1a) Write a LEX program to recognize valid arithmetic expression. Identifiers in the expression could be only integers and operators could be + and *. Count the identifiers & operators present and print them separately.

```
%{
int id=0, v=0,op=0, flag=0;
%}
%%
[0-9]+       { id++; printf("%s is an identifier\n", yytext); }
[+ *]        { op++; printf("%s is an operator\n", yytext); }
"("  {v++;}
")"  {if(v>0) v--; else flag=1;}
.            { flag=1; }
\n           { return; }
%%
main()
{
  printf("Enter an arithmetic expression: ");
  yylex();
  if ( flag==0 && id==op+1 && v==0)
  {
    printf("Valid expression\n");
    printf("The no of identifiers are %d\n", id);
    printf("The no of operators are %d\n", op);
  }
  else
    printf("Invalid expression\n");
}
```

```
Enter an arithmetic expression: 23+78*34
23 is an identifier
```

+ is an operator

78 is an identifier

* is an operator

34 is an identifier

Valid expression