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 <stdlib.h>

#include <ctype.h>

char\* input;

char lookahead;

void S();

void B();

void match(char expected);

void match(char expected) {

if (lookahead == expected) {

lookahead = \*input++;

} else {

printf("Syntax error: expected %c\n", expected);

exit(1);

}

}

void S() {

match('a');

B();

match('a');

}

void B() {

if (lookahead == 'b') {

match('b');

B();

} else if (lookahead == 'c') {

match('c');

} else {

printf("Syntax error: unexpected character %c\n", lookahead);

exit(1);

}

}

void parse(char\* expr) {

input = expr;

lookahead = \*input++;

S();

if (lookahead == '\0') {

printf("Parsing successful\n");

} else {

printf("Syntax error: unexpected character %c at the end\n", lookahead);

}

}

int main() {

char expr[] = "abbbba";

parse(expr);

return 0;

}

**Output:**

