Exp. No. 13

Write a C program to implement either Top Down parsing technique or
Bottom Up Parsing technique to check whether the given input string
is satisfying the grammar or not.

Program:

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

int main() {
   char string[50];
   int flag = 0, count = 0;

   printf("The grammar is: S -> aS | S -> Sb | S -> ab\n");
   printf("Enter the string to be checked:\n");

   fgets(string, sizeof(string), stdin);
   string[strcspn(string, "\n")] = '\0'; // Remove newline character

   if (string[0] == 'a') {
      flag = 0;
      for (count = 1; string[count] != '\0'; count++) {
         if (string[count] == 'b') {
            flag = 1;
            continue;
         } else if ((flag == 1) && (string[count] == 'a')) {
            printf("The string does not belong to the specified grammar\n");
            return 0;
         } else if (string[count] == 'a') {
            continue;
         } else {
            printf("String not accepted.....!!!!\n");
            return 0;
         }
      }

      if (flag == 1) {
         printf("String accepted\n");
      } else {
         printf("String not accepted.....!!!!\n");
      }
```

```
    } else {
        printf("The string does not belong to the specified grammar\n");
    }

    return 0;
}
```