

Aim: Lex program to convert lower case to upper case and vice versa.

Lex Code:

```
%option noyywrap
%{
#include <stdio.h>
int num = 0, digit = 0, count = 0, pcount = 0, rem, i;
char hexAr[] = {'A', 'B', 'C', 'D', 'E', 'F'};
char result[100];
%}

number [0-9]+

%%

{number} {
num = atoi(yytext);
count = 0;
while (num > 0) {
rem = num % 16;
if (rem > 9) {
result[count] = hexAr[rem % 10];
} else {
result[count] = '0' + rem;
}
count += 1;
num = num / 16;
}

for (i = count - 1; i >= 0; i--) {
printf("%c", result[i]);
}

[.\n] { printf("%c", yytext[0]); }

%%

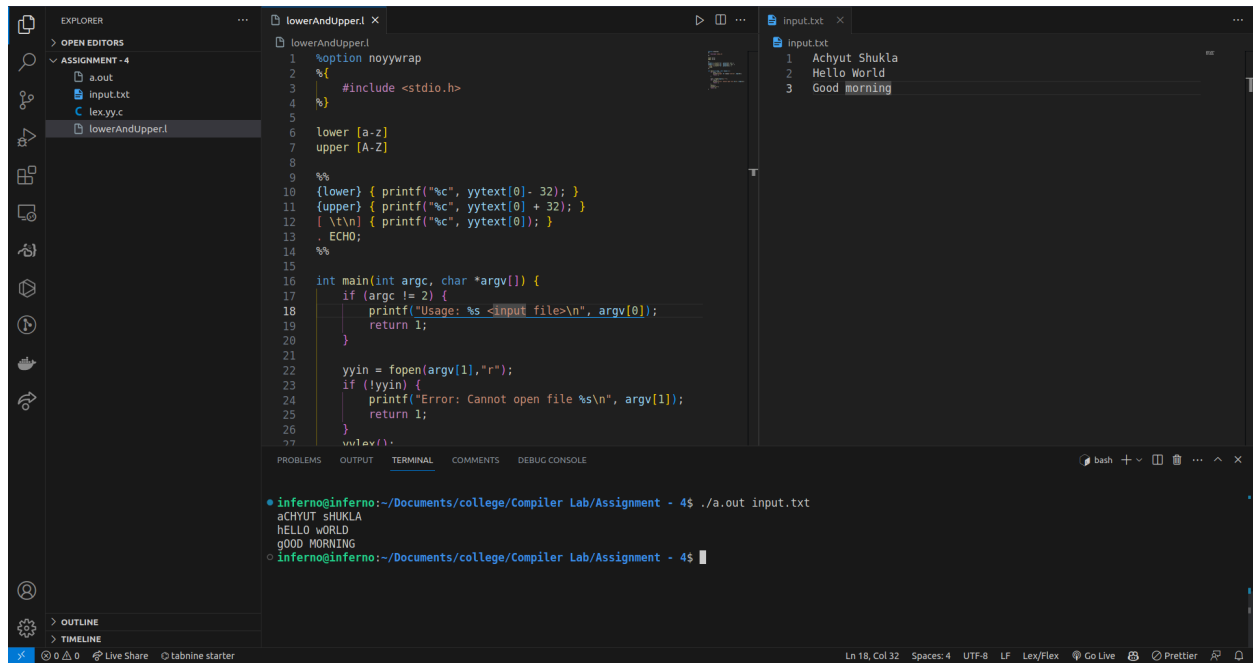
int main(int argc, char* argv[]) {
if (argc != 2) {
```

```
printf("Usage: %s <input file>\n", argv[0]);  
return 1;  
}  
  
yyin = fopen(argv[1], "r");  
if (!yyin) {  
printf("Error: Cannot open file %s\n", argv[1]);  
return 1;  
}  
yylex();  
return 0;  
}
```

Input:

15
9
10
8
4
10236
235
1204000
2360
2597884
7854

Output:



The screenshot shows a Visual Studio Code editor with three open files: `lowerAndUpper1.c`, `input.txt`, and `input.txt`. The `lowerAndUpper1.c` file contains a C program that reads from `input.txt` and prints the lowercase and uppercase versions of the text. The `input.txt` file contains the text: `1 Achyut Shukla`, `2 Hello World`, and `3 Good morning`. The terminal output shows the program's execution: `inferno@inferno:~/Documents/college/Compiler Lab/Assignment - 4$./a.out input.txt`, followed by the output: `aCHYUT sHUKLA`, `HELLO WORLD`, and `GOOD MORNING`.

```
1  %option noyywrap
2  %{
3      #include <stdio.h>
4  %}
5
6  lower [a-z]
7  upper [A-Z]
8
9  %%
10 {lower} { printf("%c", yytext[0] - 32); }
11 {upper} { printf("%c", yytext[0] + 32); }
12 [ \t\n] { printf("%c", yytext[0]); }
13 . ECHO;
14 %%
15
16 int main(int argc, char *argv[]) {
17     if (argc != 2) {
18         printf("Usage: %s <input file>\n", argv[0]);
19         return 1;
20     }
21
22     yyin = fopen(argv[1], "r");
23     if (!yyin) {
24         printf("Error: Cannot open file %s\n", argv[1]);
25         return 1;
26     }
27     yylex();
28 }
```

```
1 Achyut Shukla
2 Hello World
3 Good morning
```

```
inferno@inferno:~/Documents/college/Compiler Lab/Assignment - 4$ ./a.out input.txt
aCHYUT sHUKLA
HELLO WORLD
GOOD MORNING
inferno@inferno:~/Documents/college/Compiler Lab/Assignment - 4$
```