Exp. No. 12

Write a C program to construct recursive descent parsing for the given grammar

E → TE’
E’ → +TE’ / ∈
T → FT’
T’ → *FT’ / ∈
F → (E) / id

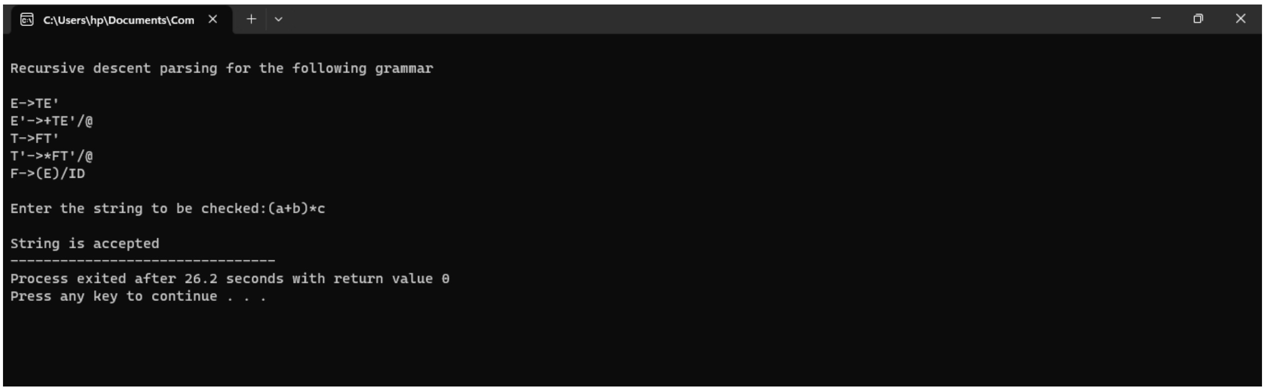
Program:

```
#include<stdio.h>
#include<conio.h>
#include<string.h>
char input[100];
int i,l;
void main()
{
//clrscr();
printf("\nRecursive descent parsing for the following grammar\n"); printf("\nE->TE'\nE'->+TE'/@\nT->FT'\nT'->*FT'/@\nF->(E)/ID\n"); printf("\nEnter the string to be checked:"); gets(input);
if(E())
{
if(input[i+1]=='\0')
printf("\nString is accepted");
else
printf("\nString is not accepted");
}
else
printf("\nString not accepted");
getch();
}
E()
```

```
{
if(T())
{
if(EP())
return(1);
else
return(0);
}
else
return(0);
}
EP()
{
if(input[i]=='+')
{
i++;
if(T())
{
if(EP())
return(1);
else
return(0);
}
else
return(0);
}
else
return(1);
}
T()
{
if(F())
{
if(TP())
return(1);
```

```
else
return(0);
}
else
return(0);
}
TP()
{
if(input[i]=='*')
{
i++;
if(F())
{
if(TP())
return(1);
else
return(0);
}
else
return(0);
}
else
return(1);
}
F()
{
if(input[i]=='(')
{
i++;
if(E())
{
if(input[i]==')')
{
i++;
return(1);
}
else
return(0);
}
else
return(0);
}
else if(input[i]>='a'&&input[i]<='z'||input[i]>='A'&&input[i]<='Z')
{
i++;
return(1);
}
else
return(0);
}
```

OUTPUT:

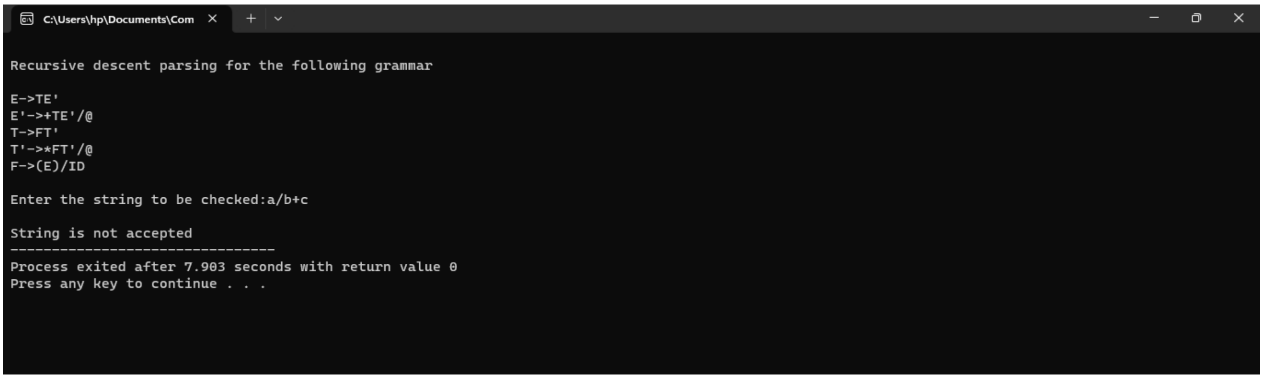


```
Recursive descent parsing for the following grammar

E->TE'
E'->+TE'/@
T->FT'
T'->*FT'/@
F->(E)/ID

Enter the string to be checked:(a+b)*c

String is accepted
--------------------------------
Process exited after 26.2 seconds with return value 0
Press any key to continue . . .
```



```
Recursive descent parsing for the following grammar

E->TE'
E'->+TE'/@
T->FT'
T'->*FT'/@
F->(E)/ID

Enter the string to be checked:a/b+c

String is not accepted
--------------------------------
Process exited after 7.903 seconds with return value 0
Press any key to continue . . .
```