

<p>1) What's the output like?</p> <p>How should the output of the program look like? Write down a few sample lines of output .</p>	<p>2) Find a program structure</p> <p>Which steps should the program execute, and in which order? Draw a small flowchart.</p>
<p>3) Finding the right data type</p> <p>Which data type in Python is suited well to count things? Which operations on this data type will be necessary to</p> <ol style="list-style-type: none"> 1) initialize the data type? 2) count a word? 	<p>4) Processing text data</p> <p>Which functions can be used to</p> <ol style="list-style-type: none"> 1) Read a text file? 2) Separate a string into words?
<p>5) Sorting</p> <p>Which data type in Python can be used to sort things?</p> <p>How would you want to represent words and counts in this data structure?</p>	<p>6) Sorting by word counts, not words</p> <p>How does Python sort integers, strings, tuples, and other lists?</p>
<p>7) Did it work?</p> <p>Where would you expect words like 'is', 'the', 'sea', and 'cerebellum' to occur. Check whether the output of the program corresponds to your expectations.</p> <p>Does 'captain' or 'whale' occur more often in the text?</p>	<p>8) Caveat</p> <p>Special and uppercase characters may be a problem when separating words. Remove all special characters before starting counting.</p> <p>How can this be done?</p>

Program structure

- Read the file.
- Split it into words.
- Count each word.
- Sort the words by counts.
- Output the words and counts

Output example

```
2307 is
228 through
5 tobacco
```

Processing text data (reminder)

Reading a text file:

```
text = open(filename).read()
```

chopping up a string:

```
list = string.split()
```

Finding the right data type

Dictionaries can be used to count things.

```
counter = {}
```

```
counter.setdefault('fish', 0)
```

```
counter['fish'] += 1
```

Sorting by word count, not words:

Try to sort on the command line these lists:

```
[ ( "aaa", 100), ( "bbb", 20) ]
```

and

```
[ ( 100, "aaa"), ( 20, "bbb") ]
```

Sorting

In Python, lists can be sorted.

Lists can contain tuples, e.g.

```
my_list = [ (12, 34), (56, 78) ]
```

```
my_list.sort()
```

Caveat

Special characters can be removed by the `str.replace()` function – or more comfortably using the `re` module.

Did it work?

The first five places should be taken by of (6614), and (6433), a (4726), to (4625), and in (4173).

You have to check yourself whether 'whale' or 'captain' is first.