Exercises for python_lecture.py

1. Write a python code that determines if a variable x is less than, greater than, or equal to 10 using if/elif/else.

2. Write a Python program using int variables *i*, *j*, and *n*. the code should print a "triangle" of asterisks to be output to the screen, i.e., n lines should be printed out, the first consisting of a single asterisk, the second consisting of two asterisks, the third consisting of three, etc. The last line should consist of n asterisks. Thus, for example, if n has value 13, the output of your code should be:

3. Write a Python program to generate the following output using a for loop:

1

1 2

1 2 3

1 2 3 4

1 2 3 4 5

1 2 3 4

1 2 3

1 2

1

Do the same with a while loop.

4. Write a Python code to generate a multiplication table using a for loop.

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A multiplication table:
  1     2       3       4       5       6       7       8       9

1| 1    2       3       4       5       6       7       8       9
2| 2    4       6       8       10      12      14      16      18
3| 3    6       9       12      15      18      21      24      27
4| 4    8       12      16      20      24      28      32      36
5| 5    10      15      20      25      30      35      40      45
6| 6    12      18      24      30      36      42      48      54
7| 7    14      21      28      35      42      49      56      63
8| 8    16      24      32      40      48      56      64      72
9| 9    18      27      36      45      54      63      72      81
```

5. Create a dictionary called *phone_book* where the keys are names and the values are phone numbers (maybe start with three entries). Write a Python code that iterates over the dictionary and prints both the key and the value for each dictionary entry. Add an entry to the phone book. Delete a different entry. Print the dictionary after each change. (Consider making the code that prints the phone book a function since you have to use it three times).

6. Write a Python function that converts Fahrenheit to Celsius and prints "*x* degrees Fahrenheit is *y* degrees Celsius" where *x* is the input and *y* is the converted value. Use this formula: $[°C] = ([°F] - 32) \times 5/9$

7. Write a Python function called *average* that accepts a list called *scores* as an input. This function should loop through the list to calculate the average score and return that average.

8. Write a Python function called *calculator* that accepts as inputs *x*, *y*, and *operation*. Operation can be one of four strings: "add", "subtract", "multiply", or "divide". Based on that parameter, the calculator will perform that desired operation on *x* and *y* (For division, choose *x*/*y*). Then, it will return the value.