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:

Lex (exp6.l):

- 1. Recognizes letters, digits, any single character, and newline.
- 2. Returns tokens for letters, digits, and single characters.
- 3. Indicates the end of input with yywrap().

Yacc (exp6.y):

- 1. Includes headers and defines global variables.
- 2. Declares tokens digit and letter.
- 3. Defines grammar rules for identifiers.
- 4. Handles syntax errors with yyerror().
- 5. The main function, obtain the input, parses it, and prints if it's recognized as an identifier.

PROGRAM:

```
exp6.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;
```

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```
%%
int yywrap(){
return 1;
}
exp6.2:
% {
   #include<stdio.h>
   int yylex();
   int yyerror();
   int valid=1;
% }
%token digit letter
%%
start: letter s
s:
    letter s
    | digit s
%%
int yyerror(){
   printf("\nIts not a identifier!\n");
   valid=0;
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```

```
return 0;
}
int main() {
  printf("\nEnter a name to test for an identifier: ");
  yyparse();
  if(valid) {
    printf("\nIt is a identifier!\n");
  } }
OUTPUT:
```

```
(kali@ kali) - [~/Documents/cdlab]
$ vi exp6.y

(kali@ kali) - [~/Documents/cdlab]
$ vi exp6.l

(kali@ kali) - [~/Documents/cdlab]
$ lex exp6.l

(kali@ kali) - [~/Documents/cdlab]
$ cc lex.yy.c y.tab.c

(kali@ kali) - [~/Documents/cdlab]
$ ./a.out

Enter a name to test for an identifier: 1variable

Its not a identifier!

(kali@ kali) - [~/Documents/cdlab]
$ ./a.out

Enter a name to test for an identifier: variable

It is a identifier!
```

RESULT:

Thus, a program using lex and yacc tool is implemented to recognize a valid variable which starts with a letter followed by any number of letters or digits.

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