

Lab Assignment Test 2

U20CS005

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1. Write a YACC and LEX program for Decimal to Binary Conversion.

LEX File:

```
%{
#include "y.tab.h"
%}
DIGIT    [0-9]
%%
{DIGIT}+ { yylval = atoi(yytext); return NUMBER; }
\n      { return EOL; }
.       { return yytext[0]; }
%%
int yywrap() {
    return 1;
}
```

YACC File:

```
%{
#include <stdio.h>
extern int yylex();
extern int yyerror(const char *msg);
long decimal_to_binary(int);
%}
%token NUMBER EOL
%%
input:
    | input line
    ;
line:
    NUMBER EOL { printf("%d in binary: %ld\n", $1, decimal_to_binary($1)); }
    ;

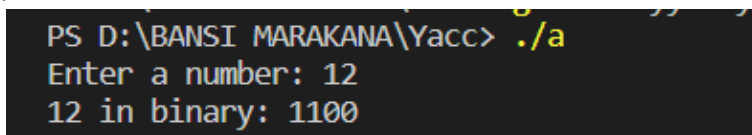
%%
long decimal_to_binary(int decimal) {
    long binary = 0;
    int remainder, i = 1;

    while (decimal != 0) {
        remainder = decimal % 2;
        decimal /= 2;
        binary += remainder * i;
    }
}
```

```

        i *= 10;
    }
    return binary;
}
int yyerror(const char *msg) {
    printf("Error: %s\n", msg);
    return 1;
}
int main() {
    printf("Enter a number: ");
    yyparse();
    return 0;
}

```



```

PS D:\BANSI MARAKANA\Yacc> ./a
Enter a number: 12
12 in binary: 1100

```

2. Write a Lex Program.

Input: 12345678 Output: Even Number-2468, Odd Number-1357

```

%{
#include <stdio.h>
%}

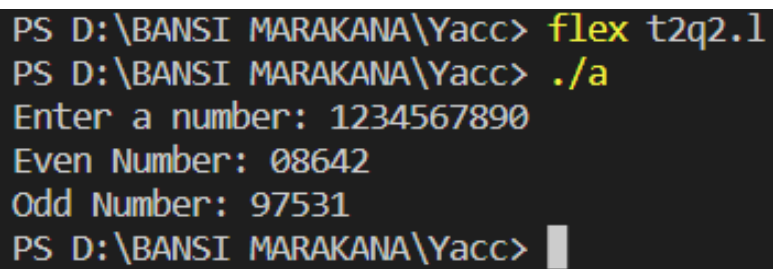
%%
[0-9]+ {
    int num = atoi(yytext);
    printf("Even Number: ");
    while(num > 0) {
        int digit = num % 10;
        if(digit % 2 == 0) {
            printf("%d", digit);
        }
        num /= 10;
    }
    printf("\nOdd Number: ");
    num = atoi(yytext);
    while(num > 0) {
        int digit = num % 10;
        if(digit % 2 != 0) {
            printf("%d", digit);
        }
        num /= 10;
    }
}

```

```
        printf("\n");
    }
\n {return 0;}
%%

int main() {
    printf("Enter a number: ");
    yylex();
    return 0;
}

int yywrap()
{
    return 1;
}
```



A terminal window with a black background and yellow text. The prompt is 'PS D:\BANSI MARAKANA\Yacc>'. The user enters 'flex t2q2.l', followed by './a'. The program prompts 'Enter a number: ' and the user enters '1234567890'. The program outputs 'Even Number: 08642' and 'Odd Number: 97531'. The prompt returns to 'PS D:\BANSI MARAKANA\Yacc>' with a cursor.

```
PS D:\BANSI MARAKANA\Yacc> flex t2q2.l
PS D:\BANSI MARAKANA\Yacc> ./a
Enter a number: 1234567890
Even Number: 08642
Odd Number: 97531
PS D:\BANSI MARAKANA\Yacc> █
```