Objective 1:

```
%{
#include <stdio.h>
%}
%%
[0-9]+   { printf("%s\n", yytext); }  // Match numbers and print them
.        { }  // Ignore non-numeric characters
%%
int main() {
   yylex();
   return 0;
}
int yywrap() {
   return 1;
}
```

```
D:\22DCS100\Sem 6\DLP\Practical\prac4>flex num_extractor
flex: can't open num_extractor

D:\22DCS100\Sem 6\DLP\Practical\prac4>flex num_extractor.l

D:\22DCS100\Sem 6\DLP\Practical\prac4>gcc lex.yy.c -o num_extractor.exe

D:\22DCS100\Sem 6\DLP\Practical\prac4>num_extractor.exe
a1b22c3
1
22
3

power operation -> 12 ** 3 = 1728
12
3
1728

You multiply 804569 with 1 then will be :
804569
1
```

Objective 2

```
D:\22DCS100\Sem 6\DLP\Practical\prac4\Objective2>flex replace.l

D:\22DCS100\Sem 6\DLP\Practical\prac4\Objective2>gcc lex.yy.c -o replace.exe

D:\22DCS100\Sem 6\DLP\Practical\prac4\Objective2>replace.exe
This is charusat.
This is university.
Charusat is in Anand district.
university is in Anand district.
I am doing my BTech from CHARSAT.
I am doing my BTech from CHARSAT.
Charusat , What is charusat?
university , What is university?
Every where it is charusat , charusat and only charusat.
Every where it is university , university and only university.
```

Objective 3

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

int char_count = 0, word_count = 0, line_count = 0;
%}

%%
\n          { line_count++; char_count++; }  // Count newlines and characters
[ \t]+      { char_count += yyleng; }        // Count spaces and tabs
[a-zA-Z0-9\+\=]+ { word_count++; char_count += yyleng; } // Count words and characters
.           { char_count++; }               // Count other characters
%%

int main() {
   yylex();  // Start lexical analysis

   // If there's any input, adjust line_count for the last line if not ending with newline
   if (char_count > 0 && line_count == 0) {
      line_count = 1;  // In case the input doesn't end with a newline
   }
```

```
    // Handle edge case if the last line doesn't end with a newline, ensuring line_count is
accurate
    if (line_count == 0) {
        line_count = 1;  // If no line count increment has occurred, treat as one line
    }

    printf("Characters : %d\n", char_count);
    printf("Words : %d\n", word_count);
    printf("Lines : %d\n", line_count);

    return 0;
}

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

```
The 45 is odd number.
```

```
D:\22DCS100\Sem 6\DLP\Practical\prac4\Objective3>flex program.l

D:\22DCS100\Sem 6\DLP\Practical\prac4\Objective3>gcc lex.yy.c -o program.exe

D:\22DCS100\Sem 6\DLP\Practical\prac4\Objective3>program.exe<input.txt
Characters : 22
Words : 5
Lines : 1
```

```
I want to calculate a number. The number of characters, words and lines.
All know that \n is ending character of line.
45 + 89 =40
```

```
D:\22DCS100\Sem 6\DLP\Practical\prac4\Objective3>program.exe<input.txt
Characters : 131
Words : 26
Lines : 3
```

Objective 4

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

int has_lower = 0, has_upper = 0, has_digit = 0, has_symbol = 0;
int length = 0;

void check_password();
%}

%%

[a-z]      { has_lower = 1; length++; }
[A-Z]      { has_upper = 1; length++; }
[0-9]      { has_digit = 1; length++; }
[*;#$@]    { has_symbol = 1; length++; }
.          { length++; }
\n         { check_password(); return 0; }

%%

void check_password() {
   if (length >= 9 && length <= 15 && has_lower && has_upper && has_digit &&
has_symbol) {
      printf("Valid password\n");
   } else {
      printf("Invalid password\n");
   }
```

```
}

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

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

```
D:\22DCS100\Sem 6\DLP\Practical\prac4\Objective4>flex password.l

D:\22DCS100\Sem 6\DLP\Practical\prac4\Objective4>gcc lex.yy.c -o password.exe

D:\22DCS100\Sem 6\DLP\Practical\prac4\Objective4>password.exe
a@1T
Invalid password

D:\22DCS100\Sem 6\DLP\Practical\prac4\Objective4>password.exe
aB1@
Invalid password

D:\22DCS100\Sem 6\DLP\Practical\prac4\Objective4>password.exe
aaBB11,#cdefg2345
Invalid password

D:\22DCS100\Sem 6\DLP\Practical\prac4\Objective4>password.exe
CHARUSAT
Invalid password

D:\22DCS100\Sem 6\DLP\Practical\prac4\Objective4>password.exe
Charusat@2024
Valid password

D:\22DCS100\Sem 6\DLP\Practical\prac4\Objective4>password.exe
Charu$at@20#24
Valid password

D:\22DCS100\Sem 6\DLP\Practical\prac4\Objective4>password.exe
CHArusat123
Invalid password

D:\22DCS100\Sem 6\DLP\Practical\prac4\Objective4>password.exe
Cspit-2024
Invalid password

D:\22DCS100\Sem 6\DLP\Practical\prac4\Objective4>password.exe
charu*sAT;22
Valid password
```