PPWC Daily Practice

Date:29/10/2024

1. Write a c program to replace 0 and 1 in a number.

Code Breakdown and Explanation

1. **Variable Declaration:**
    a. **The program declares a 'char' array 'num[30]' to hold the input string. This array can store up to 29 characters plus a null terminator ("\0"), allowing it to handle input numbers of up to 29 digits.**
2. **Input:**
    a. **The program prompts the user to enter a number and uses 'scanf' to read the input into the 'num' array. Since 'scanf' with '%s' reads a string, this input will be stored as a sequence of characters in 'num'.**
3. **Replacement Logic (0 to 1 and 1 to 0):**
    a. **The program uses a 'while' loop to iterate through each character in 'num' until it reaches the end (indicated by the null character "\0").**
    b. **For each character:**
        i. **If the character is "0", it is replaced with "1".**
        ii. **If the character is "1", it is replaced with "0".**
    c. **This replacement is handled by checking each character using an 'if-else' statement.**
4. **Output:**
    a. **After completing the replacements, the modified 'num' string is printed out.**
5. **Key Points**
    a. **String Manipulation: This program treats the number as a string of characters so it can manipulate individual digits.**
    b. **Conditionals: The 'if-else' structure ensures only "0" and "1" characters are changed, leaving any other digits (2-9) unaffected.**
    c. **Iterative Approach: The program uses a 'while' loop to process each character until the null terminator is reached, ensuring all characters in the input are examined and modified if necessary.**