A Micro Project Report

on

Problem Solving using C Language

Submittedby
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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

NARASARAOPETA ENGINEERING COLLEGE:NARASARAOPET

(AUTONOMOUS)

Accredited by NAAC with A+ Grade and NBA under Tier-1

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NARASARAOPETA ENGINEERING COLLEGE:NARASARAOPET

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CERTIFICATE

This is to certify that GANTA MANASARANI, Roll No: 23471A05C0, 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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C Program to Generate Equilateral Triangle Shape Pattern

AIM:

1.Write a C Program to Generate Equilateral Triangle Shape Pattern

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

Output:

```
Enter the number of rows: 7
      *
     ***
    *****
   *******
  *********
 ***********
*************
```

Generate Hollow Diamond Pattern Using Stars

AIM:

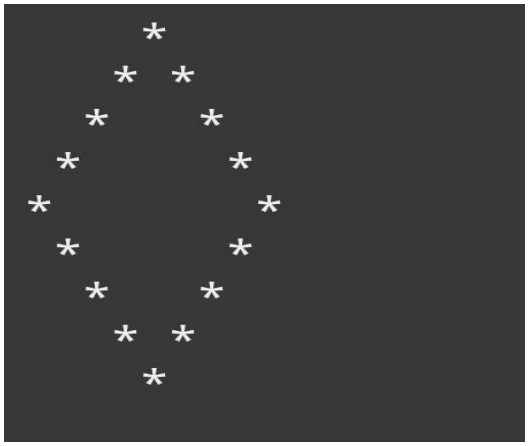
2.Write a C Program to Generate Hollow Diamond Pattern Using Stars

```
include <stdio.h>
int main()
{
 int n = 5, rows, columns;
 for (rows = 1; rows <= n; rows++) {
 for (columns = n; columns > rows;   columns--)
{
printf(" ");
}
printf("*");
for (columns = 1; columns < (rows - 1) * 2; columns++)
{
printf(" ");
 }
if (rows == 1)
{
 printf("\n");
  }
  else
 {
```

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

}
```

Output:



a string, consisting of alphabets and digits, find the frequency of each digit in the given string

AIM:

3.C program to given a string, consisting of alphabets and digits, find the frequency of each digit in the given string

```
#include <stdio.h>

#include <string.h>


int main()

{

char str[100];

int freq[10] = {0};

printf("Enter a string: ");

scanf("%s", str);

for (int i = 0; i < strlen(str); i++)

{

if (str[i] >= '0' && str[i] <= '9')

 {

int digit = str[i] - '0';

freq[digit]++;

}

}

printf("Digit frequencies:\n");

for (int i = 0; i < 10; i++)
```

```
{
printf("Frequency of %d = %d\n", i, freq[i]);
}
return 0;
}
```

Output:

```
Enter a string: manasa123@
Digit frequencies:
Frequency of 0 = 0
Frequency of 1 = 1
Frequency of 2 = 1
Frequency of 3 = 1
Frequency of 4 = 0
Frequency of 5 = 0
Frequency of 6 = 0
Frequency of 7 = 0
Frequency of 8 = 0
Frequency of 9 = 0

[Process completed - press Enter]
```

given a sentence, print each word of the sentence in a new line.

AIM:

4.Write a C program given a sentence, print each word of the sentence in a new line.

```
#include <stdio.h>
#include <string.h>
int main() {
    char str[100];
    printf("Enter a sentence: ");
    fgets(str, sizeof(str), stdin);
    str[strcspn(str, "\n")] = '\0';
    char *word = strtok(str, " ");
    while (word != NULL) {
   printf("%s\n", word);
   word = strtok(NULL, " ");
  }
  return 0;
}
```

Output:

```
Enter a sentence: i love programming
i
love
programming
```

Twenty five numbers are entered from the keyword into an array. The number to be searched is entered through the keyword by the user. Write a program to find the number to be searched is present in the array and if it is present, display the number of times it appears in the array

AIM:

5.Write a C program Attempt the following:

Twenty five numbers are entered from the keyword into an array. The number to be searched is entered through the keyword by the user. Write a program to find the number to be searched is present in the array and if it is present, display the number of times it appears in the array.

```
#include <stdio.h>

int main() {

  int arr[25] = {1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24,
25};

  int target, count = 0;

printf("Enter the number to search: ");

scanf("%d", &target);

for (int i = 0; i < 25; i++)

{

 if (arr[i] == target)

{
```

```
 count++;
}
}
if (count > 0)
{
 printf("The number %d is present in the array %d times.\n", target, count);
  } else
 {
 printf("The number %d is not present in the array.\n", target);
}
return 0;
}
```

Output:

```
Enter the number to search: 5
The number 5 is present in the array 1 ti
mes.
```