

## 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:

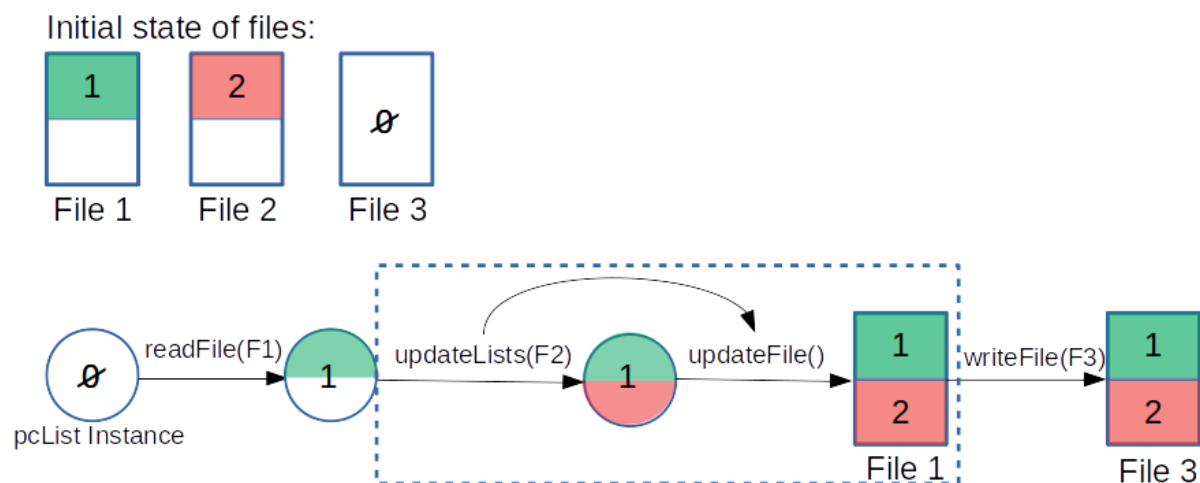


Figure 1.1 Figure 1: Workflow example

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:

<a href="#">exam_solution.PostcardList</a>	
Documentation for <a href="#">PostcardList</a> class	5





## 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

<i>self</i>	The object pointer.
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### 3.1.2.2 getPostcardsByDateRange()

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

Returns list of Postcards sent in a date range.

#### Parameters

<i>self</i>	The object pointer.
<i>date_range</i>	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

<i>self</i>	The object pointer.
<i>sender</i>	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

<i>self</i>	The object pointer.
<i>sender</i>	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

<i>self</i>	The object pointer.
<i>from_file_path</i>	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

<i>self</i>	The object pointer.
<i>to_file_path</i>	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

<i>self</i>	The object pointer.
<i>to_file_path</i>	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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