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(2021-25)

### Practical No. 5

\* Title: Conversion of decimal to hexadecimal number in a file.

\* Objectives: Students will learn and implement.

i) LEX as a number conversion utility.

ii) Rules section for such a LEX program.

\* Description:

i) Create a LEX file first.

ii) Do initialization for num, r, digit, count, pcount, i etc.

iii) Write RE for the digit

iv) In rules section, write rules for conversion of a decimal number to a hexadecimal number.

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

vi) In the main body, call yylex() and execute the scanner for required conversion.

\* Conclusion: Thus we have a scanner for a decimal to hexadecimal ~~convert~~ conversion.

Code:

```
%{
#include <stdio.h>
#include <stdlib.h>

void decimal_to_hexadecimal(int decimal, char *hex) {
    sprintf(hex, "%X", decimal);
}
%}

DIGIT [0-9]
DECIMAL {DIGIT}+
WORD [A-Za-z]+

%%

{DECIMAL} {
    int decimal = atoi(yytext);
    char hex[10];
    decimal_to_hexadecimal(decimal, hex);
    printf("%s", hex); // Print the hexadecimal number
}

{WORD} {
    printf("%s", yytext); // Print the word (text)
}

[ \t\n]+ {
    // Handle whitespace by printing it as is
    printf("%s", yytext);
}

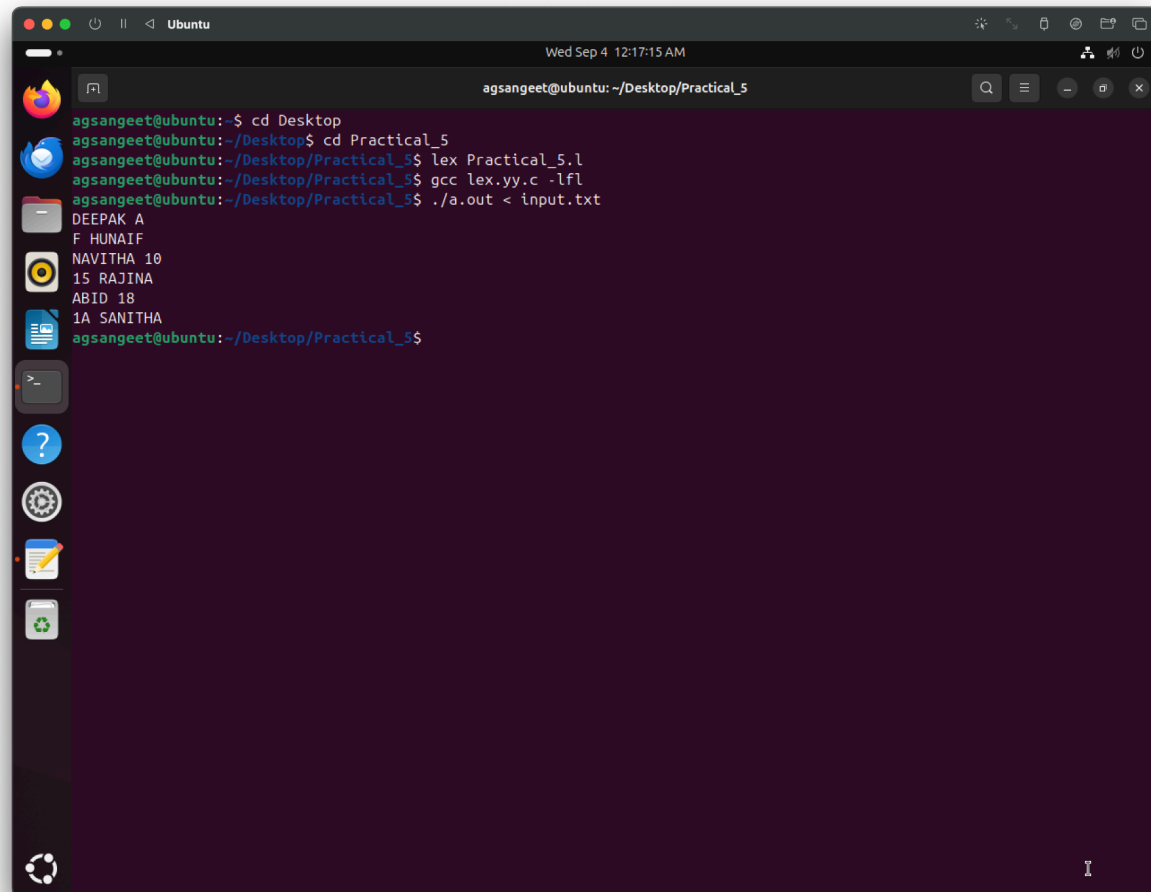
. {
    // Print any other single characters
    printf("%s", yytext);
}

%%

int main() {
    yylex();
}
```

```
    return 0;  
}
```

Output:



```
agsangeet@ubuntu: ~/$ cd Desktop  
agsangeet@ubuntu: ~/Desktop$ cd Practical_5  
agsangeet@ubuntu: ~/Desktop/Practical_5$ lex Practical_5.l  
agsangeet@ubuntu: ~/Desktop/Practical_5$ gcc lex.yy.c -lfl  
agsangeet@ubuntu: ~/Desktop/Practical_5$ ./a.out < input.txt  
DEEPAK A  
F HUNAIF  
NAVITHA 10  
15 RAJINA  
ABID 18  
1A SANITHA  
agsangeet@ubuntu: ~/Desktop/Practical_5$
```