Lab04. Classes and Objects

Script Languages (INZ002025)

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1 Learning goals

After this lab you should be able to:

1. Create your own class,
2. Know what is a purpose of constructor,
3. Know how to convert an object into a string,
4. Use objects,
5. Create a new class using inheritance.

2 Exercises

Artefacts to be uploaded to ePortal: - file: `app4.py`

Do not use regular expressions to parse lines of the log. Use the function `split()` with argument. See Python documentation to learn how to use `split`.

1. Download logfile from ePortal.
2. Learn about `IPv4Address` and `IPv4Network` classes from `ipaddress` library. How can you check if a given IPv4 address belongs to the IPv4 network using these objects?

   Include link to Python documentation in the end of your application.
3. Learn about `datetime` class.

   Include link to Python documentation in the end of your application.
4. Crate a function that:
   - takes as an argument a timestamp string from the log file (e.g. `18/Oct/2020:01:30:42`),
   - parses it using `split()`,
   - returns a new `datetime` object.
5. Create your own class to keep a single log entry (log line). Create at least:
   - a constructor,
   - a method to convert object into string,
   - a method to convert object into string representing instance,
   - any additional methods that will be useful in this assignment.

   Use the classes you have already developed or learned about.
6. Create a function that:
   - takes as an argument one line of the log file,

- returns log entry object (use the class from the previous task).

7. Create a function that:
   - reads the content of the logfile,
   - returns a list of log entry objects.
8. Create a function that displays all requests between two given moments in time. Both moments should be passed as `datetime` arguments. If the second argument is earlier than the first one, display the warning message.