Week 4, exercise 1: Functions and Sparse Data Quiz

Functions and Sparse Data Quiz (50 p)

With this quiz we will check how well you understand the different Python methods discussed as well as how to deal with sparse data in Python. Examine the questions below and choose one or more correct checkboxes.

Please note that all correct checkboxes must be chosen without any incorrect ones to get any points. Choose all statements that are true (and only them).

1. Which type is `map(function,list)`? **10 / 10**

- ☑ **iterator**
- ☐ iterable

✔ **Correct!**

2. Which of the following instructions returns the list `[(1, 4, 'a'), (2, 5, 'b'), (3, 6, 'c')]`, if the variables `x`, `y`, and `z` are `x = [1, 2, 3]`, `y = [4, 5, 6]`, and `z = ["a", "b", "c"]`? Select all that apply.

10 / 10

- ☑ **list(zip(x, y, z))**
- ☐ zip([x, y, z])
- ☐ list(zip(zip(x, y), z)
- ☐ [(a, b, c) for a in x for b in y for c in z]
- ☑ **[(x[i], y[i], z[i]) for i in range(0, 3)]**

✔ **Correct!**

3. Which data type (choose one) should be used for a matrix (of sparse data) that will be used for a lot of matrix-vector multiplications?

10 / 10

- ☐ coo
- ☐ csc
- ☑ **csr**
- ☐ numpy array

✔ **Correct!**

4. Which data type (choose one) should be used for a sparse matrix from which we need easy access to individual rows?

10 / 10

- ☐ coo
- ☐ csc
- ☑ **csr**
- ☐ numpy array

✔ **Correct!**

5. In a CSR matrix, how do I get the column indices and values of the *i*th row?

10 / 10

- ☐ column indices are given by indptr[indices[i-1]: indices[i]]
- ☐ column indices are given by indices[indptr[i-1]: indptr[i]]
- ☑ **column indices are given by indices[indptr[i]: indptr[i+1]]**
- ☐ column indices are given by indices[i, :]
- ☐ values are given by data[indptr[i-1]: indptr[i]]
- ☐ values are given by data[indecies[i-1]: indptr[i]]
- ☑ **values are given by data[indptr[i]: indptr[i+1]]**
- ☐ values are given by data[i, :]

✔ **Correct!**