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C14-2103058

EXPERIMENT NO.2

Aim : Write a program to implement Code Generation[LEX & YACC]

Code:

```
%{
    // C code to be included in the generated lexer file
%}


%%
/* Flex rules */
[\n] {
    /* When Enter key is pressed, display the following message */
    printf("\n\n Hii..Good Morning....\n");
}
%%


void main() {
    // Call yylex() to start the lexical analysis
    yylex();
}
```

Output:

```
lex first.l
gcc lex.yy.c -lfl
./a.out


Hii..Good Morning.....
```

```
%{
    // C code to be included in the generated lexer file
    void display(int);
    int c=0; // Variable to count characters
    int l=0; // Variable to count lines
    int s=0; // Variable to count tabs
%}

%%
/* Flex rules */
[\n]+ { l++; }   // Increment line count when encountering newline characters
[\t]+ { s++; }   // Increment tab count when encountering tab characters
[^\n\t] { c++; } // Increment character count for non-newline and non-tab characters
%%

int yywrap() { return 1; } // End of input stream

void main() {
    // Prompt the user to enter a sentence
    printf("Enter a sentence: ");

    // Start lexical analysis
    yylex();

    // Display the counts
    printf("\nCharacters: %d\n", c);
    printf("Lines: %d\n", l);
    printf("Tabs: %d\n", s);
}
```

```
Enter a sentencehfkjshdjfahlfjdfhjdhfjsdhfjdhfsdhfhfdshiusdhfirhfrshahhj        h
hl       j        h        h        lj        h        h        hlhd;hg;fghfkgfdjhgfdhgf
dhgfhgjfdhgfdghldfjghjdfghlflg




Characters: 120
Lines: 1
Tabs: 9
```

%{

   // C code to be included in the generated lexer file

   void display(int);
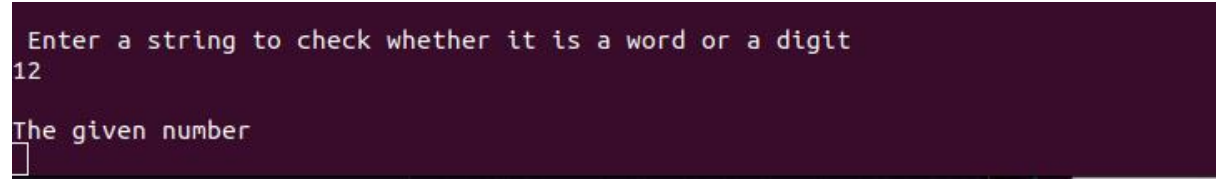
%}

%%

/* Flex rules */

[a-zA-Z]+ {

   // If letters are encountered, set flag to 1

   int flag = 1;

   display(flag);

}

[0-9]+ {

   // If numbers are encountered, set flag to 2

   int flag = 2;

   display(flag);

}

.+ {

   // For any other characters, set flag to 3

   int flag = 3;

   display(flag);

}

%%

```c
void display(int flag) {
    // Display messages based on the flag value
    if (flag == 1)
        printf("\nThe given string is a word.");
    else if (flag == 2)
        printf("\nThe given string is a number.");
    else
        printf("\nThe given string is neither a word nor a number.");
}


void main() {
    printf("Enter a string to check whether it is a word or a number:\n");
    // Start lexical analysis
    yylex();
}
```

```
 Enter a string to check whether it is a word or a digit
12

The given number
```