

A Micro Project Report

on

Problem Solving using C Language

Submitted by
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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
NARASARAOPETA ENGINEERING COLLEGE: NARASARAOPET
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CERTIFICATE

This is to certify that **Kurapati Aiswarya**, Roll No: 23471A05DZ, a Second Year Student of the Department of Computer Science and Engineering, has completed the Micro Project Satisfactorily in "Problem Solving using C Language" for the Academic Year 2024-2025..

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PASCAL Triangle Pattern

AIM:

C Program to generate PASCAL Triangle.

Source Code:

```
#include<stdio.h>

int main()
{
    int i,j,k,n,c=1;
    printf("Enter no.of rows:");
    scanf("%d",&n);
    for(i=0;i<n;i++)
    {
        for(k=i;k<n;k++)
        {
            printf(" ");
        }
        for(j=0;j<=i;j++)
        {
            if(j==0||i==0)
                c=1;
            else
                c=c*(i-j+1)/j;
            printf("%d",c);
        }
        printf("\n");
    }
}
```

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

INPUT:

Enter no.of rows:5

OUTPUT:

```
1
1 1
1 2 1
1 3 3 1
1 4 6 4 1
```

Output:

```
Enter the number of rows: 5
1
1 1
1 2 1
1 3 3 1
1 4 6 4 1
```

Plus Pattern Using Star.

AIM:

C program to generate Plus Pattern Using Star.

Source Code:

```
#include<stdio.h>
int main()
{
    int i,j,n;
    printf("Enter Size(odd number):");
    scanf("%d",&n);
    if(n%2==0)
    {
        printf("Enter odd number..");
        return 1;
    }
    for(i=0;i<n;i++)
    {
        for(j=0;j<n;j++)
        {
            if(i==n/2||j==n/2)
                printf("*");
            else
                printf(" ");
        }
    }
}
```

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

INPUT:

Enter the size(odd numbers):5.

OUTPUT:

```
*
```

```
*
```

```
* * * * *
```

```
*
```

```
*
```

Output:

```
Enter the size (odd number): 5
*
*
*****
*
*
```

Equilateral Triangle Shape Pattern.

AIM:

C program to generate Equilateral Triangle Shape Pattern.

Source Code:

```
#include<stdio.h>
int main()
{
    int i,j,n;
    printf("Enter the number of rows");
    scanf("%d",&n);
    for(i=0;i<=n;i++)
    {
        for(j=i;j<=n;j++)
        {
            printf(" ");
        }
        for(j=1;j<=(2*i-1);j++)
        {
            printf("*");
        }
        printf("\n");
    }
    return 0;
```

}

INPUT:

Enter the number of rows: 5

OUTPUT:

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

Output:

```
Enter the number of rows: 5  
*  
***  
*****  
*****  
*****
```

Hollow Diamond Pattern.

AIM:

To Generate Hallow Diamond Pattern Using Stars…

Source Code:

```
#include<stdio.h>
int main()
{
    int rows,cols,spaces,n;
    printf("Enter number of rows");
    scanf("%d",&n);
    for(rows=1;rows<=n;rows++)
    {
        for(spaces=1;spaces<=n-rows;spaces++)
        {
            printf(" ");
        }
        for(cols=1;cols<=2*rows-1;cols++)
        {
            if(cols==1||cols==2*rows-1)
                printf("*");
        }
    }
}
```

```
else
    printf(" ");
}
printf("\n");
}
for(rows=n-1;rows>=1;rows--)
{
    for(spaces=1;spaces<=n-rows;spaces++)
    {
        printf(" ");
    }
    for(cols=1;cols<=2*rows-1;cols++)
    {
        if(cols==1||cols==2*rows-1)
            printf("*");
        else
            printf(" ");
    }
    printf("\n");
}
return 0;
}
```

INPUT:

Enter number of rows : 5

OUTPUT:

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

Output:

```
Enter number of rows5
```

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

Produce the Pattern:

ABCDEF GFEDCBA
ABCDEF. FEDCBA
ABCDE EDCBA
ABCD DCBA
ABC CBA
AB BA
A A

AIM:

Write a C program to produce the following output:

ABCDEF GFEDCBA
ABCDEF FEDCBA
ABCDE EDCBA
ABCD DCBA
ABC CBA
AB BA
A A

Source Code:

```
#include <stdio.h>

int main() {
    int i, j,n;
    printf("Enter value");
    scanf("%d",&n);
    for (i = 0; i < n; i++)
    {
        for (j = 0; j < n - i; j++)
        {
            if (j < i)
                printf(" ");
            else
                printf("%c", j + 65);
        }
        printf("\n");
    }
}
```

```
    printf("%c", 'A' + j);

}

for (j = 0; j <( 2*i-1); j++)

{

    printf(" ");

}

if (i != 0)

{

    for (j = n - i - 1; j >= 0; j--)

    {

        printf("%c", 'A' + j);

    }

}

else

{

    for (j = n - i - 2; j >= 0; j--)

    {

        printf("%c", 'A' + j);

    }

}

printf("\n");

}

return 0;
}
```

INPUT:

Enter value : 7

OUTPUT:

ABCDEFGFEDCBA

ABCDEF FEDCBA

ABCDE EDCBA

ABCD DCBA

ABC CBA

AB BA

A A

Output:

```
Enter value7
ABCDEFGFEDCBA
ABCDEF FEDCBA
ABCDE EDCBA
ABCD DCBA
ABC CBA
AB BA
A A
```