

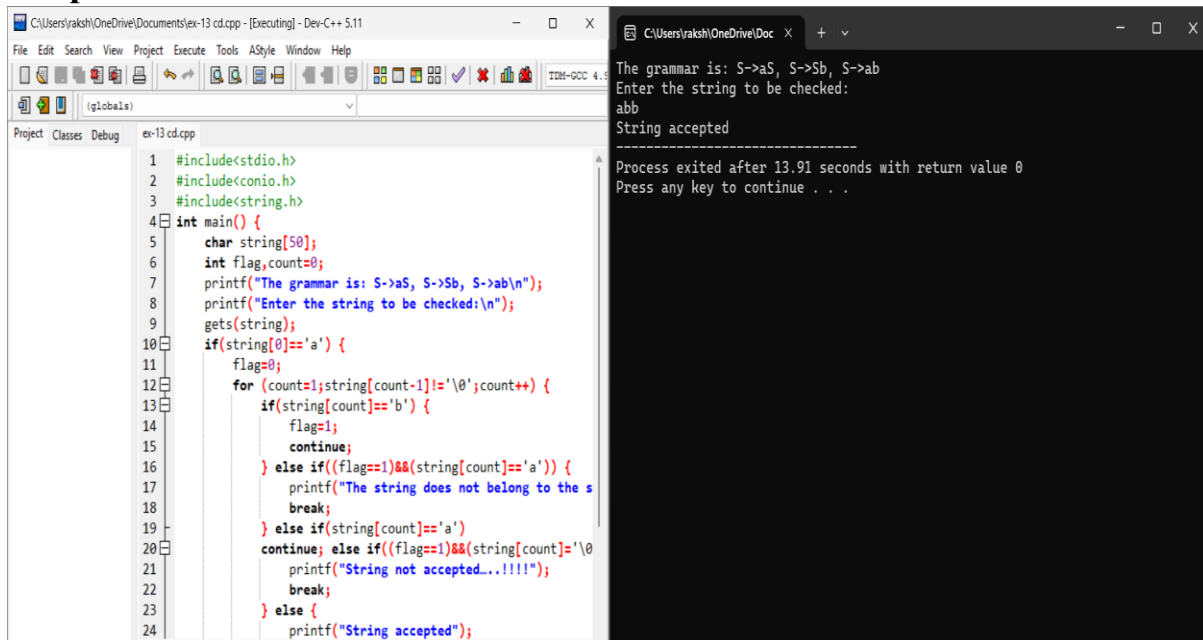
Experiment -13

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<conio.h>
#include<string.h>
int main() {
    char string[50];
    int flag,count=0;
    printf("The grammar is: S->aS, S->Sb, S->ab\n");
    printf("Enter the string to be checked:\n");
    gets(string);
    if(string[0]=='a') {
        flag=0;
        for (count=1;string[count-1]!='\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");
                break;
            } else if(string[count]=='a')
                continue; else if((flag==1)&&(string[count]!='\0')) {
                printf("String not accepted.....!!!!");
                break;
            } else {
                printf("String accepted");}}}
}
```

Output:



The image shows a screenshot of a C++ IDE (Dev-C++ 5.11) with a project named 'ex-13 cd.cpp'. The code is a grammar checker for the grammar $S \rightarrow aS, S \rightarrow Sb, S \rightarrow ab$. The program prompts the user to enter a string to be checked. The user input is 'abb', and the program outputs 'String accepted'. The program also displays the grammar rules and the input string.

```
1 #include<stdio.h>
2 #include<conio.h>
3 #include<string.h>
4 int main() {
5     char string[50];
6     int flag,count=0;
7     printf("The grammar is: S->aS, S->Sb, S->ab\n");
8     printf("Enter the string to be checked:\n");
9     gets(string);
10    if(string[0]!='a') {
11        flag=0;
12        for (count=1;string[count-1]!='\0';count++) {
13            if(string[count]=='b') {
14                flag=1;
15                continue;
16            } else if((flag==1)&&(string[count]=='a')) {
17                printf("The string does not belong to the s
18                break;
19            } else if(string[count]=='a')
20            continue; else if((flag==1)&&(string[count]!='\0
21            printf("String not accepted.....!!!!");
22            break;
23        } else {
24            printf("String accepted");
```

The grammar is: S->aS, S->Sb, S->ab
Enter the string to be checked:
abb
String accepted

Process exited after 13.91 seconds with return value 0
Press any key to continue . . .