

Write a C program to check whether a given string belongs to the language defined by a Context Free Grammar (CFG)

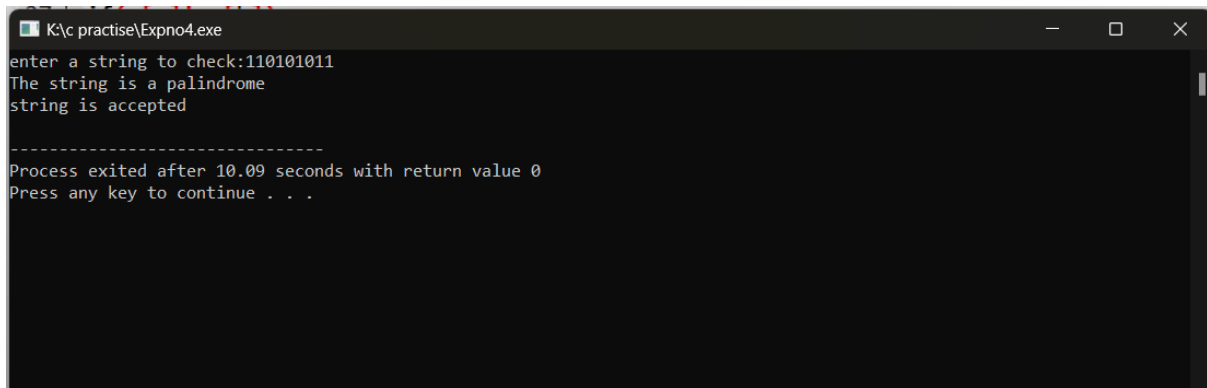
$S \rightarrow 0S0 \mid 1S1 \mid 0 \mid 1 \mid \epsilon$

Program:

```
#include<stdio.h>
#include<string.h>
int main()
{
    char s[100];
    int i,flag,flag1,a,b;
    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)
    {
        flag1=1;
        a=0;b=l-1;
        while(a!=(l/2))
        {
            if(s[a]!=s[b])
            {
                flag1=0;
            }
            a=a+1;
            b=b-1;
        }
        if (flag1==1)
        {
            printf("The string is a palindrome\n");
            printf("string is accepted\n");
        }
        else
        {
            printf("The string is not a palindrome\n");
            printf("string is Not accepted\n");
        }
    }
}
```

```
return 0 ;  
}
```

Output:



```
K:\c practise\Expno4.exe  
enter a string to check:110101011  
The string is a palindrome  
string is accepted  
-----  
Process exited after 10.09 seconds with return value 0  
Press any key to continue . . .
```