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CD Assignment-5

Design a YACC and corresponding LEX specification to check the syntax of **if** and **if .. else** statement of C language. Consider Assignment statement/s in the body of if and else part. Detect at least one syntactic error. Upload a single file with input , output and YACC and LEX specification code.

OUTPUT:

```
D:\SEM VI\Assignments\CD\Ass5>a.exe

Enter if else statement:

if(a>0)
{
a=1;
b=1;
}
else
{
c=1;
d=1;
}

parsing successful

D:\SEM VI\Assignments\CD\Ass5>a.exe

Enter if else statement:

if(a>0)
else
{
a=1;
b=1;
}

parsing not succssful...if body missing
```

LEX CODE:

```
%option noyywrap
%{
#include"ifelse.tab.h"
#include<stdio.h>
#include<stdlib.h>
%}
%%

[ \t\n]   ;
if        return IF;
else      return ELSE;
[a-zA-Z][_a-zA-Z0-9]* return ID;
[0-9]+   return NUMBER;
"&&"     return AND;
"||"     return OR;
">"      return GT;
"<"      return LT;
"=="     return EQ;
"!="     return NE;
">="     return GE;
"<="     return LE;
"="      return EQU;
";"      return SC;
"{"      return OP;
"}"      return CP;
"("      return OB;
")"      return CB;

%%
```

YACC CODE:

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

%token NUMBER ID IF ELSE AND OR LT GT LE GE EQ NE EQU SC OB CB OP CP
%%

if:   IF OB cond CB body ELSE body { printf("\nparsing successful\n"); exit(0); }|
      IF OB cond CB ELSE body { printf("\nparsing not succssful...if body missing\n"); exit(0); };
body:   OP stmts CP |
        stmt SC ;
stmts:stmt SC stmts |
        stmt SC ;
stmt:   ID EQU f;
cond:   scond AND cond |
        scond OR cond |
        scond ;
scond:f relop f ;
f:      ID |
        NUMBER;
relop:LT | GT | LE | GE | EQ | NE;


%%

void yyerror(const char *str) {
        printf("\nError\n");
        exit(0);
}
```

```c
int main() {

    printf("\nEnter if else statement:\n\n");

    yyparse();

}
```