

```

1  # insertion sort
2
3  for i in range(1, len(a)):
4      pos = 0
5      while a[pos] < a[i]:
6          pos += 1
7      a[pos:] = [a[i]] + a[pos:i] + a[i+1:]
8
9  # choice sort
10
11 for k in range(len(a)):
12     min_value, min_index = a[k], k
13     for i, value in enumerate(a[k:], k):
14         if value < min_value:
15             min_value, min_index = value, i
16     a[k], a[min_index] = a[min_index], a[k]
17
18 # factorial
19
20 def factorial(n):
21     if n == 0:
22         return 1
23     else:
24         res = 1
25         for i in range(2, n + 1):
26             res *= i
27         return res
28
29 # C_n_k
30
31 def binomial_coefficient(n, k):
32     return factorial(n) // (factorial(k) * factorial(n - k))
33
34 # shorten
35
36 def shorten(text, length=25, indicator="..."):
37     if len(text) > length:
38         text = text[:length - len(indicator)] + indicator
39     return text
40
41 # print_log_message
42
43 log_file = open('myserver.log', 'w')
44
45 def print_log_message(msg):
46     print(datetime.datetime.now(), msg, file = log_file)
47
48

```

```
49 log = ''
50
51 def print_log_msg(msg):
52     log = log + msg + '\n'
53
54 print_log_msg('ololo')
55 print(log)
56
57 # UnboundLocalError
58
59 # lambda
60
61 olympiad_results = [('Ivan', 47),
62                    ('Petr', 42),
63                    ('Oleg', 79)]
64
65 olympiad_results.sort(key = lambda pair: pair[1])
```