

**National Institute of Technology Surathkal, Mangalore Karnataka
Department of Information Technology**



Lab Assignment :- 02

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Roll Number :- 211IT017

Course :- Information Technology (B.Tech)

Subject :- Automata And Compiler Design (IT250)

**Submitted To —
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Question Number :-1)

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

```
%%
```

```
[0-1]+ {  
    printf("binary \n");  
}  
[0-7]+ {  
    printf("octal\n ");  
}
```

```
[0-9]+ {  
    printf("decimal\n");  
}
```

```
[A-F,0-9,a-f]+ {  
    printf("hexa\n");  
}
```

```
.+ {  
    printf("invalid input\n");  
}
```

```
%%
```

```
int main()  
{  
    yylex();  
    return 0;  
}
```

```
chinnu@LAPTOP-0S1VCA7E: / x + v
chinnu@LAPTOP-0S1VCA7E:/mnt/c/Users/CHIKKERI CHINMAYA/OneDrive - National Institute of Technology Karnataka, Surathkal/Desktop$ lex file.l
chinnu@LAPTOP-0S1VCA7E:/mnt/c/Users/CHIKKERI CHINMAYA/OneDrive - National Institute of Technology Karnataka, Surathkal/Desktop$ cc lex.yy.c -ll
chinnu@LAPTOP-0S1VCA7E:/mnt/c/Users/CHIKKERI CHINMAYA/OneDrive - National Institute of Technology Karnataka, Surathkal/Desktop$ ./a.out
4
octal
01000001 90878 010007 abcz
invalid input

3
octal
klfw 0109 Abcd
invalid input
```

Question Number:- 2)

```
%{
#include <stdio.h>
int exponent_flag = 0; // flag to keep track of whether an exponent is present
int dot_flag = 0; // flag to keep track of whether a dot is present
}%

%%

[-+]?[0-9]+      { printf("positive integer\n"); } // match positive integer
[-+]?[0-9]+\.[0-9]+ { printf("positive real\n"); } // match positive real number
[-+]?[0-9]+\.[0-9]+[Ee][-+]?[0-9]+ { exponent_flag = 1; printf("positive real in negative exponential
form\n"); } // match positive real with exponent form
[-+]?[0-9]+[Ee][-+]?[0-9]+ { exponent_flag = 1; printf("positive integer in exponential form\n"); } //
match positive integer with exponent form
-[-+]?[0-9]+      { printf("negative integer\n"); } // match negative integer
-[-+]?[0-9]+\.[0-9]+ { printf("negative real\n"); } // match negative real number
-[-+]?[0-9]+\.[0-9]+[Ee][-+]?[0-9]+ { exponent_flag = 1; printf("negative real in negative
exponential form\n"); } // match negative real with exponent form
-[-+]?[0-9]+[Ee][-+]?[0-9]+ { exponent_flag = 1; printf("negative integer in exponential form\n"); }
// match negative integer with exponent form
[^0-9\n]          { printf("neither integer nor real\n"); } // match anything that is not a digit or a
newline character

%%

int main(int argc, char **argv) {
    yylex();
    if (exponent_flag == 0) { // no exponent was found
        printf("no exponent present\n");
    }
}
```

```
}  
return 0;  
}
```

```
chinnu@LAPTOP-0S1VCA7E: /  × + v  
chinnu@LAPTOP-0S1VCA7E:/mnt/c/Users/CHIKKERI CHINMAYA/OneDrive - National Institute of Technology Karnataka, Surathkal/Desktop$ lex txt.l  
chinnu@LAPTOP-0S1VCA7E:/mnt/c/Users/CHIKKERI CHINMAYA/OneDrive - National Institute of Technology Karnataka, Surathkal/Desktop$ cc lex.yy.c -ll  
chinnu@LAPTOP-0S1VCA7E:/mnt/c/Users/CHIKKERI CHINMAYA/OneDrive - National Institute of Technology Karnataka, Surathkal/Desktop$ ./a.out  
41  
positive integer  
  
0.10  
positive real  
  
12.2e-3  
positive real in negative exponential form  
  
0.2.3  
positive real  
neither integer nor real  
positive integer  
|
```