Intro to Python Exercises

1. Take a list, say for example this one:

   ```
   a = [1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89]
   ```

   and write a program that prints out all the elements of the list that are less than 5.

   Instead of printing the elements one by one, make a new list that has all the elements less than 5 from this list in it and print out this new list.

   Ask the user for a number and return a list that contains only elements from the original list, 'a' that are smaller than that number given by the user. Hint: you can use int(input('Enter an integer: ')) to request a number.

2. Given a list of ints, count the number of 5s in the list. For example given the list:

   ```
   b = [1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89]
   ```

   the answer would be 1.

3. Define a function that computes the length of a given list or string. (It is true that Python has the len() function built in, but writing it yourself is nevertheless a good exercise.)

4. Write a program that asks the user for a number. If it is the same as the number you have stored, the program will print a congratulatory message and end. If it is incorrect then ask again. Hint: A good way to solve this may be to use while loops.

5. Write a Python program to sum all the items in a list.

6. Define a function max() that takes two numbers as arguments and returns the largest of them. Use the if-then-else construct available in Python. (It is true that Python has the max() function built in, but writing it yourself is nevertheless a good exercise.)

7. Write a program which will find all such numbers which are divisible by 7 but are not a multiple of 5, between 2000 and 3200 (both included).

   The numbers obtained should be printed in a comma-separated sequence on a single line.

   Hints:
   Consider use range(#begin, #end) method