EXP NO: 4.

CHECKING WHETHER A STRING BELONGS TO A GRAMMAR

Date:

AIM:

To write a c program to check whether a string belongs to the grammar.

$S \rightarrow 0A1$

$A \rightarrow 0A/1A/\varepsilon$

Language defined by the grammar:

Set of all strings over $\Sigma = \{0, 1\}$ that start with 0 and end with 1.

Algorithm:

1. Get the input string from the user.
2. Find the length of the string.
3. Check whether all the symbols in the input are either 0 or 1. If so, print "string is valid" and go to step 4. Otherwise print "string not valid" & exit the program.
4. If the first symbol is 0 & the last symbol is 1, print "string accepted" otherwise, print "string not accepted".

Program:

```
#include<stdio.h>
#include<string.h>
int main() {
char s[100];
int i, flag;
int l;
printf("enter the string to check:");
scanf("%s", s);
l = strlen(s);
flag = 1;
for(i=0; i<l; i++)
{
  if (s[i]!='0' && s[i]!='1')
  {
    flag=0;
  }
}
  if (flag!=1)
    printf("string is not valid\n");
if (flag==1)
{
  if (s[0]=='0' && s[l-1]=='1')
    printf("string is accepted\n");
  else
    printf("string is not accepted\n");
  }
}
```

Output:

enter a string to check: 01010111101
string is accepted

enter the string to check: 011101010110
string is not accepted

enter a string to check: abbbababa
string is not valid.