1) List Examples
   a) Create a list containing 100 random integers between 0 and 1000 (use iteration, append, and the random module). Write a function called `average` that will take the list as a parameter and return the average.

   b) Write a function `sum_of_squares(xs)` that computes the sum of the squares of the numbers in the list `xs`. For example, `sum_of_squares([2, 3, 4])` should return 4+9+16 which is 29:
2) Using Lists
   a) An Average Program – Revisited
      i) Write a function called `listAverage` that takes a list of numbers
         as its argument. The function should compute and return the
         average of the numbers in the list. The function should not
         modify the list.

       ii) Write a function called `makeNumberList` that asks the user for a
           count, then prompts the user count number of times for a number
           and returns those numbers in a list.
iii) Write a function called `getNumberList` that asks the user to enter a list of numbers and returns a list of those numbers. (ie. The function should only prompt the user for input once.)

iv) Write a program that computes the average of user entered number data. Your program must use the function from part i and either the function from part ii or part iii.
3) Nested Loops and Lists
   a) What is the output of the following code?

   ```python
   a = [[4, 5, 7], [6, 5, 3], [2, 9, 1]]
   for i in range(len(a)):
       for j in range(len(a[i])):
           print(a[i][j], end=' ')
       print('')
   ```

4) List Methods Demo