

Assignment 5 : For loop parser

Name : Upendra sunil kadre

Div : C Roll No : 69

Q.Generate For loop parser using Lex and Yacc tools.

Code :

Forloop.l

```
%{  
  
#include<stdio.h>  
  
int yylval;  
  
%}  
  
alpha [A-Za-z]  
digit [0-9]  
  
%%  
  
[\\t \\n]  
  
for          return FOR;  
  
{digit}+    return NUM;  
  
{alpha}({alpha}|{digit})* return ID;  
  
"<="        return LE;  
  
">="        return GE;  
  
"=="        return EQ;  
  
"!="        return NE;  
  
"||"        return OR;  
  
"&&"        return AND;  
  
.           return yytext[0];  
  
%%
```

Forloop.y

```
%{  
  
#include <stdio.h>  
  
#include <stdlib.h>  
  
%}
```

%token ID NUM FOR LE GE EQ NE OR AND

%right "="

%left OR AND

%left '>' '<' LE GE EQ NE

%left '+' '-'

%left '*' '/'

%right UMINUS

%left '!'

%%

S : ST {printf("Input accepted\n"); exit(0);}

ST : FOR '(' E ';' E2 ';' E ')' DEF

;

DEF : '{' BODY '}'

| E ';'

| ST

|

;

BODY : BODY BODY

| E ';'

| ST

|

;

E : ID '=' E

| E '+' E

| E '-' E

| E '*' E

| E '/' E

| E '<' E

```

| E '>' E
| E LE E
| E GE E
| E EQ E
| E NE E
| E OR E
| E AND E
| E '+' '+'
| E '-' '-'
| ID
| NUM
;

```

```

E2      : E '<' E
        | E '>' E
        | E LE E
        | E GE E
        | E EQ E
        | E NE E
        | E OR E
        | E AND E
;

```

```
%%
```

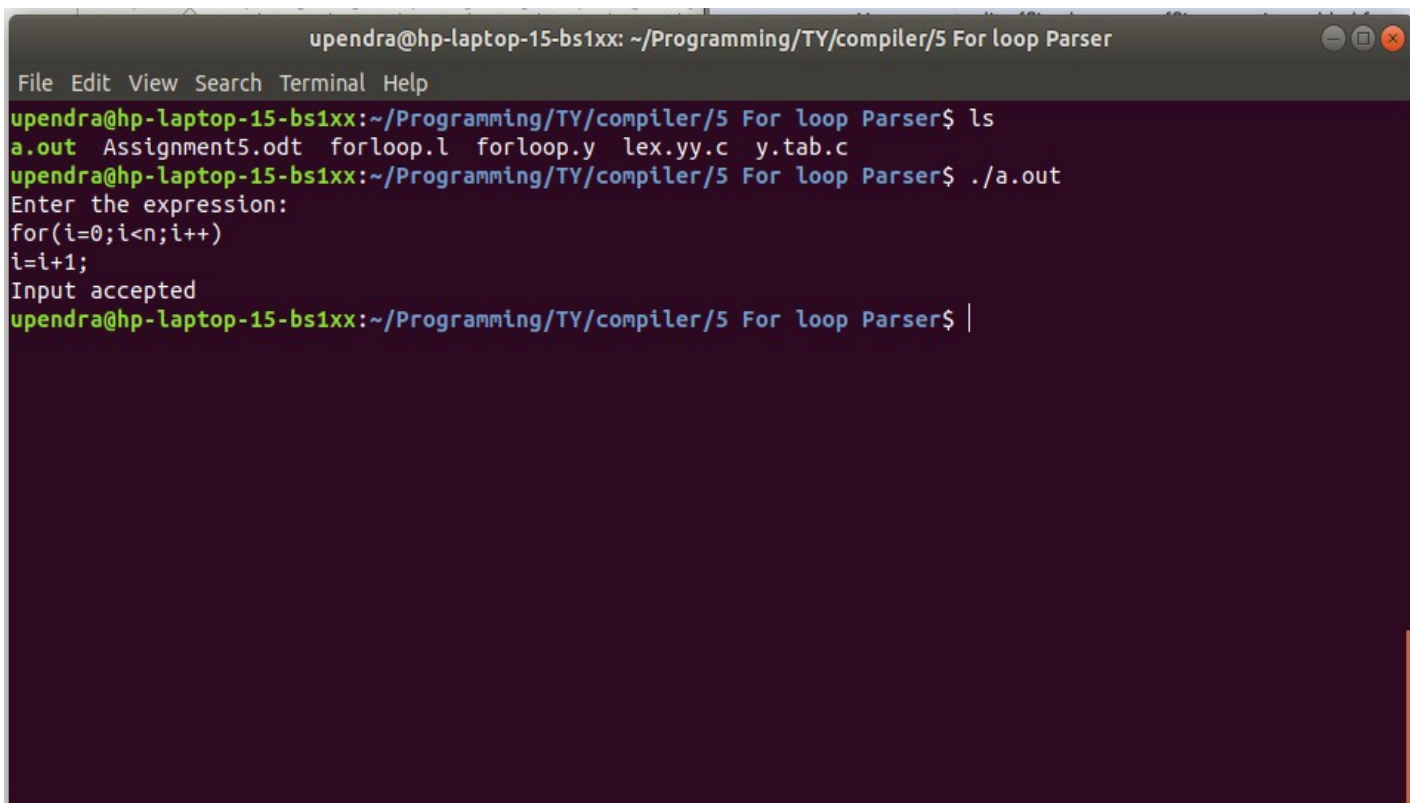
```
#include "lex.yy.c"
```

```

main() {
    printf("Enter the expression:\n");
    yyparse();
}

```

Output :



```
upendra@hp-laptop-15-bs1xx: ~/Programming/TY/compiler/5 For loop Parser
File Edit View Search Terminal Help
upendra@hp-laptop-15-bs1xx:~/Programming/TY/compiler/5 For loop Parser$ ls
a.out Assignment5.odt forloop.l forloop.y lex.yy.c y.tab.c
upendra@hp-laptop-15-bs1xx:~/Programming/TY/compiler/5 For loop Parser$ ./a.out
Enter the expression:
for(i=0;i<n;i++)
i=i+1;
Input accepted
upendra@hp-laptop-15-bs1xx:~/Programming/TY/compiler/5 For loop Parser$ |
```