Exp 2 :- Checking wheter A string belongs to Grammar

Aim :

To write a c program to check wheter a string belongs to the grammar

$$S \rightarrow OA1$$
$$A \rightarrow OA \mid 1A \mid \varepsilon$$

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 wheter all the Symbols in the input are either 0 or 1. If so, Point "String is valid" and go to step 4. otherwise Print "String not valid" and quit the program.

4. If the first Symbol is 0 and the last Symbol is 1, Point "String accepted". otherwise Point "String not accepted"

Program

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

```c
int main()
chars [100];
int i, flag;
int l;
printf("Enter a 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: 010101111011
String is accepted

Enter a String to check: 011101010110
String is not accepted

Enter a String to check: abbbbababa
String is not valid