Task documentation SYN: Syntax highlight in Python 3 for IPP 2014/2015
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Problem analysis

Main objective in this project is to create syntax highlighter that via regular expressions formats input file. Problem can be divided to several subproblems: Argument parser, Regular expression loader, Formatter.

Structure

There is only module *syn*, where is solution implemented. It contains classes such as Base, Regex, Stack, Reformat and CLI[1].

Base class is class where main function calls and instances of others classes are. There is no stack implementation in build-in modules, thus it is implemented in this project.

Solution & implementation

Argument parser

Implemented as CLI class which parses parameters of program via build-in module named *argparse*. This also handles opening and closing file, parameter syntax check and errors. Exit codes when error occurs is handled with exception system, that exits program with right exit code.

Regular expression loader

It is known as Regex class in this project and used to converts formatting regular expressions to python's regular expressions. It is achieved with dictionaries that contains as a key regular expression and as value string, with which match will be substituted. This returns array of tuples (regular expression, html tag).

Formatter

This class finds indexes of regular expression matches and inserts html tags from format file on them. It also replaces special characters with escape sequences if *--escape* parameter is defined. If - - *br* is defined, before all new lines is <*br* /> inserted.

Insertion takes as first parameter sorted array of tuple *(index, tag, regular priority, match priority, identification number of tag)*, and as second parameter whole file as string. Array is sorted in descending order, thus insertion is realized backwards.

[1] Command Line