4
CHQ5
CHQ6
CHQ7
CHQ8

C | Run | Save | Logout

```c
#include<stdio.h>
int main()
{
    int num,PrimeCount=0,i,flag,prime=1;
    printf("\n enter the number:");
    scanf("%d",&num);
    while(num!=PrimeCount)
    {
        flag=0;
        prime++;
        for(i=2;i<=(prime/2);i++)
        {
            if(prime%i==0)
                flag=1;
        }
        if(flag==0)
        {
            PrimeCount++;
        }
    }
    printf("%d prime number is: %d",num,prime);
    return 0;
}
```

3

enter the number:3 prime number is: 5

C | Run | Save | Logout

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

    int i, j, rows, k, m = 1;
    printf (" Enter a number to define the rows: \n");
    scanf ("%d", &rows);
    printf("\n");

    for ( i = rows; i >= 1; i--)
    {

        for ( j = 1; j <= m; j++)
        {
            printf ("  ");
        }

        for ( k = 1; k <= ( 2 * i - 1); k++)
        {
            printf ("* ");
        }
        m++;
        printf ("\n");
    }
    return 0;
}
```

5

Enter a number to define the rows:

```
. . . . . .
. . . . . .
. . . . .
. . . .
. . .
.
```

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

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 = %5.2f\n", principle);
 printf ("Rate %% per Annum    = %5.2f%\n", rate);
 printf ("Time    = %d years\n", time);
 printf ("Simple Interest  = %5.2f\n", sinterest);
}
```

```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;
}
```

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
```

C | Run | Save | Logout

```c
#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=i-1;j>=1;j--)
    printf("%d",j);
      printf("\n");
   }
}
```

5

```
Input number of rows :
1
121
12321
1234321
123454321
```

```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);//0.05--5%

  else
```

```
F
50000
```

```
Enter M for Male and F for Female
Enter Salary
Bonus=5000.00
Salary=55000.00
```

C ▾ Run Save Logout

```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;
        }

```

Programming does wonders in the world

Enter a string:
Longest word: Programming

Questions
CEQ44

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

Sample Input:
Enter the number : 6561

Sample Output:
Square Root: 81, -81

Test Cases

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

CEQ41 CEQ42 CEQ43 CEQ44 CEQ45 CEQ5 CEQ6 CEQ7 CEQ8 CEQ9

C | Run | Save | Logout

```c
#include<stdio.h>
#include<math.h>
int main()
{
int n,r;
scanf("%d",&n);
r=pow(n,0.5);
printf("sqrt of %d is %d,-%d",n,r,r);
return 0;
}
```

6561

sqrt of 6561 is 81,-81

Questions

CMQ5

Write a program to find the number of student users in the college, get the total u

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 | Logou

```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

```c
#include <stdio.h>

void main()
{
    int arr1[100];
    int i, mx, mn, n;


      printf("\n\nFind maximum and minimum element in an array :\n");
      printf("-------------------------------------------------\n");

      printf("Input the number of elements to be stored in the array :");
      scanf("%d",&n);

      printf("Input %d elements in the array :\n",n);
      for(i=0;i<n;i++)
          {
       printf("element - %d : ",i);
       scanf("%d",&arr1[i]);
      }


    mx = arr1[0];
    mn = arr1[0];

    for(i=1; i<n; i++)
    {
        if(arr1[i]>mx)
        {
            mx = arr1[i];
        }
```

C Run Save Logout

```c
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
struct Student {
    char* name;
    int age;
};
int main()
{
    int i = 0, n = 5;
    struct Student student[n];
    student[0].name = "AAA";
   student[0].age = 25;
   student[1].name = "sam";
    student[1].age = 10;
   student[2].name = "ram";
   student[2].age = 11;
   student[3].name = "tom";
    student[3].age = 12;
   student[4].name = "jerry";
    student[4].age = 13;
      printf("Student details:\n\n");
    for (i = 0; i < n; i++) {
        printf("\tName = %s\n", student[i].name);
        printf("\tAge = %d\n", student[i].age);
    }
    return 0;
}
```

Your Input Goes Here...!!!

Student details:

Name = AAA
Age = 25
Name = sam
Age = 10
Name = ram
Age = 11
Name = tom
Age = 12
Name = jerry
Age = 13

CEQ42

Write a program to print hollow Rectangle Dollar pattern?

C | Run | Save | Log

```c
#include<stdio.h>
int main()
{
int rows,columns,i,j;
printf("enter rows and columns\n");
scanf("%d %d ",&rows ,&columns);
for(i=0; i<rows; i++)
{
for(j=0; j<columns; j++)
{
if(i==0 || i==rows-1 || j==0 || j==columns-1)
printf("$");
else
printf("  ");
}
printf("\n");
}
return 0;
}
```

```
4 6
enter rows and columns
$$$$$$
$    $
$    $
$$$$$$
```