join, split, and List Comprehensions

`join`

1. Read a number of email addresses in the form something@someplace.tld and store them in a list. Join them together using a semicolon (;) so that the resulting string could be pasted into the To field of an email program, e.g. “JohnSmith@gmail.com;help@code.org;admin@abc.com”.
2. Generate a list containing ten random letters of the alphabet, join them together using commas, and display them in a centred block 60 characters wide. Hint: use `format` or other string methods.

`split`

3. Read a string of “words” separated by spaces and count the total number of words in the string.
4. Read two integers separated by a comma and find their sum.
5. Read a string of “words” separated by spaces and calculate the frequency of each word. For example, if the string is “The big cat saw the big dog chase the ball” then the frequence would be the: 3, big: 2, cat: 1, saw: 1, dog: 1, chase: 1, ball: 1. Hint: use two lists.

List Comprehensions

6. Rndomly generate 10 values between 1 and 20, and store them in a list. Use a list comprehension to create another list that contains the squares of these values.
7. Have the user enter an arbitrary number of integers, separated by spaces, and determine the maximum value entered.
8. Read an arbitrary number of integers (assume between 1 – 999 999) from the user using a single `input` statement, increase each value by one, then display all values in a right-aligned column.
9. The `itertools` module contains a number of functions that are used for efficient counting. The `permutations` function returns all possible arrangements of a given set of values. For example, the call `itertools.permutations([1, 2, 3])` will generate six tuples representing the different ways to arrange the three values: (1,2,3), (1,3,2), (2,1,3), (2,3,1), (3,1,2) and (3,2,1). These tuples can be accessed in a similar manner to the values in range, e.g. by using a statement similar to the one below.

   ```
   for val in intertools.permutations([1, 2, 3]):
   ```

   Write a program that generates all possible permutations of four letters, input by the user, and displays them in the form `a-b-c-d`. Hint: there should be 24 of them.