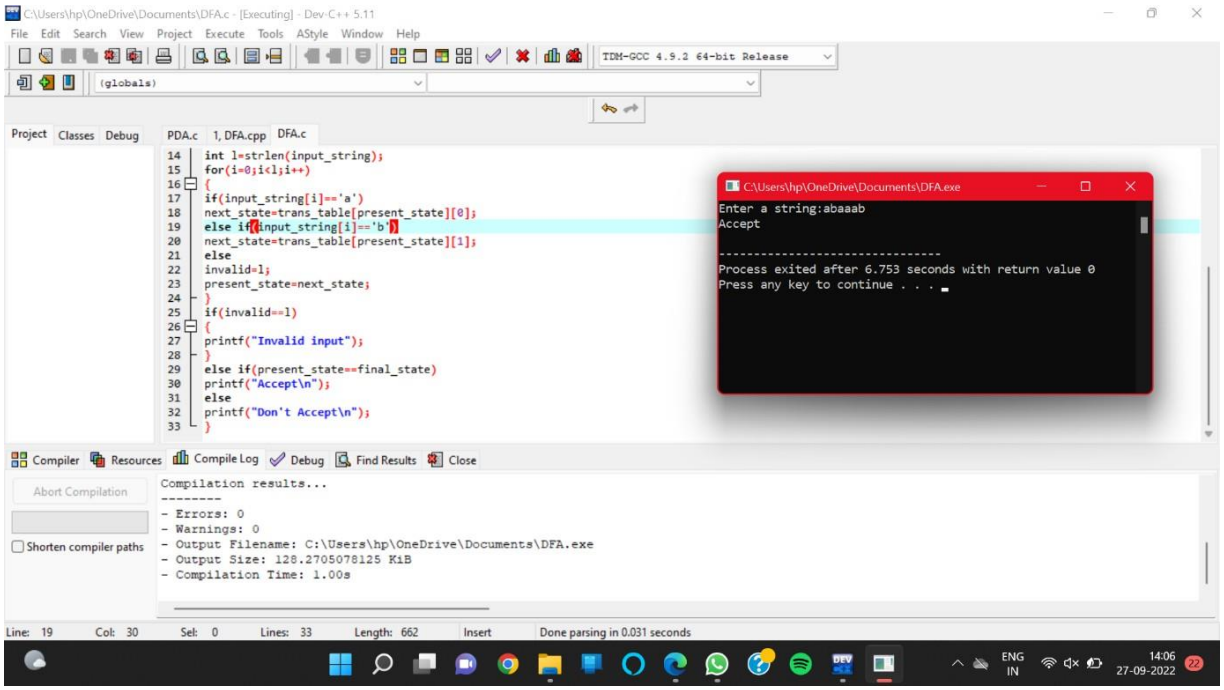
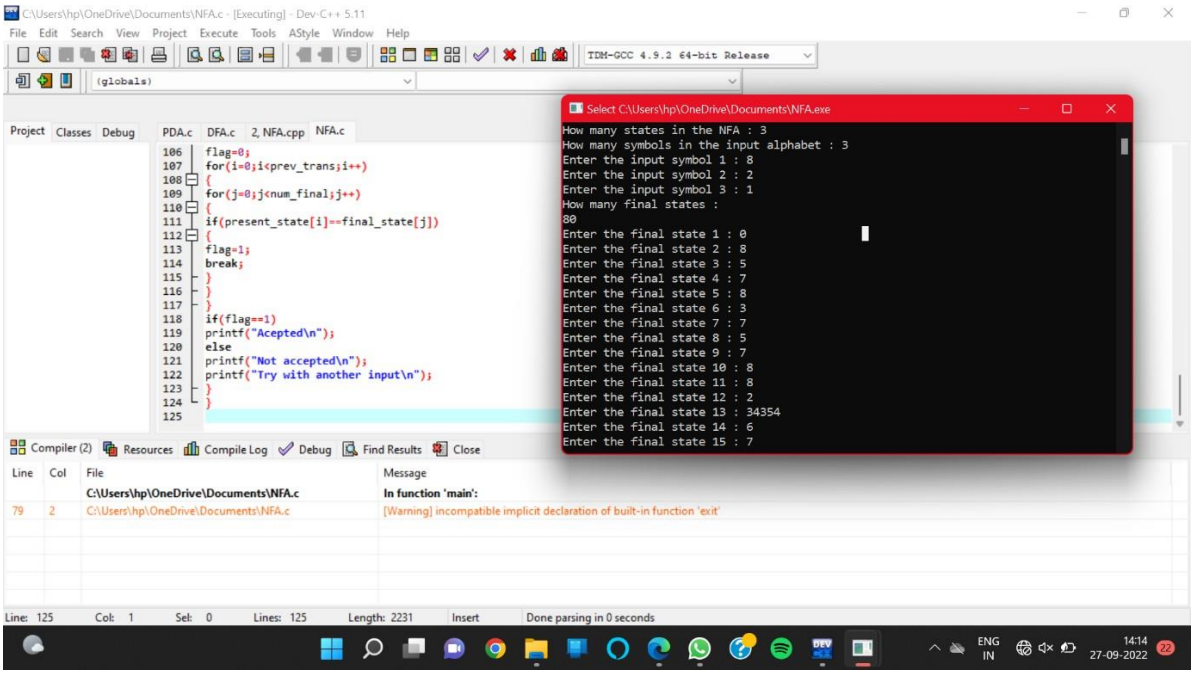
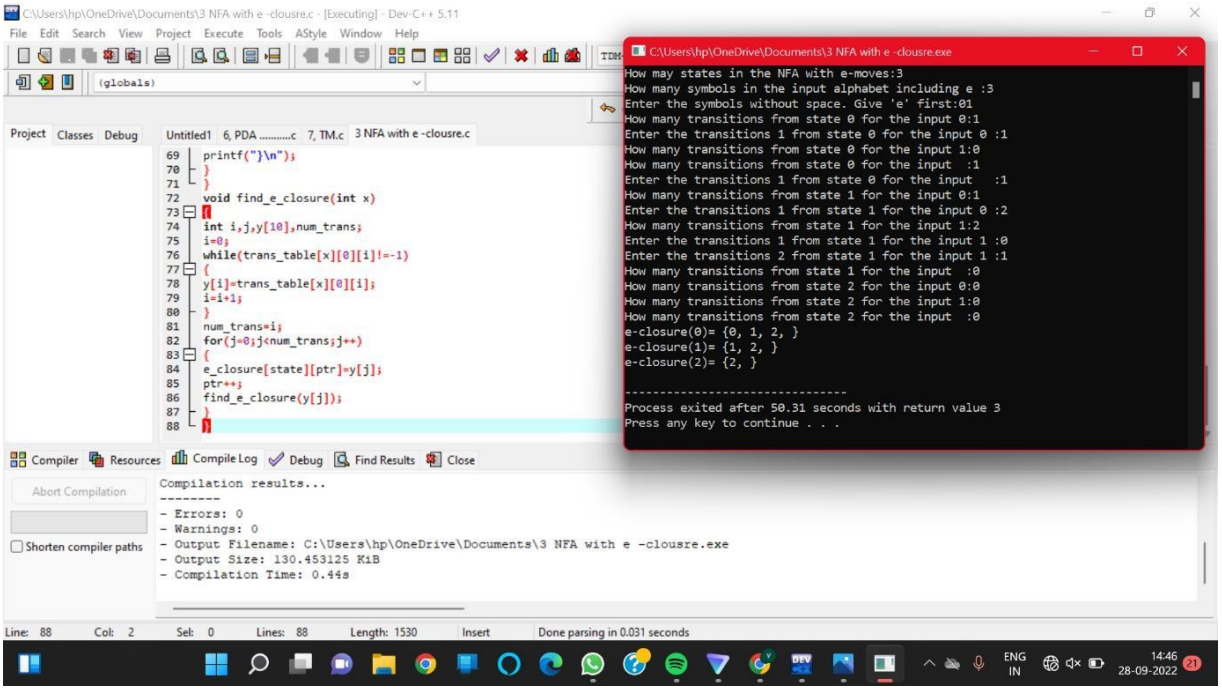
1, write a C program to simulate a deterministic finite automata [DFA] for the given language.



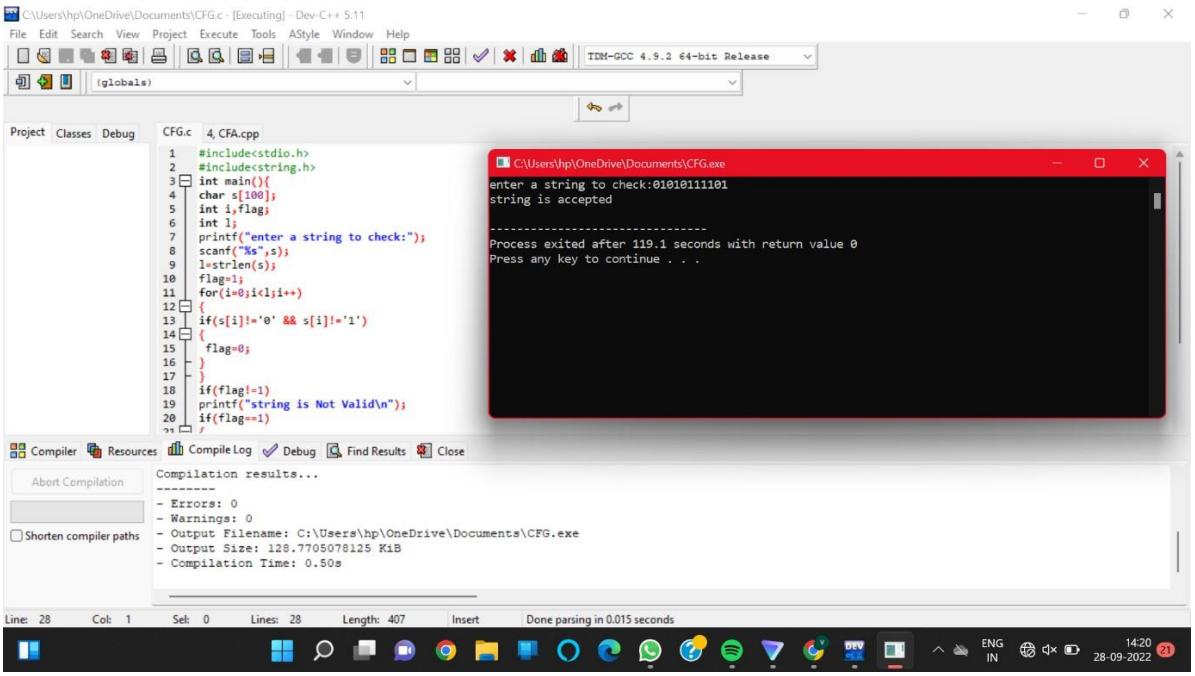
2, write a C program to simulate a non deterministic finite automata [NFA] for the given language.



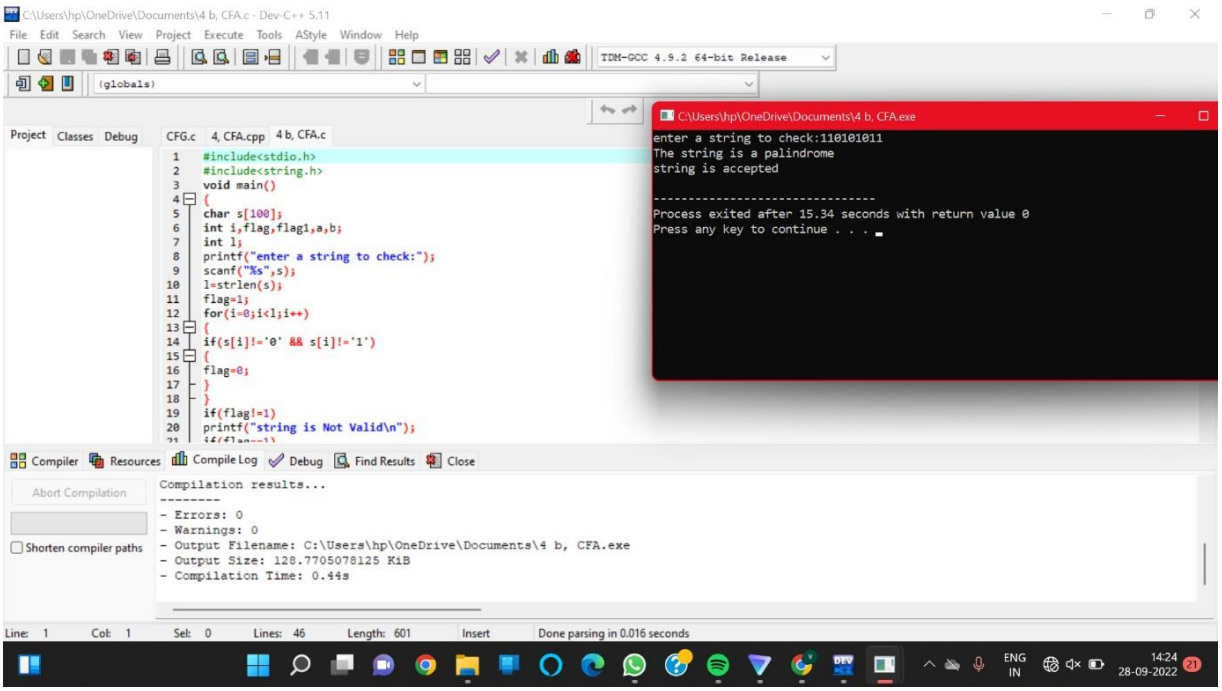
3, write a C program to find e-clouse for all the state in a non- deterministic finite automata [NFA] with e-moves.



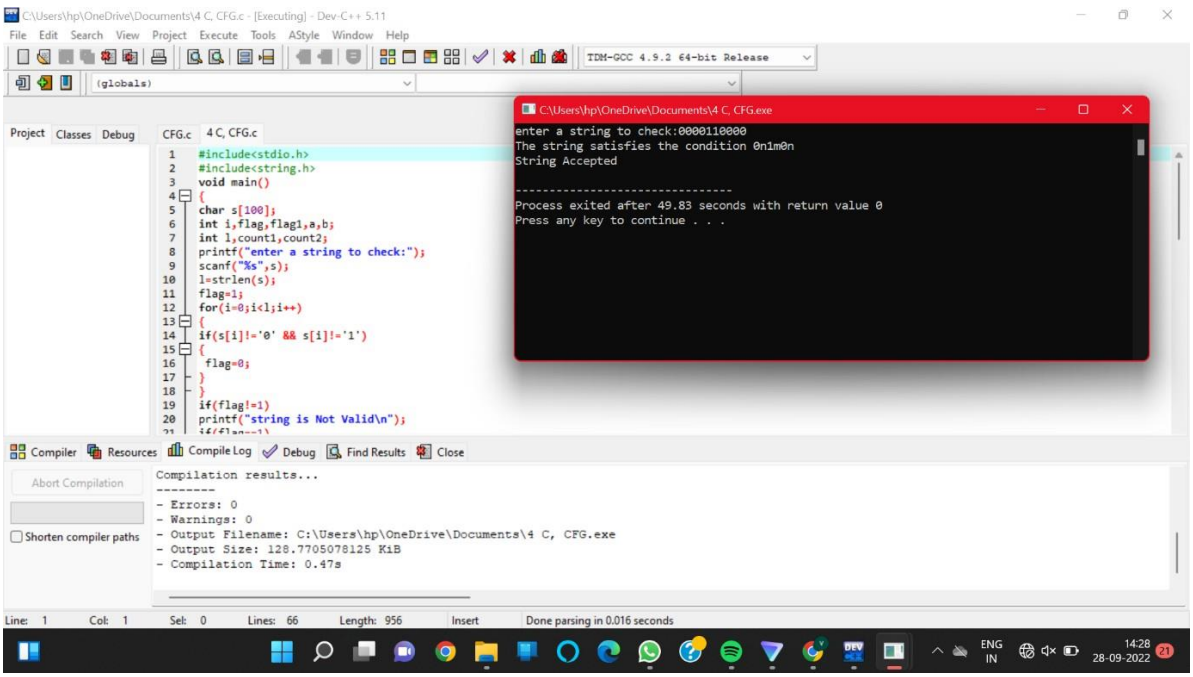
4. Write a C program to check whether a given string belongs to the language defined by a Context Free Grammar (CFG).



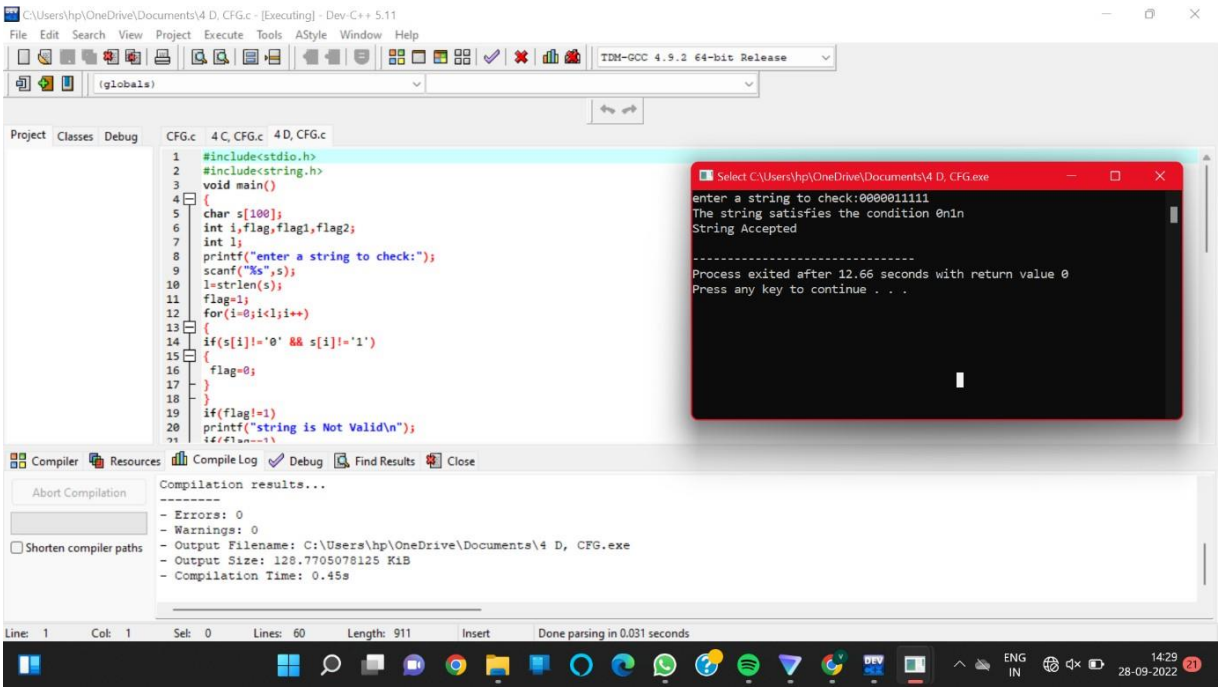
B,


C:\Users\hp\OneDrive\Documents\4 b, CFA.c - Dev-C++ 5.11
File Edit Search View Project Execute Tools AStyle Window Help
TDM-GCC 4.9.2 64-bit Release
(globals)
Project Classes Debug
CFG.c 4, CFA.cpp 4 b, CFA.c
#include<stdio.h>
#include<string.h>
void 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");
C:\Users\hp\OneDrive\Documents\4 b, CFA.exe
enter a string to check:110101011
The string is a palindrome
string is accepted
Process exited after 15.34 seconds with return value 0
Press any key to continue . . .
Compiler Resources Compile Log Debug Find Results Close
Abort Compilation
Shorten compiler paths
Compilation results...
- Errors: 0
- Warnings: 0
- Output Filename: C:\Users\hp\OneDrive\Documents\4 b, CFA.exe
- Output Size: 128.7705078125 KiB
- Compilation Time: 0.44s
Line: 1 Col: 1 Sel: 0 Lines: 46 Length: 601 Insert Done parsing in 0.016 seconds
ENG IN 14:24 28-09-2022

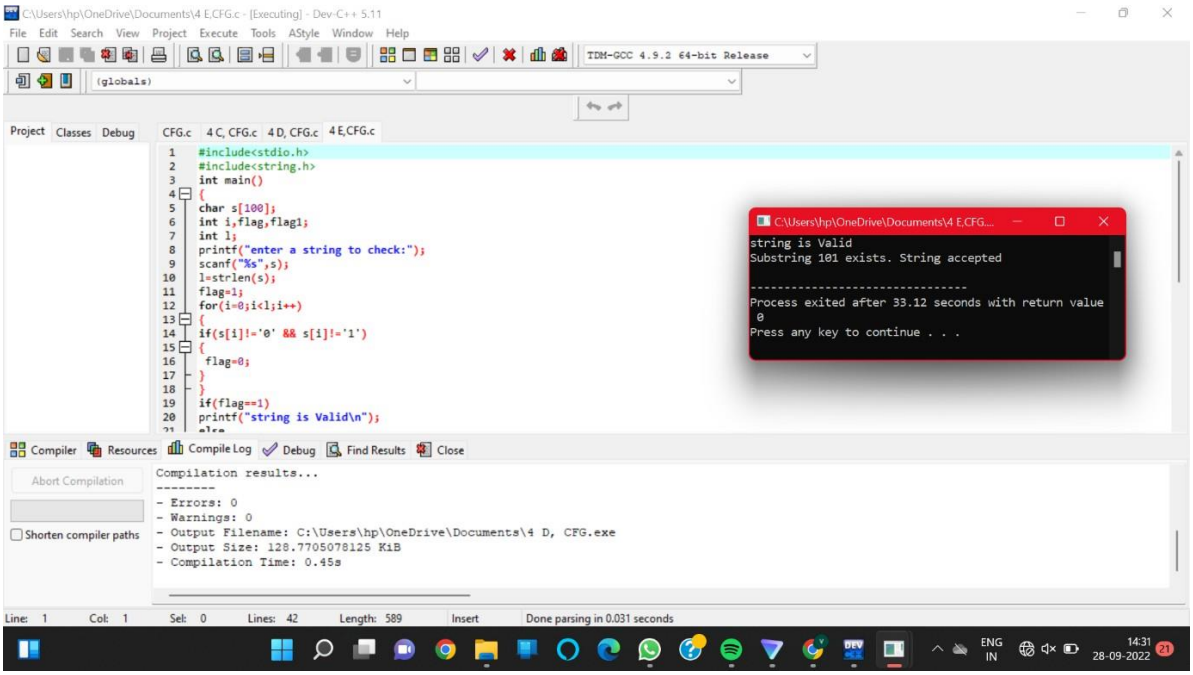
C,


C:\Users\hp\OneDrive\Documents\4 C, CFG.c - [Executing] - Dev-C++ 5.11
File Edit Search View Project Execute Tools AStyle Window Help
TDM-GCC 4.9.2 64-bit Release
(globals)
Project Classes Debug
CFG.c 4 C, CFG.c
#include<stdio.h>
#include<string.h>
void main()
{
char s[100];
int i,flag,flag1,a,b;
int l,count1,count2;
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");
C:\Users\hp\OneDrive\Documents\4 C, CFG.exe
enter a string to check:0000110000
The string satisfies the condition 0n1m0n
String Accepted
Process exited after 49.83 seconds with return value 0
Press any key to continue . . .
Compiler Resources Compile Log Debug Find Results Close
Abort Compilation
Shorten compiler paths
Compilation results...
- Errors: 0
- Warnings: 0
- Output Filename: C:\Users\hp\OneDrive\Documents\4 C, CFG.exe
- Output Size: 128.7705078125 KiB
- Compilation Time: 0.47s
Line: 1 Col: 1 Sel: 0 Lines: 66 Length: 956 Insert Done parsing in 0.016 seconds
ENG IN 14:28 28-09-2022

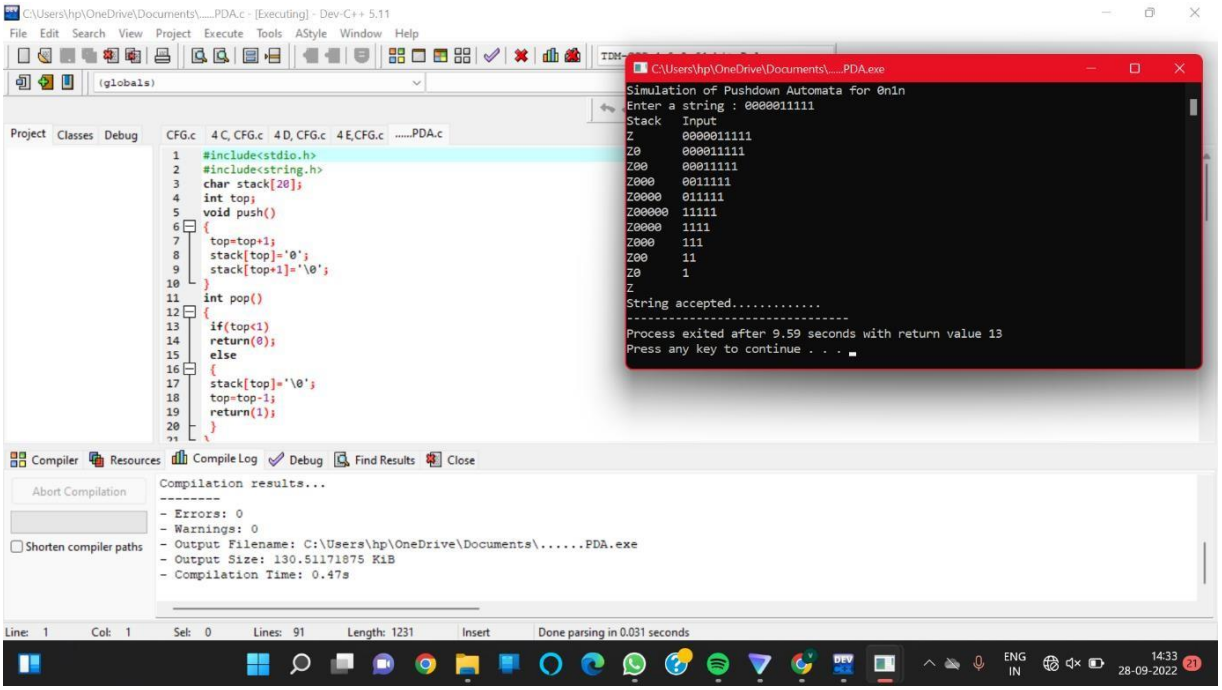
D,


C:\Users\hp\OneDrive\Documents\4 D, CFG.c - [Executing] - Dev-C++ 5.11
File Edit Search View Project Execute Tools AStyle Window Help
TDM-GCC 4.9.2 64-bit Release
(globals)
Project Classes Debug
CFG.c 4 C, CFG.c 4 D, CFG.c
#include<stdio.h>
#include<string.h>
void main()
{
char s[100];
int i,flag,flag1,flag2;
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");
Select C:\Users\hp\OneDrive\Documents\4 D, CFG.exe
enter a string to check:0000011111
The string satisfies the condition 0n1n
String Accepted
Process exited after 12.66 seconds with return value 0
Press any key to continue . . .
Compiler Resources Compile Log Debug Find Results Close
Abort Compilation
Shorten compiler paths
Compilation results...
- Errors: 0
- Warnings: 0
- Output Filename: C:\Users\hp\OneDrive\Documents\4 D, CFG.exe
- Output Size: 128.7705078125 KiB
- Compilation Time: 0.45s
Line: 1 Col: 1 Sel: 0 Lines: 60 Length: 911 Insert Done parsing in 0.031 seconds
ENG IN 14:29 28-09-2022

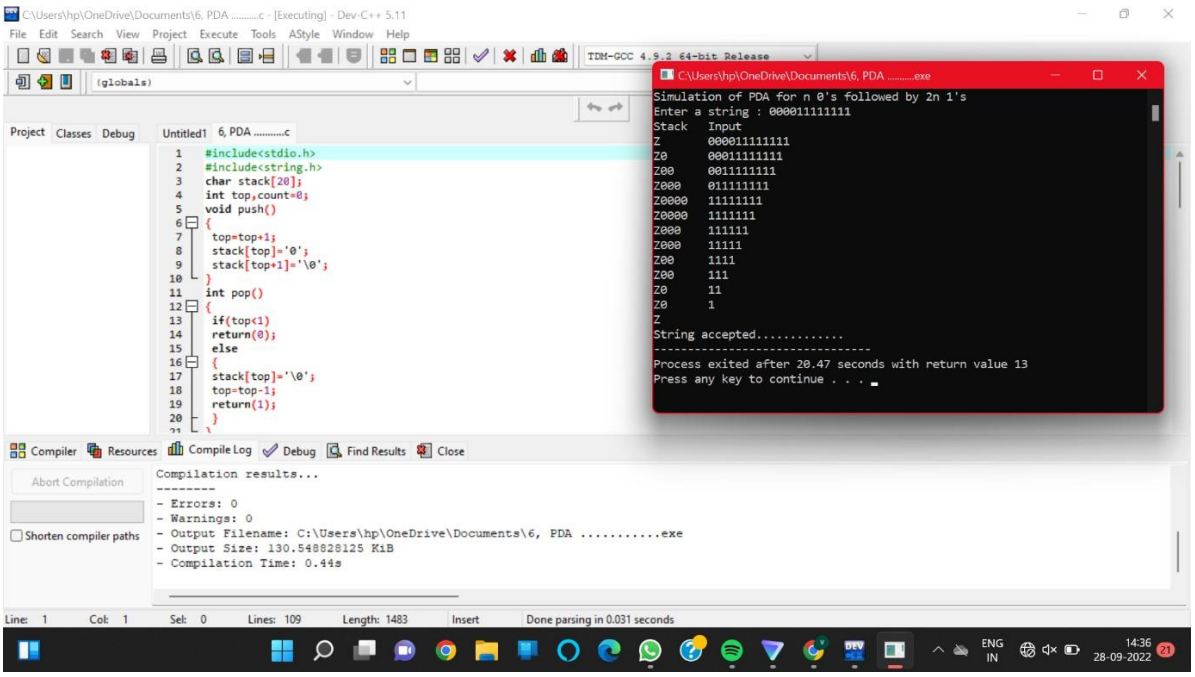
E,


C:\Users\hp\OneDrive\Documents\4 E,CFG.c - [Executing] - Dev-C++ 5.11
File Edit Search View Project Execute Tools AStyle Window Help
TDM-GCC 4.9.2 64-bit Release
(globals)
Project Classes Debug
CFG.c 4 C, CFG.c 4 D, CFG.c 4 E,CFG.c
#include<stdio.h>
#include<string.h>
int main()
{
char s[100];
int i,flag,flag1;
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 Valid\n");
C:\Users\hp\OneDrive\Documents\4 E,CFG...
string is Valid
Substring 101 exists. String accepted
Process exited after 33.12 seconds with return value 0
Press any key to continue . . .
Compiler Resources Compile Log Debug Find Results Close
Abort Compilation
Shorten compiler paths
Compilation results...
- Errors: 0
- Warnings: 0
- Output Filename: C:\Users\hp\OneDrive\Documents\4 D, CFG.exe
- Output Size: 128.7705078125 KiB
- Compilation Time: 0.45s
Line: 1 Col: 1 Sel: 0 Lines: 42 Length: 589 Insert Done parsing in 0.031 seconds
ENG IN 14:31 28-09-2022

5. Write a C program to simulate a Push Down Automata (PDA) for the language 0n1n.



6. Write a C program to simulate a Push Down Automata (PDA) for the language anb2n



7. Write a C program to simulate a Turing Machine (TM) for the given language.