GOA COLLEGE OF ENGINEERING

"Bhausaheb Bandodkar Technical Education Complex"

Experiment No: 3

Introduction to Yacc Tool

Aim: Write a YACC program to validate syntax of declaration statement for given input.

Theory:

Grammars for yacc are described using a variant of Backus Naur Form (BNF). This technique was pioneered by John Backus and Peter Na ur, and used to describe ALGOL60. A BNF grammar can be used to express context-free languages. Most constructs in modern programming languages can be represented in BNF

Lex Program:

```
%{
#include <stdlib.h>
void yyerror(char *);
#include "y.tab.h"
%}

%%
"int" {
            return INT;
      }
"float" {
            return FLOAT;
      }
"char" {
            return CHAR;
      }
[,;]   {
            return *yytext;
      }
[ \t\n]+ ;
[a-zA-Z_][a-zA-Z0-9_]* {return ID;}
. {printf("\n\nlex err");}

%%

int yywrap(void) {
   return 1;
}
```

Yacc Program:

```
%{
int yylex(void);
void yyerror(char *);
```

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

%token INT FLOAT CHAR ID

%%
program:
        program STATEMENT       { printf("Valid Expression \n"); }
        |
        ;

STATEMENT:
        DATATYPE VARLIST ';'
        ;

DATATYPE:
        INT
        |FLOAT
        |CHAR
        ;

VARLIST:
        ID
        |ID ',' VARLIST
        ;


%%

void yyerror(char *s) {
   fprintf(stderr, "%s\n", s);
    //return 0;
}

int main(void) {
    yyparse();
    return 0;
}
```

Conclusion:

The yacc program to validate syntax of declaration statement has been successfully executed.