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:

1.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.

2.Use lexer (variable.l) to tokenize input into meaningful units like letters and digits.

3.Implement grammar rules in parser (variable.y) for recognizing valid variable names using context-free grammar. Incorporate lexer tokens into parsing.

4.In parser, implement error handling to detect invalid variable names. Set a flag (e.g., valid) to mark invalid identifiers.

5. 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;

%%
```

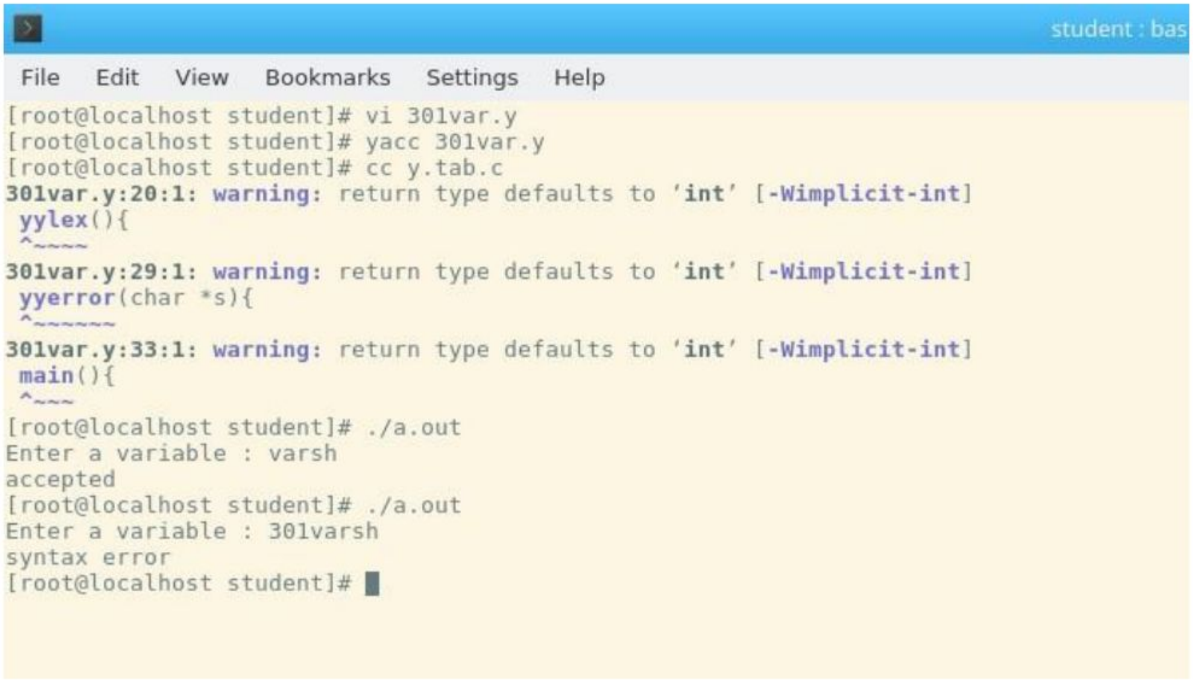
```
int yywrap()

{

return 1;

}
```

variable.y:

```
%{

   #include<stdio.h>

   int valid=1;

%}

%token digit letter

%%

start : letter s

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:



```
[root@localhost student]# vi 301var.y
[root@localhost student]# yacc 301var.y
[root@localhost student]# cc y.tab.c
301var.y:20:1: warning: return type defaults to ‘int’ [-Wimplicit-int]
 yylex(){
 ^~~~~
301var.y:29:1: warning: return type defaults to ‘int’ [-Wimplicit-int]
 yyerror(char *s){
 ^~~~~~~
301var.y:33:1: warning: return type defaults to ‘int’ [-Wimplicit-int]
 main(){
 ^~~~
[root@localhost student]# ./a.out
Enter a variable : varsh
accepted
[root@localhost student]# ./a.out
Enter a variable : 301varsh
syntax error
[root@localhost student]# █
```

RESULT: