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(2021-25)

Practical No. 4

* Title: Conversion of lowercase to uppercase and vice versa.

* Objectives: Students will learn and implement
→ Scanner for lowercase to uppercase conversion.
→ ASCII ranges to be included in the LEX program for the said conversion

* Description:

i) Create a LEX file first.

ii) Write RE's for lowercase, uppercase and spaces.

iii) In Rules section, write rules for conversion of lowercase to uppercase, vice versa using ASCII ranges.

iv) In Rules, section emit spaces and other non-required details as it is.

v) In the main body call `yyllex()` and create the scanner for required conversion.

* Conclusion: Thus, we have implemented a Scanner for the lowercase to uppercase conversion and vice versa.

Code:

```
%{
#include <stdio.h>
#include <ctype.h>
}%

alpha [a-zA-Z]
digit [0-9]
space [ \t\n]

%%
{alpha} {
    // Convert lowercase to uppercase and uppercase to lowercase
    if (islower(yytext[0])) {
        printf("%c", toupper(yytext[0]));
    } else {
        printf("%c", tolower(yytext[0]));
    }
}

{space} {
    // Print spaces as they are
    printf("%s", yytext);
}

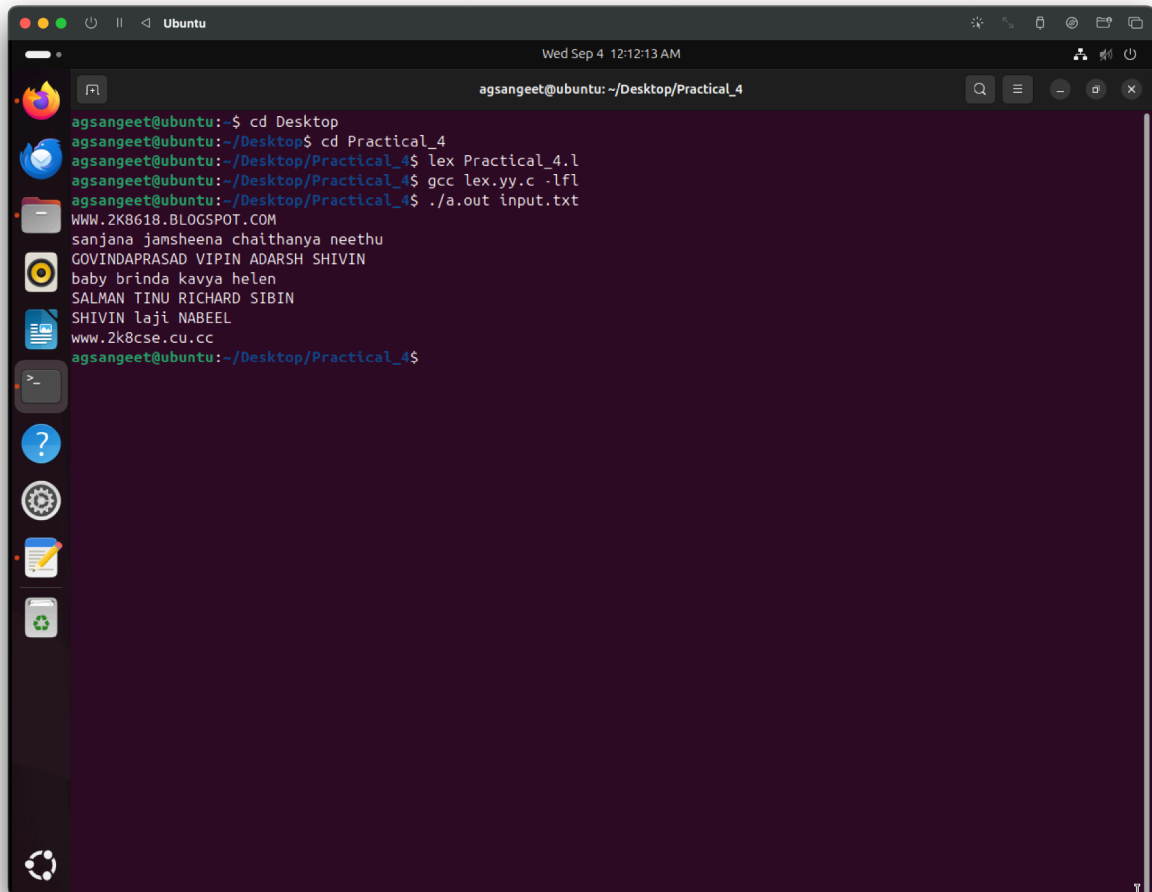
{digit} {
    // Print digits as they are
    printf("%s", yytext);
}

%%

int main(int argc, char **argv) {
    if (argc > 1) {
        FILE *file = fopen(argv[1], "r");
        if (file) {
            yyin = file;
            yylex();
            fclose(file);
        } else {
            perror("fopen");
            return 1;
        }
    }
}
```

```
    }  
  } else {  
    fprintf(stderr, "Usage: %s <filename>\n", argv[0]);  
    return 1;  
  }  
  return 0;  
}  
  
int yywrap() {  
  return 1;  
}
```

Output:



```
agsangeet@ubuntu: ~/Desktop/Practical_4  
Wed Sep 4 12:12:13 AM  
agsangeet@ubuntu:~$ cd Desktop  
agsangeet@ubuntu:~/Desktop$ cd Practical_4  
agsangeet@ubuntu:~/Desktop/Practical_4$ lex Practical_4.l  
agsangeet@ubuntu:~/Desktop/Practical_4$ gcc lex.yy.c -lfl  
agsangeet@ubuntu:~/Desktop/Practical_4$ ./a.out input.txt  
www.2k8618.BLOGSPOT.COM  
sanjana jamsheena chaithanya neethu  
GOVINDAPRASAD VIPIN ADARSH SHIVIN  
baby brinda kavya helen  
SALMAN TINU RICHARD SIBIN  
SHIVIN laji NABEEL  
www.2k8cse.cu.cc  
agsangeet@ubuntu:~/Desktop/Practical_4$
```