

To write a C program to check whether a string belongs to the grammar $S \rightarrow 0S0 \mid 1S1 \mid 0 \mid 1 \mid \epsilon$

AIM : To write a C program to check whether a string belongs to the grammar $S \rightarrow 0S0 \mid 1S1 \mid 0 \mid 1 \mid \epsilon$

Program:

```
#include<stdio.h>

#include<string.h>

int main(){

char s[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");

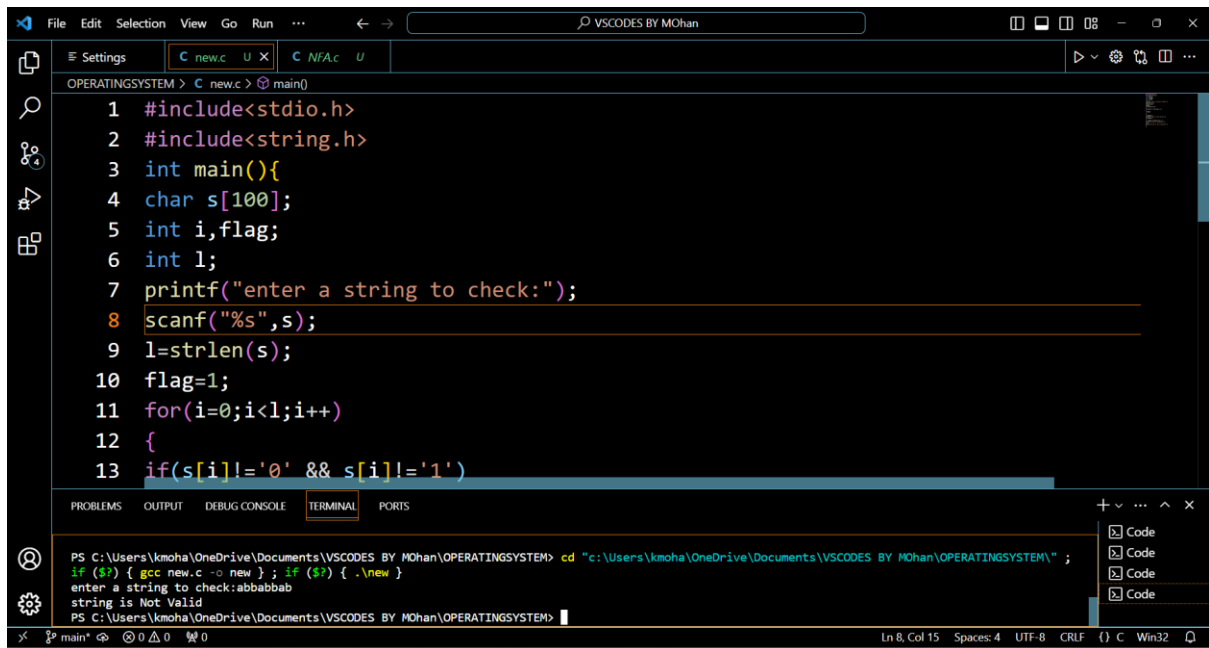
else

printf("string is Not accepted\n");

}

}
```

OUTPUT:



The screenshot shows the Visual Studio Code (VS Code) interface. The editor window displays a C program named `new.c` with the following code:

```
1 #include<stdio.h>
2 #include<string.h>
3 int main(){
4 char s[100];
5 int i,flag;
6 int l;
7 printf("enter a string to check:");
8 scanf("%s",s);
9 l=strlen(s);
10 flag=1;
11 for(i=0;i<l;i++)
12 {
13 if(s[i]!='0' && s[i]!='1')
```

The terminal window at the bottom shows the execution of the program. The prompt is `PS C:\Users\kmoha\OneDrive\Documents\VS_CODES BY MOhan\OPERATINGSYSTEM>`. The user enters `cd "c:\Users\kmoha\OneDrive\Documents\VS_CODES BY MOhan\OPERATINGSYSTEM\" ;` and then `if ($?) { gcc new.c -o new } ; if ($?) { .\new } ;`. The program prompts `enter a string to check:abbbbab`. The user enters `abbbbab`. The program outputs `string is Not Valid`. The terminal prompt is `PS C:\Users\kmoha\OneDrive\Documents\VS_CODES BY MOhan\OPERATINGSYSTEM>`.

}RESULT: Output is successfully obtained.