CS 442/542 Fall 2020 Quiz 5 **Name:**____________________________________

1. Write a lex program that expects input that consists of identifiers, base 16 integers, blanks, tabs (\t) and newlines (\n). An identifier is a **lower case** letter followed by 0 or more **lower case** letters. A base 16 integer is a digit followed by 0 or more digits. The digits in a base 16 integer are 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D, E, F. The program should create 1 symbol table that stores the identifiers and base 16 integers. Associated with each identifier and base 16 integer is an int that is used to keep track of the number of times the identifier or integer is found in the input. When all the input has been processed the program should print to standard out all the identifiers and integers that appeared in the input and the number of times they appeared. Assume the input comes from stdin (the lex default).

For example if the input contains the following (where the line beginning with x is the first line in the file and the line beginning with zelda is the last line in the file)

```
x  72  83  sue  9A
7E3 max         AEF zelda 83

zzz      2291 max 42 x 83 72 83
zelda  9A        max zelda 7E3
```

The output should be the following (the order does not matter)

```
72              2
max             3
zelda           3
42              1
83              4
x               2
sue             1
2291            1
7E3             2
zzz             1
9A              2
AEF             1
```

You can assume there are not illegal characters in the input.

Put your solution in 1 file. The file should not include your symbol table implementation. Of course the code in your solution uses your symbol table implementation but the answer you submit should only include declarations and function calls that use the symbol table. For example your code will include a call to enterName but you do not include you implementation of enterName in the fie you submit to me.