P1.3 Final Exam Python

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Chapter 1

Python Exam: Class postcardList

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For this exercise we were asked to implement a class that handles a list of postcards organized in different files. The class should include specific member functions which its implementation can be explained with the following workflow example:

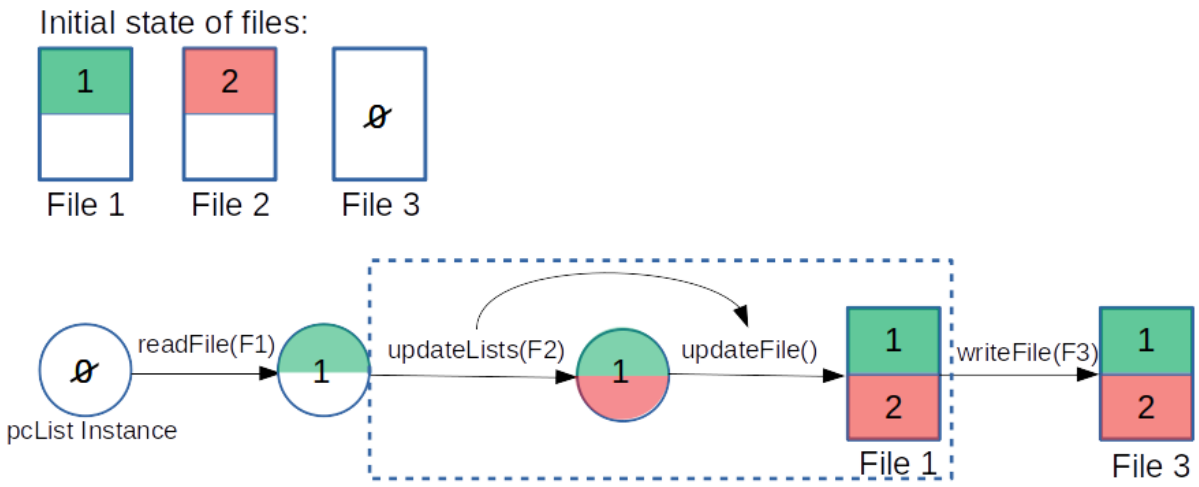

Figure 1.1 Figure 1: Workflow example

Initially we have three files:

- File 1 contains a list of postcards
- File 2 contains a different list of postcards
- File 3 is empty.

We create an instance of `postcardList` which is initially empty. The function `readFile(F1)` populates the object with the information of F1. Note that self._file = F1. `updateLists(F2)` updates the information stored in the object with the one contained in F2 and calls the `updateFile()` function to dump the new information in File 1 (the file associated with the object). Lastly, `writeFile(F3)` is used to dump the information stored in the object to a new file. The object is still associated with F1. There are additional member functions that handle specific queries to the postcardList. More documentation is available in the documentation folder. We did it with `Doxygen` just to try it out.
There were a lot different implementations, we choose this as an example, trying to force consistency between the instance of the class and the file associated to it.

Chapter 2

Class Index

2.1 Class List

Here are the classes, structs, unions and interfaces with brief descriptions:

Chapter 3

Class Documentation

3.1 exam_solution.PostcardList Class Reference

Documentation for PostcardList class.

Public Member Functions

- def __init__ (self)

  The constructor.
- def readFile (self, from_file_path)

  readFile to initialize object This function initialize the PostcardList with _file = <from_file_path> It is meant to use if you want to initialize the object from a file.
- def updateLists (self, from_file_path)

  Updates PostcardList This function updates the list of postcards (_postcards) from a given file: <from_file_path> The <from_file_path> should not be the same file as the one associated to the object (_file).
- def updateFile (self, pc_list)

  Updates the file associated with PostcardLists Meant to be a private function called by updateLists().
- def writeFile (self, to_file_path)

  Writes postcardList into a new file.
- def parsePostcards (self)

  Parse the elements stored in _postcards Based on that information it creates three dictionaries to store the data: _date, _from, _to.
- def getPostcardsBySender (self, sender)

  Returns Postcards sent by a specific name given as an argument of the function (e.g.
- def getPostcardsByReceiver (self, receiver)

  Returns Postcards recieved by a specific name given as an argument of the function (e.g.
- def getPostcardsByDateRange (self, date_range)

  Returns list of Postcards sent in a date range.
- def getNumberOfPostcards (self)

  Returns the number of postcards.

3.1.1 Detailed Description

Documentation for PostcardList class.
PostcardList() class handles the data stored in .txt files. An object of this class is linked directly to an unique exam_postcard_list?.txt file. It can read its content, update it if needed and write its information into another file.

3.1.2 Member Function Documentation

3.1.2.1 getNumberOfPostcards()

```
def exam_solution.PostcardList.getNumberOfPostcards (
              self )
```

Returns the number of postcards.

Parameters

self	The object pointer.

3.1.2.2 getPostcardsByDateRange()

```
def exam_solution.PostcardList.getPostcardsByDateRange (
              self,
              date_range )
```

Returns list of Postcards sent in a date range.

Parameters

self	The object pointer.
date_range	Date range as a tuple of datetime (start,end)

3.1.2.3 getPostcardsByReceiver()

```
def exam_solution.PostcardList.getPostcardsByReceiver (
              self,
              receiver )
```

Returns Postcards recieved by a specific name given as an argument of the function (e.g. 'Batman')

Parameters

self	The object pointer.
sender	Receiver name as a string

3.1.2.4 getPostcardsBySender()

```
def exam_solution.PostcardList.getPostcardsBySender (
              self,
              sender )
```

Returns Postcards sent by a specific name given as an argument of the function (e.g. 'Batman')

Parameters

self	The object pointer.
sender	Sender name as a string

3.1.2.5 readFile()

```
def exam_solution.PostcardList.readFile (
              self,
              from_file_path )
```

readFile to initialize object This function initialize the PostcardList with _file = <from_file_path> It is meant to use if you want to initialize the object from a file.

Parameters

self	The object pointer.
from_file_path	Path to the file that is going to be associated with the instance of the class.

3.1.2.6 updateFile()

```
def exam_solution.PostcardList.updateFile (
              self,
              pc_list )
```

Updates the file associated with PostcardLists Meant to be a private function called by updateLists().
Do not run by it self!!

3.1.2.7 updateLists()

```
def exam_solution.PostcardList.updateLists (
              self,
              from_file_path )
```

Updates PostcardList This function updates the list of postcards (_postcards) from a given file: <from_file_path> The <from_file_path> should not be the same file as the one associated to the object (_file).
It also automatically updates the _file associated with the instance of PostcardList.

Parameters

self	The object pointer.
to_file_path	Path to the file from were to read the postcard list.

3.1.2.8 writeFile()

```
def exam_solution.PostcardList.writeFile (
              self,
              to_file_path )
```

Writes postcardList into a new file.

Parameters

self	The object pointer.
to_file_path	Path to the file you want to write the postcard list to.

The documentation for this class was generated from the following file:

- /home/fede/Documents/mhpc/P1.3_exam/python/exam_solution.py

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