

Ex No: 6

Date:

RECOGNIZE A VALID VARIABLE WITH LETTERS AND DIGITS USING LEX AND YACC

AIM:

To recognize a valid variable which starts with a letter followed by any number of letters or digits.

ALGORITHM:

- Define lexical rules in variable.l with regex to match valid variables: start with a letter, followed by letters or digits. Tokenize input, distinguishing letters and digits.
- Use lexer (variable.l) to tokenize input into meaningful units like letters and digits.
- Implement grammar rules in parser (variable.y) for recognizing valid variable names using context-free grammar. Incorporate lexer tokens into parsing.
- In parser, implement error handling to detect invalid variable names. Set a flag (e.g., valid) to mark invalid identifiers.
- Check validity post-parsing; if flag remains true, indicate valid identifier. Otherwise, display message for invalid input.

PROGRAM:

variable.l:

```
%{
    #include "y.tab.h"
}%
%%
[a-zA-Z_][a-zA-Z_0-9]* return letter;
[0-9]          return digit;
.              return yytext[0];
\n            return 0;
%%
int yywrap()
{
    return 1;
}
```

variable.y:

```
%{
    #include <stdio.h>
    int valid=1;
}%
```

```

%token digit letter
%%
start : letter s
      : letter s
        | digit s ;

%%
int yyerror()
{
    printf("\nIts not a identifier!\n");
    valid=0;
    return 0;
}
int main() {
    printf("\nEnter a name to test for an identifier: ");
    yyparse();
    if(valid) {
        printf("\nIt is a identifier!\n");
    } }

```

OUTPUT:

```

syntax error
[root@localhost student]# yacc -d valid306.y
[root@localhost student]# cc y.tab.c
valid306.y:20:1: warning: return type defaults to 'int' [-Wimplicit-int]
yylex(){
^~~~~~
valid306.y:29:1: warning: return type defaults to 'int' [-Wimplicit-int]
yyerror(char *s){
^~~~~~
valid306.y:33:1: warning: return type defaults to 'int' [-Wimplicit-int]
main(){
^~~~~
[root@localhost student]# ./a.out
Enter a variable : th
accepted
[root@localhost student]# ./a.out
Enter a variable : 63
syntax error

```

RESULT: