GLA UNIVERSITY

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PROJECT FILE OF C PROGRAMMING

SUBMITTED BY-
SACHIN

SUBMITTED TO-
GURPREET KAUR

UNIVERSITY ROLL NO. **2315001904**

Section- **AU-2**

1. Write a C program to input marks of five subjects of a student and calculate total, average and percentage of all subjects. How to calculate total, average and percentage in C programming. Logic to find total, average and percentage in C program.

Answer:

```
#include <stdio.h>

int main()

{

   float eng, phy, chem, math, comp;

   float total, average, percentage;

   printf("Enter marks of five subjects: \n");

   scanf("%f%f%f%f%f", &eng, &phy, &chem, &math, &comp);

   total = eng + phy + chem + math + comp;

   average = total / 5.0;

   percentage = (total / 500.0) * 100;

   printf("Total marks = %.2f\n", total);

   printf("Average marks = %.2f\n", average);

   printf("Percentage = %.2f", percentage);


   return 0;

}
```

Output :

Total = 435

Average = 87

Percentage = 87.00

2. Write a C program to input principle, time and rate (P, T, R) from user and find Simple Interest. How to calculate simple interest in C programming. Logic to find simple interest in C program.

Answer:

```
#include <stdio.h>

int main()

{

   float principle, time, rate, SI;

   printf("Enter principle (amount): ");

   scanf("%f", &principle);

   printf("Enter time: ");

   scanf("%f", &time);

   printf("Enter rate: ");

   scanf("%f", &rate);

   SI = (principle * time * rate) / 100;

   printf("Simple Interest = %f", SI);

   return 0;

}
```

Output : Simple Interest = 129.600006

3. Write a C program to input principle (amount), time and rate (P, T, R) and find Compound Interest. How to calculate compound interest in C programming. Logic to calculate compound interest in C program.

Answer :

```
#include <stdio.h>

#include <math.h>

int main()

{

   float principle, rate, time, CI;

   printf("Enter principle (amount): ");

   scanf("%f", &principle);

   printf("Enter time: ");

   scanf("%f", &time);

   printf("Enter rate: ");

   scanf("%f", &rate);

   CI = principle* (pow((1 + rate / 100), time));

   printf("Compound Interest = %f", CI);

   return 0;

}
```

Output : Compound Interest = 1333.099243

4. Write a C program to input number of days from user and convert it to years, weeks and days. How to convert days to years, weeks in C programming. Logic to convert days to years, weeks and days in C program.

Answer :

```
#include <stdio.h>

int main()

{

   int days, years, weeks;

   printf("Enter days: ");

   scanf("%d", &days);

   years = (days / 365);

   weeks = (days % 365) / 7;

   days  = days - ((years * 365) + (weeks * 7));

   printf("YEARS: %d\n", years);

   printf("WEEKS: %d\n", weeks);

   printf("DAYS: %d", days);

   return 0;

}
```

Output : 373 days = 1 year/s, 1 week/s and 1 day/s

5. Write a C Program to input two angles from user and find third angle of the triangle. How to find all angles of a triangle if two angles are given by user using C programming. C program to calculate the third angle of a triangle if two angles are given.

Answer :

```
#include <stdio.h>

int main()

{

   int a, b, c;

   printf("Enter two angles of triangle: ");

   scanf("%d%d", &a, &b);

   c = 180 - (a + b);

   printf("Third angle of the triangle = %d", c);

   return 0;

}
```

Output : Third angle = 40

6. Write a C program to input side of an equilateral triangle from user and find area of the given triangle. How to find area of an equilateral triangle in C programming. C program to calculate area of an equilateral triangle if its side is given.

Answer :

```
#include <stdio.h>

#include <math.h>

int main()

{

   float side, area;

   printf("Enter side of an equilateral triangle: ");

   scanf("%f", &side);

   area = (sqrt(3) / 4) * (side * side);

   printf("Area of equilateral triangle = %.2f sq. units", area);

   return 0;

}
```

Output : Area of equilateral triangle = 43.3 sq. units

7. Write a C program to input two numbers and find maximum between two numbers using conditional/ternary operator ?:. How to find maximum or minimum between two numbers using conditional operator in C program.

Answer :

```
#include <stdio.h>

int main()

{

   int num1, num2, max;

   printf("Enter two numbers: ");

   scanf("%d%d", &num1, &num2);

   max = (num1 > num2) ? num1 : num2;

   printf("Maximum between %d and %d is %d", num1, num2, max);

   return 0;

}
```

Output : Maximum: 20

8. Write a C program to input a character and check whether the character is alphabet or not using Conditional/Ternary operator ?:. How to check alphabets using conditional operator in C programming.

Answer :

```
#include <stdio.h>

int main()

{

   char ch;

   printf("Enter any character: ");

   scanf("%c", &ch);

   (ch>='a' && ch<='z') || (ch>='A' && ch<='Z')

      ? printf("It is ALPHABET")

      : printf("It is NOT ALPHABET");

   return 0;

}
```

Output : It is ALPHABET

9. Write a C program to input a number and check whether number is even or odd using Conditional/Ternary operator.

Answer :

```
#include <stdio.h>

int main()

{

   int num;

   printf("Enter any number to check even or odd: ");

   scanf("%d", &num);

   (num%2 == 0)

      ? printf("The number is EVEN")

      : printf("The number is ODD");

   return 0;

}
```

Output : 10 is even.

10. Write a C program to input three numbers from user and find maximum between three numbers using conditional/ternary operator.

Answer :

```
#include <stdio.h>

int main()

{

   int num1, num2, num3, max;

   printf("Enter three numbers: ");

   scanf("%d%d%d", &num1, &num2, &num3);

   max = (num1 > num2 && num1 > num3) ? num1 :

       (num2 > num3) ? num2 : num3;

   printf("\nMaximum between %d, %d and %d = %d", num1, num2, num3,
max);

   return 0;

}
```

Output : Maximum is 30

11. Write a C program to input cost price and selling price of a product and check profit or loss.

Answer.

```
#include <stdio.h>

int main()

{

   int cp,sp, amt;

   printf("Enter cost price: ");

   scanf("%d", &cp);

   printf("Enter selling price: ");

   scanf("%d", &sp);

   if(sp > cp)

   {

      amt = sp - cp;

      printf("Profit = %d", amt);

   }

   else if(cp > sp)

   {

      amt = cp - sp;
```

```
        printf("Loss = %d", amt);
    }
    else
    {
        printf("No Profit No Loss.");
    }
    return 0;
}
```

Output : Profit: 500

12. Write a C program to input sides of a triangle and check whether a triangle is equilateral.

Answer :

```
#include <stdio.h>
int main()
{
    int side1, side2, side3;
    printf("Enter three sides of triangle: ");
    scanf("%d%d%d", &side1, &side2, &side3);
```

```
    if(side1==side2 && side2==side3)
    {
        printf("Equilateral triangle.");
    }
    else if(side1==side2 || side1==side3 || side2==side3)
    {
        printf("Isosceles triangle.");
    }
    else
    {
        printf("Scalene triangle.");
    }
    return 0;
}
```

Output : Triangle is equilateral triangle

13. Write a C program to enter month number between(1-12) and print number of days in month.

Answer :

```
#include <stdio.h>

int main()

{

   int month;

   printf("Enter month number (1-12): ");

   scanf("%d", &month);

   if(month == 1)

   {

      printf("31 days");

   }

   else if(month == 2)

   {

      printf("28 or 29 days");

   }

   else if(month == 3)

   {
```

```
    printf("31 days");
}
else if(month == 4)
{
    printf("30 days");
}
else if(month == 5)
{
    printf("31 days");
}
else if(month == 6)
{
    printf("30 days");
}
else if(month == 7)
{
    printf("31 days");
}
else if(month == 8)
```

```
{
   printf("31 days");
}
else if(month == 9)
{
   printf("30 days");
}
else if(month == 10)
{
   printf("31 days");
}
else if(month == 11)
{
   printf("30 days");
}
else if(month == 12)
{
   printf("31 days");
}
```

```
    else
    {
        printf("Invalid input! Please enter month number between (1-12).");
    }
    return 0;
}
```

Output : It contains 31 days.

14. Write a c program create a simple calculator using switch case.

Answer:

```
#include <stdio.h>
int main(){
    char op;
    float num1, num2, result=0.0f;
    printf("WELCOME TO SIMPLE CALCULATOR\n");
    printf("---------------------------\n");
    printf("Enter [number 1] [+ - * /] [number 2]\n");
    scanf("%f %c %f", &num1, &op, &num2);
```

```
    switch(op) {
        case '+':
            result = num1 + num2;
            break;
        case '-':
            result = num1 - num2;
            break;
        case '*':
            result = num1 * num2;
            break;
        case '/':
            result = num1 / num2;
            break;
        default:
            printf("Invalid operator");   }
    printf("%.2f %c %.2f = %.2f", num1, op, num2, result);
    return 0;
}                                   Output : 2.2
```

15.Write a C program to print all odd numbers from 1 to n.

Answer:

```
#include <stdio.h>
int main()
{
   int i, n;
   printf("Print odd numbers till: ");
   scanf("%d", &n);
   printf("All odd numbers from 1 to %d are: \n", n);
   for(i=1; i<=n; i++)
   {
      if(i%2!=0)
      {
         printf("%d\n", i);
      }
   }
   return 0;
}
```

Output : Odd numbers between 1 to 10: 1, 3, 5, 7, 9

16. Write a C program to input number from user and check number is palindrome or not.

Answer :

```
#include <stdio.h>

int main()

{

   int n, num, rev = 0;

   printf("Enter any number to check palindrome: ");

   scanf("%d", &n);

   num = n;

   while(n != 0)

   {

      rev = (rev * 10) + (n % 10);

      n  /= 10;

   }

   if(rev == num)

   {

      printf("%d is palindrome.", num);

   }
```

```
    else
    {
        printf("%d is not palindrome.", num);
    }
    return 0;
}
```

Output : 121 is palindrome

17. Write a C program to input a number from user and find Prime factors of the given number.

Answer:

```
#include <stdio.h>
int main()
{
    int i, j, num, isPrime;
    printf("Enter any number to print Prime factors: ");
    scanf("%d", &num);
    printf("All Prime Factors of %d are: \n", num);
    for(i=2; i<=num; i++)
```

```
{
   if(num%i==0)
   {
      isPrime = 1;
      for(j=2; j<=i/2; j++)
      {
         if(i%j==0)
         {
            isPrime = 0;
            break;
         }
      }
      if(isPrime==1)
      {
         printf("%d, ", i);
      }
   }
}
return 0;
```

```
}
```
Output : Prime factors of 10: 2, 5

18.Write a C program to print square star(*) pattern series of N rows.

Answer :

```
#include <stdio.h>
int main()
{
   int i, j, N;
   printf("Enter number of rows: ");
   scanf("%d", &N);
   for(i=1; i<=N; i++)
   {
      for(j=1; j<=N; j++)
      {
         printf("*");
      }
      printf("\n");
   }
   return 0;
}
```

19.Write a C program to print equilateral triangle or Pyramid star pattern series of n rows.

Answer :

```
#include <stdio.h>

int main()

{

   int i, j, rows;

   printf("Enter number of rows : ");

   scanf("%d", &rows);

   for(i=1; i<=rows; i++)

   {

      for(j=i; j<rows; j++)

      {

         printf(" ");

      }

      for(j=1; j<=(2*i-1); j++)  {

         printf("*");   }

      printf("\n");  }

   return 0;
```

```
}
```

20.Write a C program to print diamond star pattern.

Answer :

```
#include <stdio.h>
int main()
{
   int i, j, rows;
   int stars, spaces;
   printf("Enter rows to print : ");
   scanf("%d", &rows);
   stars = 1;
   spaces = rows - 1;
   for(i=1; i<rows*2; i++)
   {
      for(j=1; j<=spaces; j++)
         printf(" ");

      for(j=1; j<stars*2; j++)
         printf("*");
```

```
        printf("\n");


        if(i<rows)
        {
           spaces--;
           stars++;
        }
        else
        {
           spaces++;
           stars--;
        }
      }


      return 0;
   }
```

21.Write a C program to print heart star pattern.

Answer :

```
#include <stdio.h>


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


   printf("Enter value of n : ");
   scanf("%d", &n);


   for(i=n/2; i<=n; i+=2)
   {
      for(j=1; j<n-i; j+=2)
      {
         printf(" ");
      }
```

```
    for(j=1; j<=i; j++)
    {
       printf("*");
    }

    for(j=1; j<=n-i; j++)
    {
       printf(" ");
    }

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

    printf("\n");
  }

  for(i=n; i>=1; i--)
```

```
    {
       for(j=i; j<n; j++)
       {
          printf(" ");
       }

       for(j=1; j<=(i*2)-1; j++)
       {
          printf("*");
       }

       printf("\n");
    }

    return 0;
}
```

22.Voting machine system make by C programing.

Answer.

```
#include<stdio.h>
#include<string.h>
int main() {
   int BJP = 0, CONG = 0, SP = 0, INC = 0;
   while (1) {
      int age;
      char name[10];
      char gender[10];
      printf("Please enter your gender (Male or Female): ");
      scanf("%s", gender);
      printf("Enter your name: ");
      scanf("%s", name);
      if (strcmp(gender, "Male") == 0) {
         printf("Mr. %s\n", name);
      } else if (strcmp(gender, "Female") == 0) {
         printf("Mrs. %s\n", name);
```

```
    } else {
        printf("You filled in the wrong details. please Try again.\n");
        continue;
    }
    printf("Please enter your age: ");
    scanf("%d", &age);
    if (age >= 18) {
        int num;
        printf("You are eligible for giving a vote.\n");
        printf("Press 1 for BJP\nPress 2 for CONG\nPress 3 for SP\nPress 4 for
INC\n");
        printf("Please enter your number (1-4) to give a vote: ");
        scanf("%d", &num);
        switch (num) {
            case 1:
                printf("Your vote is submitted to BJP.\n");
                BJP++;
                break;
            case 2:
                printf("Your vote is submitted to CONG.\n");
```

```
            CONG++;
            break;
        case 3:
            printf("Your vote is submitted to SP.\n");
            SP++;
            break;
        case 4:
            printf("Your vote is submitted to INC.\n");
            INC++;
            break;
        default:
            printf("You have entered a wrong number.\n");
            printf("Please try again.\n");
            continue;
    }

    printf("\n********* Vote Count *********\n");
    printf("BJP Got %d Votes\n", BJP);
    printf("CONG Got %d Votes\n", CONG);
```

```
    printf("SP Got %d Votes\n", SP);
    printf("INC Got %d Votes\n", INC);
    if (BJP > CONG && BJP > SP && BJP > INC) {
        printf("BJP won the election\n");
    } else if (CONG > BJP && CONG > SP && CONG > INC) {
        printf("CONG won the election\n");
    } else if (SP > BJP && SP > CONG && SP > INC) {
        printf("SP won the election\n");
    } else {
        printf("INC won the election\n");
    }
} else {
    printf("Sorry, you are not eligible for giving a vote.\n");
}

char choice;
printf("Do you want to continue (yes/no)? ");
scanf(" %c", &choice);
if (choice != 'y' && choice != 'Y') {
```

```
            break;
        }
    }
    return 0;
}
```

23. Write a C program to print the given chessboard number pattern of 1's and 0's.

Answer .

```
#include <stdio.h>
int main()
{
    int rows, cols, i, j, k;
    printf("Enter number of rows: ");
    scanf("%d", &rows);
    printf("Enter number of columns: ");
    scanf("%d", &cols);
    k = 1;
    for(i=1; i<=rows; i++)
    {
```

```
    for(j=1; j<=cols; j++)
    {
        if(k == 1)
        {
            printf("1");
        }
        else
        {
            printf("0");
        }
        k *= -1;
    }
    if(cols % 2 == 0)
    {
        k *= -1;
    }
    printf("\n");
}
return 0;
```

```
}
```

24.Write a C program to print the given half diamond star number pattern series.

Answer .

```
#include <stdio.h>

int main()

{

   int i, j, N;

   printf("Enter rows: ");

   scanf("%d", &N);

   printf("*\n");

   for(i=1; i<=N; i++)

   {

      printf("*");

      for(j=1; j<=i; j++)

      {

         printf("%d", j);

      }

      for(j=i-1; j>=1; j--)

      {
```

```
        printf("%d", j);
    }
    printf("*");
    printf("\n");
}
for(i=N-1; i>=1; i--)
{
    printf("*");
    for(j=1; j<=i; j++)
    {
        printf("%d", j);
    }
    for(j=i-1; j>=1; j--)
    {
        printf("%d", j);
    }
    printf("*");
    printf("\n");
}
```

```
    printf("*");
    return 0;
}
```

25.Write a C program to print the given X number pattern series.

Answer .

```
#include <stdio.h>
int main()
{
    int i, j, N;
    printf("Enter N: ");
    scanf("%d", &N);
    for(i=1; i<=N; i++)
    {
        for(j=1; j<i; j++)
        {
            printf(" ");
        }
        printf("%d", i);
```

```
    for(j=1; j<=((N - i) * 2 - 1); j++)
    {
        printf(" ");
    }
    if(i != N)
        printf("%d", i);
    printf("\n");
}
for(i=N-1; i>=1; i--)
{
    for(j=1; j<i; j++)
    {
        printf(" ");
    }
    printf("%d", i);
    for(j=1; j<=((N - i ) * 2 - 1); j++)
    {
        printf(" ");
```

```
        }


        printf("%d", i);
        printf("\n");
    }
    return 0;
}
```

26.Write a function to print all Armstrong numbers between given interval.

Answer.

```
#include <stdio.h>
int isArmstrong(int num);
void printArmstrong(int start, int end);
int main()
{
    int start, end;
    printf("Enter lower limit to print armstrong numbers: ");
    scanf("%d", &start);
    printf("Enter upper limit to print armstrong numbers: ");
```

```
    scanf("%d", &end);
    printf("All armstrong numbers between %d to %d are: \n", start, end);
    printArmstrong(start, end);
    return 0;
}
int isArmstrong(int num)
{
    int temp, lastDigit, sum;
    temp = num;
    sum = 0;
                while(temp != 0)
    {
        lastDigit = temp % 10;
        sum += lastDigit * lastDigit * lastDigit;
        temp /= 10;
    }
    if(num == sum)
        return 1;
    else
```

```
    return 0;
}
void printArmstrong(int start, int end)
{
   while(start <= end)
   {
      if(isArmstrong(start))
      {
         printf("%d, ", start);
      }
      start++;
   }
}
```

Output : Armstrong numbers between 1 to 1000 are: 1, 153, 370, 371, 407.

27.Write a function to print all perfect numbers in a given interval.

Answer.

```
#include <stdio.h>
int isPerfect(int num);
```

```
void printPerfect(int start, int end);
int main()
{
   int start, end;
      printf("Enter lower limit to print perfect numbers: ");
   scanf("%d", &start);
   printf("Enter upper limit to print perfect numbers: ");
   scanf("%d", &end);
   printf("All perfect numbers between %d to %d are: \n", start, end);
   printPerfect(start, end);
   return 0;
}
int isPerfect(int num)
{
   int i, sum;
      sum = 0;
   for(i=1; i<num; i++)
   {
      if(num % i == 0)
```

```
        {
            sum += i;
        }
    }
    if(sum == num)
        return 1;
    else
        return 0;
}
void printPerfect(int start, int end)
{
    while(start <= end)
    {
        if(isPerfect(start))
        {
            printf("%d, ", start);
        }
        start++;
    }
```

} Output : Perfect numbers: 6, 28

28. Write a C program to find largest and second largest element in an array.

Answer .

```
#include<stdio.h>

int main()

{

        int n,max1,max2;

        int a[n];

        scanf("%d", &n);

        max1= max2 = 0;

        for(int i=0; i<n; i++)

        {

                scanf("%d\n", &a[i]);

        }


        for(int i=0; i<n; i++)

        {

                if (max1 < a[i])

                {
```

```
                max2 = max1;
                max1 = a[i];
            }
            else if(max1 > a[i] && max2 < a[i])
            {
                max2 = a[i];
            }
        }
        printf("first largest NO. max1 = %d", max1);
   printf("first largest NO. max2 = %d", max2);
}
```

Output : Second largest = 38

29.Write a C program to Linear in an array.

Answer :

```
#include<stdio.h>
int main()
{
        int a[5] = {10,20,30,40,50};
```

```
        int item = 40;
        for(int i=0; i<5; i++)
        {
                if (a[i]==item)
                {
                        printf("element found at index is %d", i);
                        break;
                }
                if(i>=5)
                {
                        printf("element not found");
                }
        }
}
```

Output : element found at index is 3

30.Write a C program swap of two number by using pointer.

Answer :

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

```
int main(){
        int a,b,temp;
        printf("enter any two no.\n");
        scanf("%d\n%d", &a,&b);
        int *p = &a;
        int *q = &b;
        printf("after swapping the no.\n");
        printf("the value of a is = %d\n", a);
        printf("the value of b is = %d\n", b);
        temp = *p;
        *p = *q;
        *q = temp;
   printf("before swapping the no.\n");
        printf("the value of a is = %d\n", *p);
        printf("the value of b is = %d\n", *q);
return 0;  }
```

Output :

enter any two no.

12

21

after swapping the no.

the value of a is = 12

the value of b is = 21

before swapping the no.

the value of a is = 21

the value of b is = 12

31.Write a C program swap of two no. using call by value function.

Answer :

```
#include<stdio.h>
void swap(int a, int b)
{
        a=a+b;
        b=a-b;
        a=a-b;
        printf("Before swapping the number:\n");
        printf("a = %d\n", a);
        printf("b = %d\n", b);
```

```
}
int main()
{
        int n1,n2;
        printf("enter any two number:\n");
        scanf("%d%d", &n1, &n2);
        printf("After swapping the number:\n");
        printf("n1=%d\nn2=%d\n", n1,n2);
        swap(n1,n2);
}
```

Output :

```
enter any two no.
12
21
after swapping the no.
the value of a is = 12
the value of b is = 21
```

before swapping the no.

the value of a is = 21

the value of b is = 12

32. Write a C program string is palidrome or not without using inbuild function.

Answer .

```
#include<stdio.h>

int main(){

        char a[50];

        printf("Enter a word to check is it palidrome : ");

        gets(a);

        int len=0 , i=0 , flag=0;

        while (a[i] != '\0'){

                len++;

                i++;

        }

        for (int j=0; a[j] != '\0'; j++){

                if (a[j] != a[len-j-1]){

                        flag++;
```

```
                    break;
                }
        }
        if (flag == 0)
                printf("String is palidrome.");
        else
                printf("String is not palidrome.");
}
```

33.Write a C program bubblesort.

Answer.

```
#include<stdio.h>
int main()
{
        int n,i,j,t,a[5];
        n=sizeof(a)/sizeof(a[0]);
        printf("Enter the %d elements\n",n);
        for(i=0;i<n;i++)
        scanf("%d",&a[i]);
        for(i=0;i<n-1;i++){
```

```
                for(j=0;j<n-1-i;j++){
                        if (a[j]>a[j+1]){
                        t=a[j];
                        a[j]=a[j+1];
                        a[j+1]=t;}
                }
        }
        printf("After bubble sort\n");
        for(i=0;i<n;i++)
        printf("%d ",a[i]);
}
```

Output : Enter the 5 elements

20

32

34

45

51

After bubble sort

20 32 34 45 51

34.Write a C program to make a sparse matrix.

Answer.

```
#include<stdio.h>
#include<conio.h>
int main()
{
        int a,b,sumdiagonal=0;
        printf("enter size rows and columns");
        scanf("%d%d",&a,&b);
        int c[a][b];
        for(int i=0;i<a;i++)
        {for(int j=0;j<b;j++)
        {printf("enter the element of array of c[%d][%d]",i,j);
        scanf("%d",&c[i][j]);}
        }
        printf("first matrix\n");
        for(int i=0;i<a;i++)
        {for(int j=0;j<b;j++)
```

```
{printf("%d",c[i][j]);
}
printf("\n");
}
int count=0;
for(int i=0;i<a;i++)
{for(int j=0;j<b;j++)
{if(c[i][j]==0)
{count++;
}
}
}
int sparse=(a*b)/2;
if (count>sparse)
{
        printf("given matrix is sparse matrix");
}
else
{
```

```
                printf("given matrix is not sparse matrix\n");
        }
        return 0;
}
```

Output : enter size rows and columns3

3

enter the element of array of c[0][0]1

enter the element of array of c[0][1]2

enter the element of array of c[0][2]0

enter the element of array of c[1][0]0

enter the element of array of c[1][1]0

enter the element of array of c[1][2]0

enter the element of array of c[2][0]3

enter the element of array of c[2][1]0

enter the element of array of c[2][2]9

first matrix

120

000

309

given matrix is sparse matrix

35.Write a C program to print hollow diamond star pattern series of n rows.

Answer.

```
#include <stdio.h>
int main()
{
   int i, j, n;
   printf("Enter value of n : ");
   scanf("%d", &n);
   for(i=1; i<=n; i++)
   {
      for(j=i; j<=n; j++)
      {
         printf("*");
      }
      for(j=1; j<=(2*i-2); j++)
      {
         printf(" ");
      }
```

```
    for(j=i; j<=n; j++)
    {
        printf("*");
    }
    printf("\n");
}

for(i=1; i<=n; i++)
{
    for(j=1; j<=i; j++)
    {
        printf("*");
    }
    for(j=(2*i-2); j<(2*n-2); j++)
    {
        printf(" ");
    }
    for(j=1; j<=i; j++)
    {
```

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