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.y:

```
%{
    #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");
```
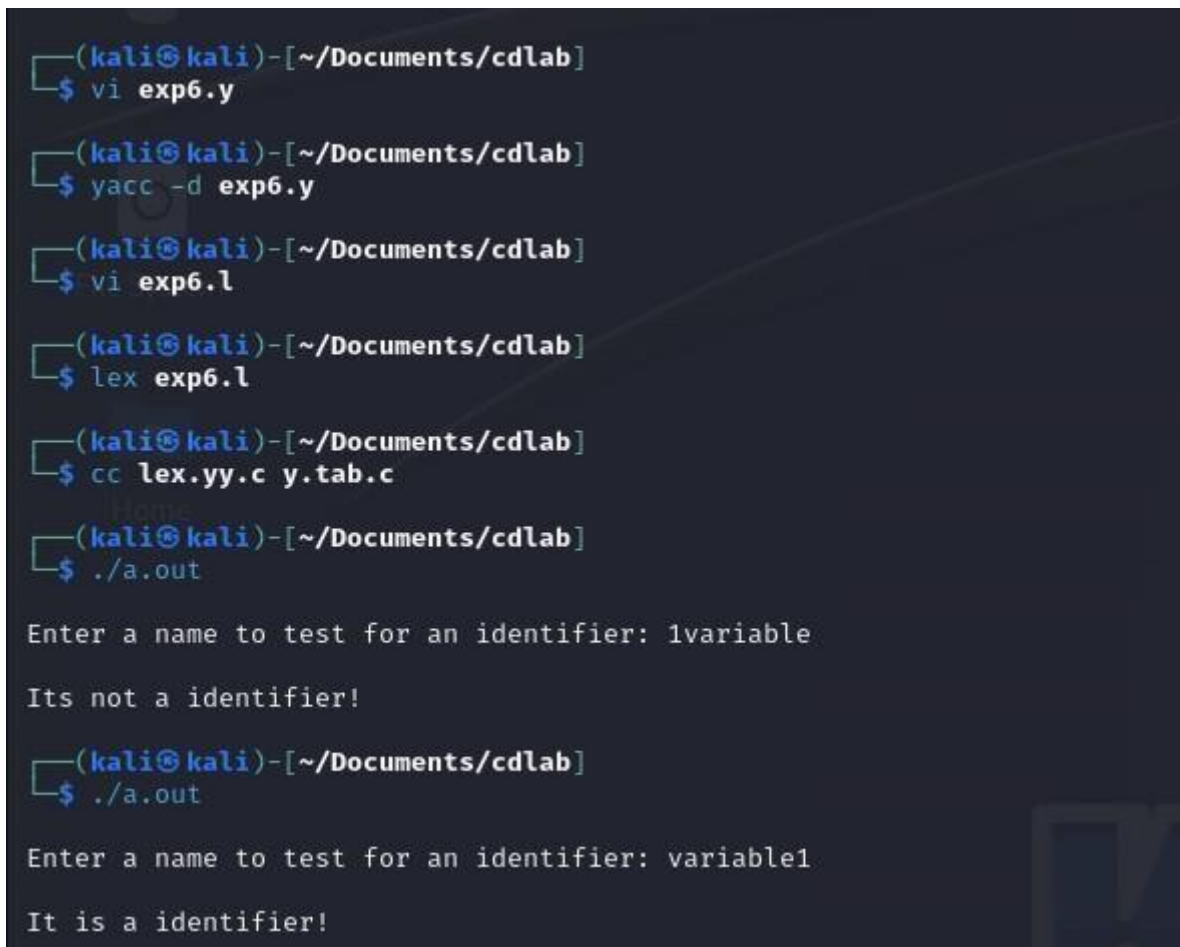
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```
    valid=0;

    return 0;

}
int main() { printf("\nEnter a name to test for an

    identifier: "); yyparse(); if(valid) { printf("\nIt is

    a identifier!\n");

    } }
```

OUTPUT:


```
┌──(kali㊷kali)-[~/Documents/cdlab]
└─$ vi exp6.y

┌──(kali㊷kali)-[~/Documents/cdlab]
└─$ yacc -d exp6.y

┌──(kali㊷kali)-[~/Documents/cdlab]
└─$ vi exp6.l

┌──(kali㊷kali)-[~/Documents/cdlab]
└─$ lex exp6.l

┌──(kali㊷kali)-[~/Documents/cdlab]
└─$ cc lex.yy.c y.tab.c

┌──(kali㊷kali)-[~/Documents/cdlab]
└─$ ./a.out

Enter a name to test for an identifier: 1variable

Its not a identifier!

┌──(kali㊷kali)-[~/Documents/cdlab]
└─$ ./a.out

Enter a name to test for an identifier: variable1

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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