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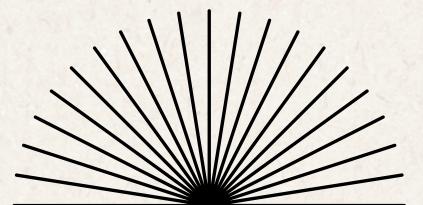
PROGRAMMING FUNDAMENTALS OF C

PROJECT PFC

Palindrome Check Using String Reverse

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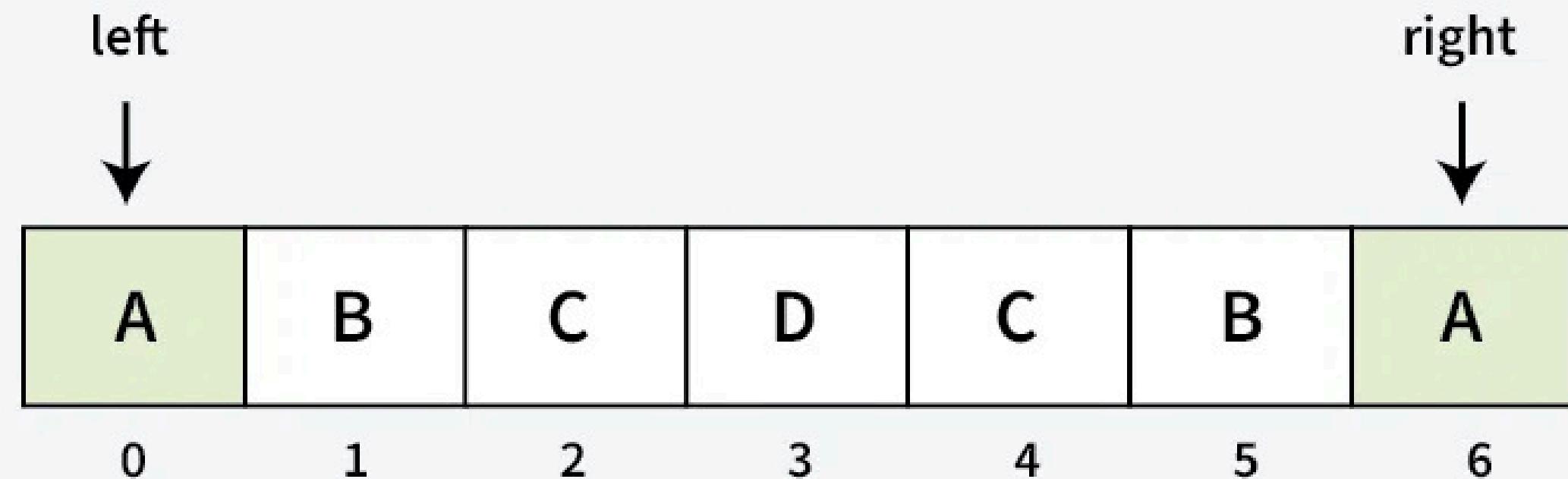
Agenda

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INTRODUCTION

- 01** A palindrome is a string that reads the same forward and backward.
 - 02** This project is based on checking whether a given string is a palindrome.
 - 03** The program is written in C using string operations.
 - 04** It helps in understanding functions and string handling in C.

01 Step Keep two pointers **left** and **right**, such that **left** = 0 and **right** = 6.
Compare: $s[\text{left}] == s[\text{right}]$, increment **left** by 1 and decrement **right** by 1.



Check for Palindromic String

TECHNOLOGY USED

TOOLS AND TECHNOLOGY USED IN PROJECT :-



C

PROGRAMMING LANGUAGE



GCC

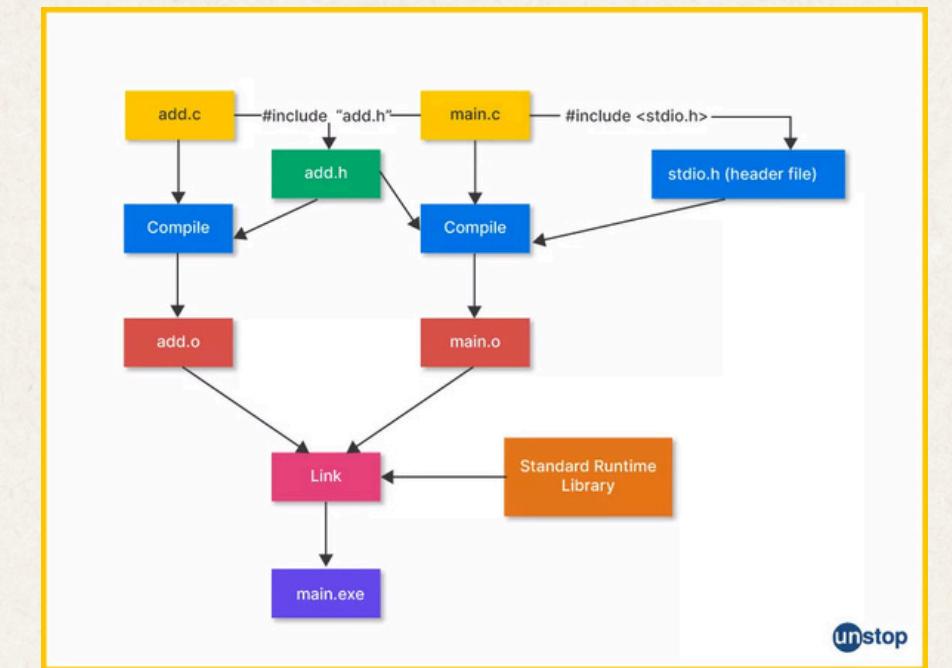
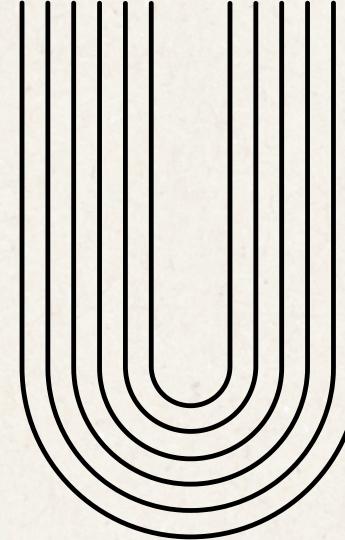
Compiler: GCC



GITHUB

To store and share project

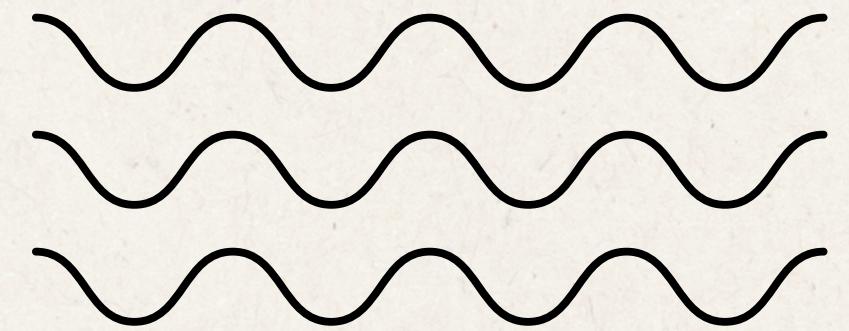
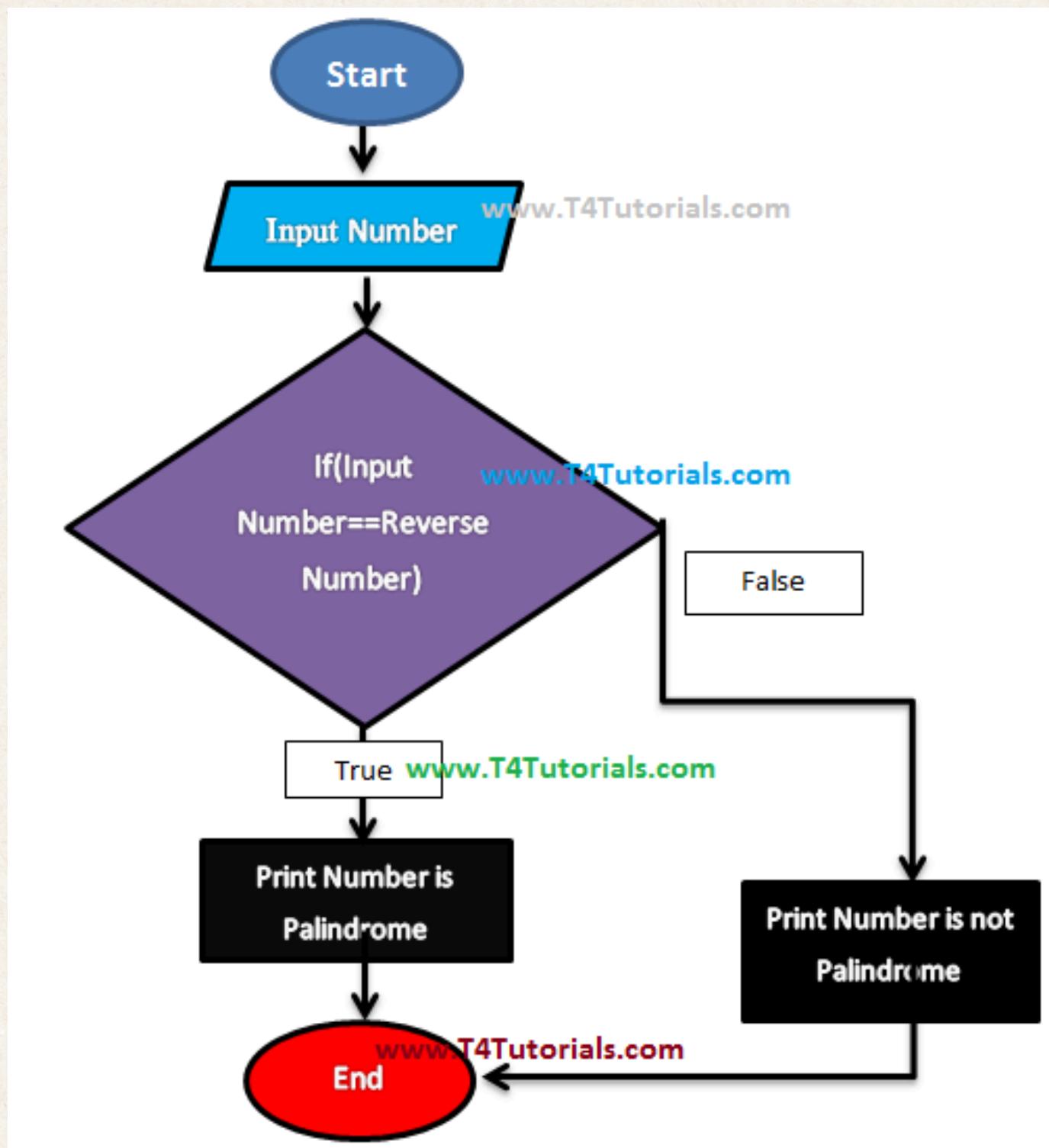
Platform: Windows



unstop

Header Files Used:

- stdio.h for input and output
- string.h for string functions

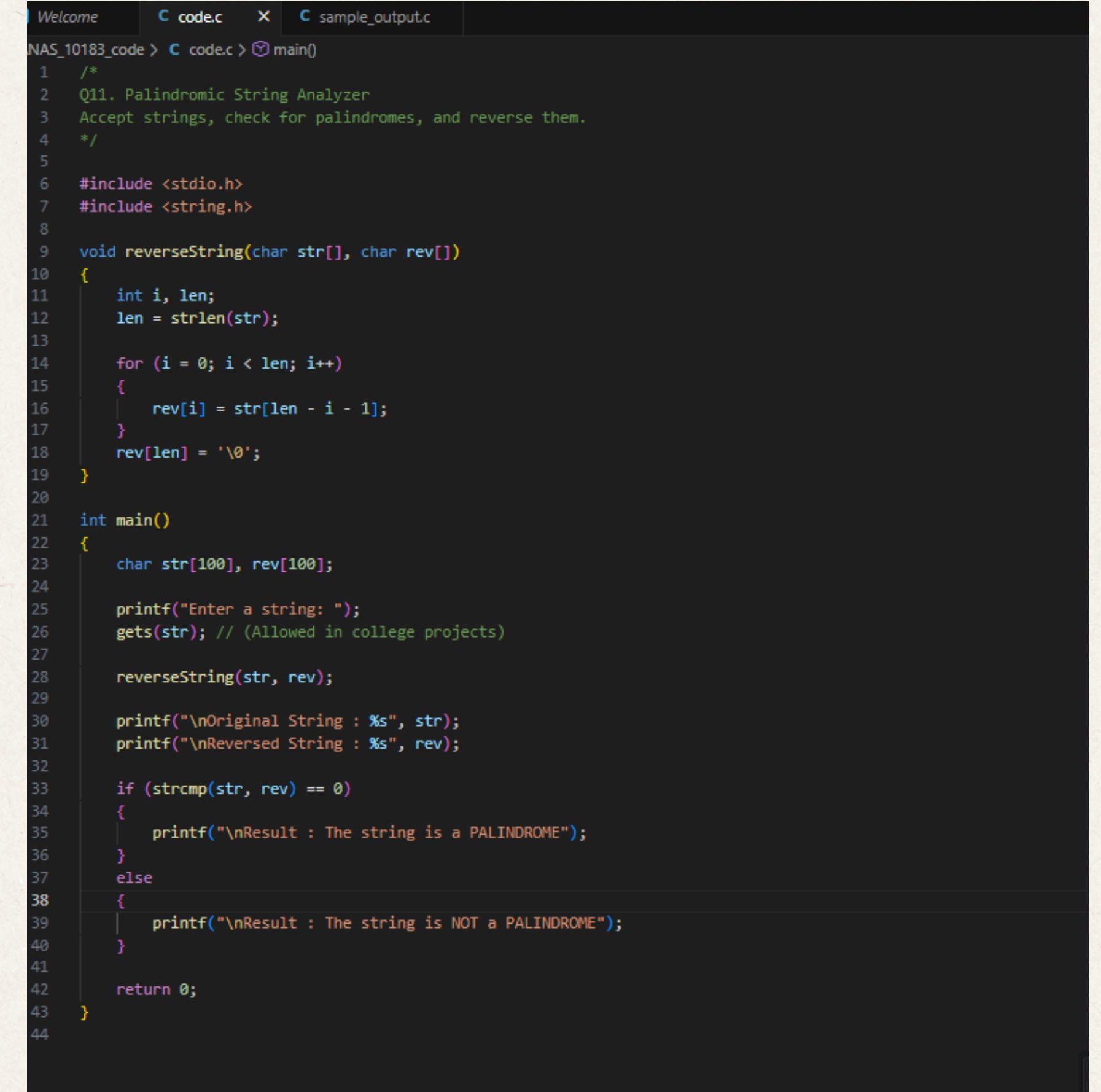


PROJECT WORKING

- The user enters a string.
- The string is passed to a user-defined function.
- The function reverses the string.
- The reversed string is compared with the original string.
- If both strings are same, it is a palindrome.
- Otherwise, it is not a palindrome.

PROGRAM CODE

- The program uses a user-defined function to reverse the string.
- `strlen()` is used to find the length of the string.
- A loop is used to reverse the string character by character.
- The main function compares both strings and prints the result.



The screenshot shows a code editor window with the following details:

- Title Bar:** Welcome, C codec.c, X, C sample_output.c
- File Path:** NAS_10183_code > C codec.c > main()
- Code Content:** C code for a palindromic string analyzer. It includes a `reverseString` function to reverse a string and a `main` function to check if the original string is a palindrome.

```
1  /*
2  Q11. Palindromic String Analyzer
3  Accept strings, check for palindromes, and reverse them.
4  */
5
6 #include <stdio.h>
7 #include <string.h>
8
9 void reverseString(char str[], char rev[])
10 {
11     int i, len;
12     len = strlen(str);
13
14     for (i = 0; i < len; i++)
15     {
16         rev[i] = str[len - i - 1];
17     }
18     rev[len] = '\0';
19 }
20
21 int main()
22 {
23     char str[100], rev[100];
24
25     printf("Enter a string: ");
26     gets(str); // (Allowed in college projects)
27
28     reverseString(str, rev);
29
30     printf("\nOriginal String : %s", str);
31     printf("\nReversed String : %s", rev);
32
33     if (strcmp(str, rev) == 0)
34     {
35         printf("\nResult : The string is a PALINDROME");
36     }
37     else
38     {
39         printf("\nResult : The string is NOT a PALINDROME");
40     }
41
42     return 0;
43 }
```

OUTPUT

- Palindrome string

```
Enter a string: ANAS

Original String : ANAS
Reversed String : SANA
Result : The string is NOT a PALINDROME * Terminal will be reused by tasks, press any key to close it.
█
```

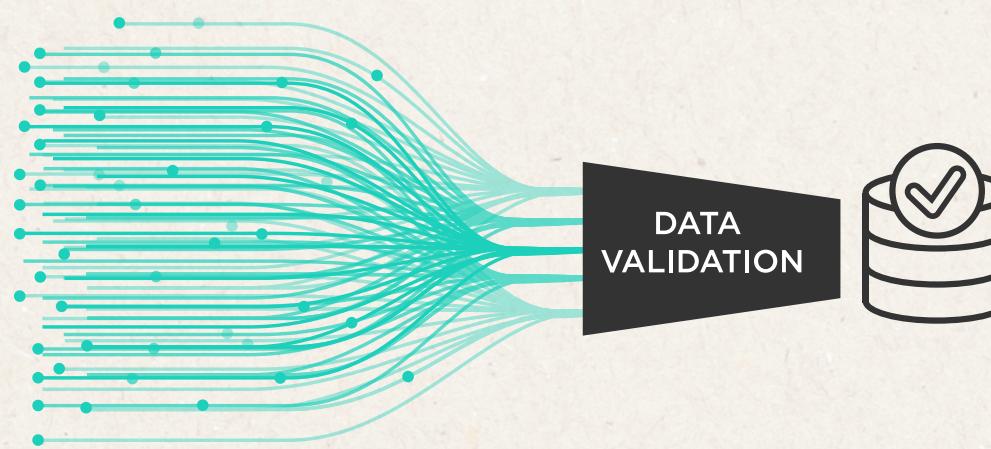
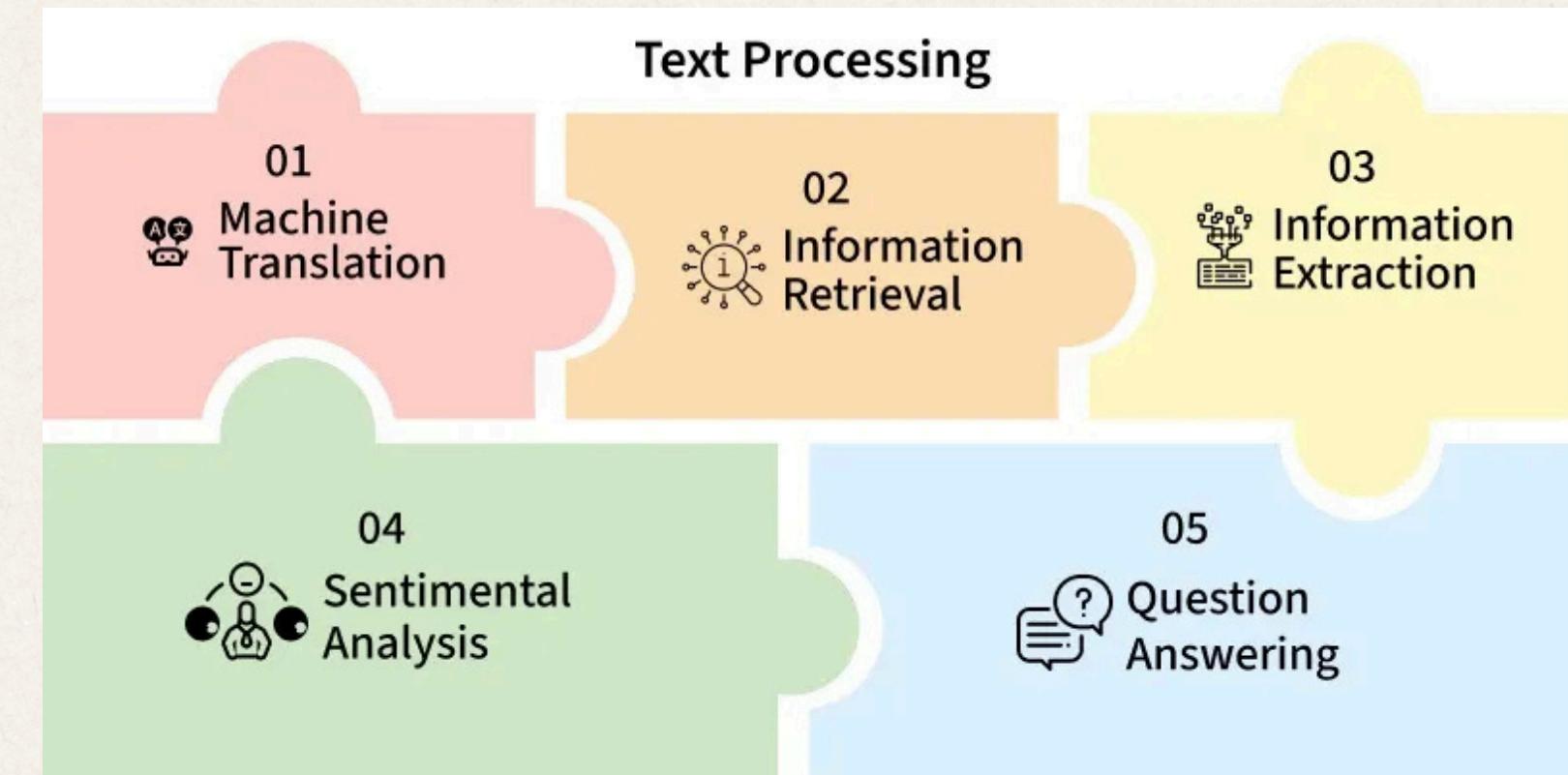
- Not a Palindrome string

```
Enter a string: madam

Original String : madam
Reversed String : madam
Result : The string is a PALINDROME * Terminal will be reused by tasks, press any key to close it.
█
```

APPLICATION

- Used in text processing programs.
- Useful in data validation.
- Applied in pattern recognition problems.
- Helps in learning string manipulation concepts.



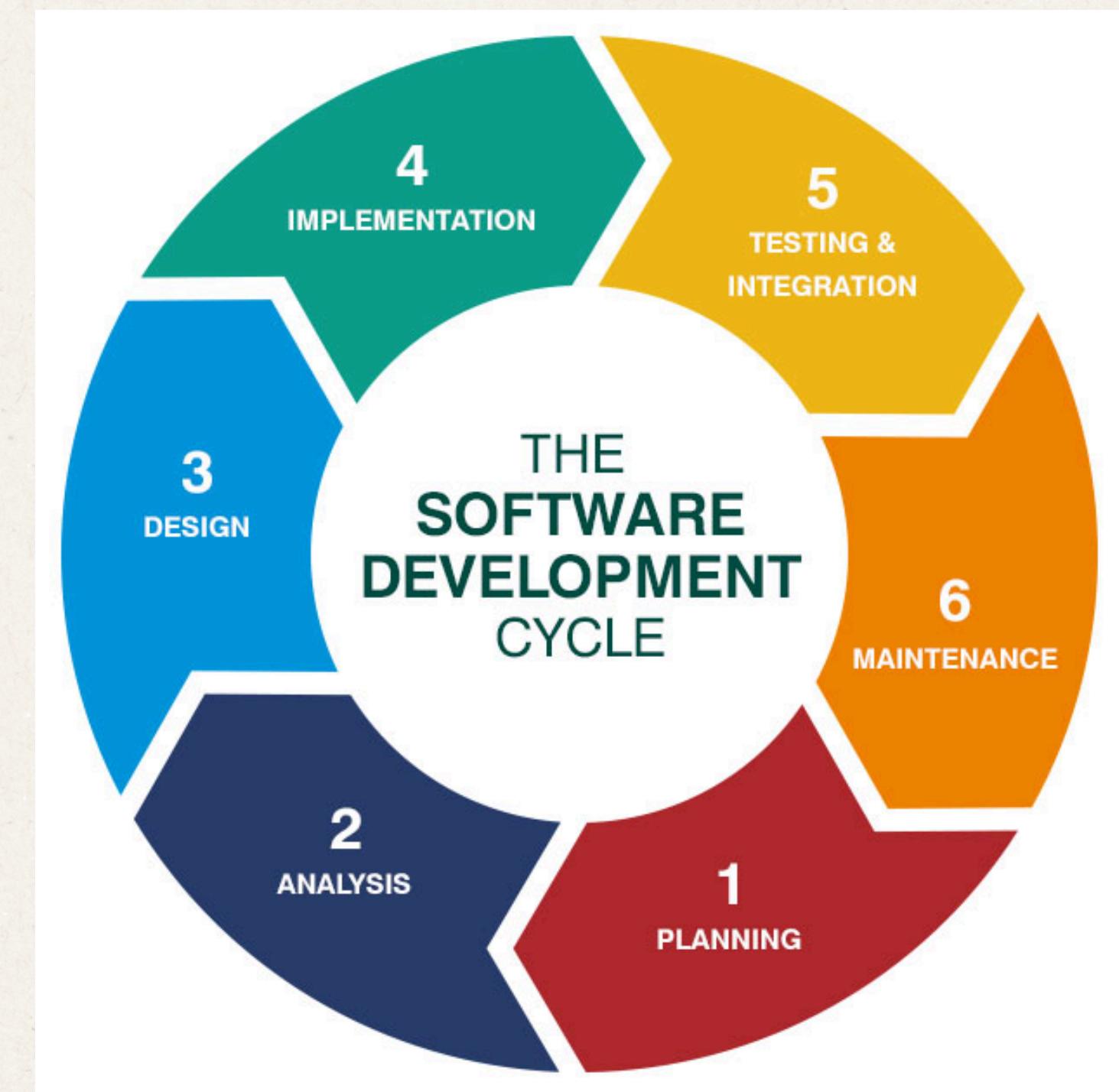
ADVANTAGES & FUTURE SCOPE

Advantages

- Easy to understand and implement.
- Uses simple logic and functions.
- Improves knowledge of strings in C.

Future Scope

- Can be extended for numbers and sentences.
- Can ignore spaces and special characters.
- Can be implemented in other programming languages.



CONCLUSION

- THE PALINDROME CHECKING PROGRAM IS SUCCESSFULLY IMPLEMENTED.
- IT USES USER-DEFINED FUNCTIONS AND STRING OPERATIONS.
- THE PROJECT IMPROVES UNDERSTANDING OF C PROGRAMMING FUNDAMENTALS.
- THE OBJECTIVE OF THE PROJECT IS ACHIEVED.

