

Aufgabe 1:

```
1 import os
2 import re
3 import pprint
4
5 genome_parts = ['A', 'C', 'G', 'T']
6 sequences = []
7 sequence = []
8 for line in open("./ecoli.txt", "r"):
9     line = line.replace('\n', '')
10    if re.match('>.*', line) != None:
11        sequences.append(''.join(sequence))
12        sequence = []
13    elif line != '' and line != '\n':
14        sequence.append(line)
15
16 sequences.append(''.join(sequence))
17
18 del sequences[0]
19
20 stat_all = {}
21 stat_single_list = []
22 length_all = 0
23
24 for g in genome_parts:
25     stat_all[g] = 0
26
27 for s in sequences:
28     stat_sum = 0
29     stat_single = {}
30     for g in genome_parts:
31         length = len(re.findall(g, s))
32         stat_all[g] = stat_all[g] + length
33         stat_single[g] = length
34         stat_sum = stat_sum + length
35     stat_single['sum'] = stat_sum
36     stat_single_list.append(stat_single)
37
38 overall_sum = 0
39
40 for stat in stat_single_list:
41     overall_sum = overall_sum + stat['sum']
42     for g in genome_parts:
43         stat[g] = stat[g] / stat['sum']
```

```
44
45 for g in genome_parts:
46     stat_all[g] = stat_all[g] / overall_sum
47
48 print("all:")
49 print(stat_all)
50 print("single:")
51 print(stat_single_list)
```

Aufgabe 2:

```
1  import re
2
3  result_dict = {}
4
5  line_number = 0
6
7  for line in open("./code.txt", "r"):
8      for word in re.sub('\W', ' ', line).split():
9          if len(word) < 2:
10             continue
11             if word not in result_dict:
12                 result_dict[word] = []
13                 result_dict[word].append(line_number)
14             line_number = line_number + 1
15
16  print(result_dict)
```

Aufgabe 3:

```
1  input_string = ""
2  input_number = -1
3  max_number = 0
4  length = 0
5  while input_number != 0:
6      input_string = input("Bitte Seriennummer eingeben: ")
7      input_number = int(input_string)
8      if input_number != 0:
9          length = length + 1
10         if input_number > max_number:
11             max_number = input_number
12
13  print("Es gibt ca " + str(max_number + max_number / length - 1) + " Geräte.")
```
