॥वसुधैव कुटुम्बकम्॥

SYMBIOSIS INSTITUTE OF TECHNOLOGY, PUNE

Symbiosis International (Deemed University)

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Founder: Prof. Dr. S. B. Mujumdar, M. Sc., Ph. D. (Awarded Padma Bhushan and Padma Shri by President of India)

Assignment No. 03

Subject:	Compiler Construction Lab
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Branch	CSE, Batch (2022-26)
Academic Year & Semester	2022-26
Date of Performance	07/08/2025
Title of Assignment:	Count the number of words starting with 'A'.
Practice Questions	1. Implement a LEX program to count the number of words starting with 'A'. 2. Implement a LEX program for words beginning and ending with 'a'.

Source Code	1.
	%{
	int count = 0;
	%}
	
	%%
	
	A[a-zA-Z]* { count++; }
	.|\n { }
	
	%%
	
	int main() {
	yylex();
	printf("Number of words starting with 'A': %d\n", count);

	return 0;
	}
	
	2.
	
	%{
	int count = 0;
	%}
	
	%%
	[Aa][a-zA-Z]*[Aa] { count++; }
	.|\n { }
	%%
	
	int main() {
	yylex();
	printf("Total words beginning and ending with 'a' or 'A': %d\n", count);
	return 0;
	}

Output Screenshot	1.
	`root@onkar:~# nano startsEndsWith.l`
	`root@onkar:~# cat startsEndsWith.l`
	`%{`
	`int count = 0;`
	`%}`
	
	`%%`
	`[Aa][a-zA-Z]* { count++; }`
	`.|\n { }`
	`%%`
	
	`int main() {`
	`yylex();`
	`printf("Total words starting with 'A' or 'a': %d\n", count);`
	`return 0;`
	`}`
	`root@onkar:~# lex startsEndsWith.l`
	`root@onkar:~# gcc lex.yy.c -o count_A -ll`
	`root@onkar:~# ./count_A`
	
	`Good morning happy friendship day`
	`Total words starting with 'A' or 'a': 2`
	`root@onkar:~#`
	
	2.

```
root@onkar:~# cat startWithAndEndWithA.l
%{
int count = 0;
%}

%%
[Aa][a-zA-Z]*[Aa]  { count++; }
.|\n               { }
%%

int main() {
    yylex();
    printf("Total words beginning and ending with 'a' or 'A': %
    return 0;
}
root@onkar:~# lex startWithAndEndWithA.l
root@onkar:~# gcc lex.yy.c -o count_A -ll
root@onkar:~# ./count_A
alpha Beta gamma delta.
Total words beginning and ending with 'a' or 'A': 2
root@onkar:~#
```

Post lab questions

1. Implement a LEX program for finding frequency of a particular word in the input file.

```
%{
int count = 0;
%}

%%
hello   { count++; }
.|\n    { }
%%

int main() {
   yylex();
   printf("Frequency of word 'hello': %d\n", count);
   return 0;
}
```

```
root@onkar:~# touch word_freq.l
root@onkar:~# nano word_freq.l
root@onkar:~# lex word_freq.l
root@onkar:~# gcc lex.yy.c -ll -o word_freq
root@onkar:~# ./word_freq
say hello to the world
Frequency of word 'hello': 1
```

Conclusion

Thus, we learnt to write code for words starting or ending with a particular letter