

Quiz 4 Solution

Solution 1

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

```
int numIds = 0;  
int numInts = 0;  
int numLines = 0;  
%}
```

```
letter  [A-Za-z]  
digit   [0-9]
```

Solution 1

```
%%
```

```
{letter}({letter}|{digit})*    {numIds++;}  
{digit}+                      {numInts++;}  
\n                             {numLines++;}
```

```
%%
```

```
int yywrap() {  
  
    printf("The number of identifiers is %d\n", numIds);  
    printf("The number of integers is %d\n", numInts);  
    printf("The number of lines is %d\n", numLines);  
    return 1;  
}
```

Solution 2

```
%{  
#include <stdio.h>  
#define IDENT 1  
#define INTEGER 2  
#define LINE 3  
  
%}  
  
letter  [A-Za-z]  
digit   [0-9]  
  
%%  
  
{letter}({letter}|{digit})*{return IDENT;}  
{digit}+      {return INTEGER;}  
\n            {return LINE;}  
  
%%
```

Solution 2

```
int main(int argc, char * argv[]) {
    int numIds = 0;
    int numInts = 0;
    int numLines = 0;

    int token;
    while ((token = yylex())) {
        if (token == IDENT) numIds++;
        else if (token == INTEGER) numInts++;
        else numLines++;
    }
    printf("The number of identifiers is %d\n", numIds);
    printf("The number of integers is %d\n", numInts);
    printf("The number of lines is %d\n", numLines);
}

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