



Java Software Development

Homework 5

Deadline: 2017/04/13 23:55

- Define a class named `Document` that contains an instance variable of type `String` named `text` that stores any textual content for the document.
- Create a method named `toString` that returns the `text` field.
- Create a mutator method for setting the value of the `text` field.

Document
text: String
+ toString(): String + setText(String): void

- Next, define a class for `Email` that is derived from `Document` and includes instance variables for the `sender`, `recipient`, and `title` of an email message. The body of the email message should be stored in the inherited variable `text`.
- You should implement appropriate accessor and mutator methods for the class fields. Redefine the `toString` method to concatenate all text fields.

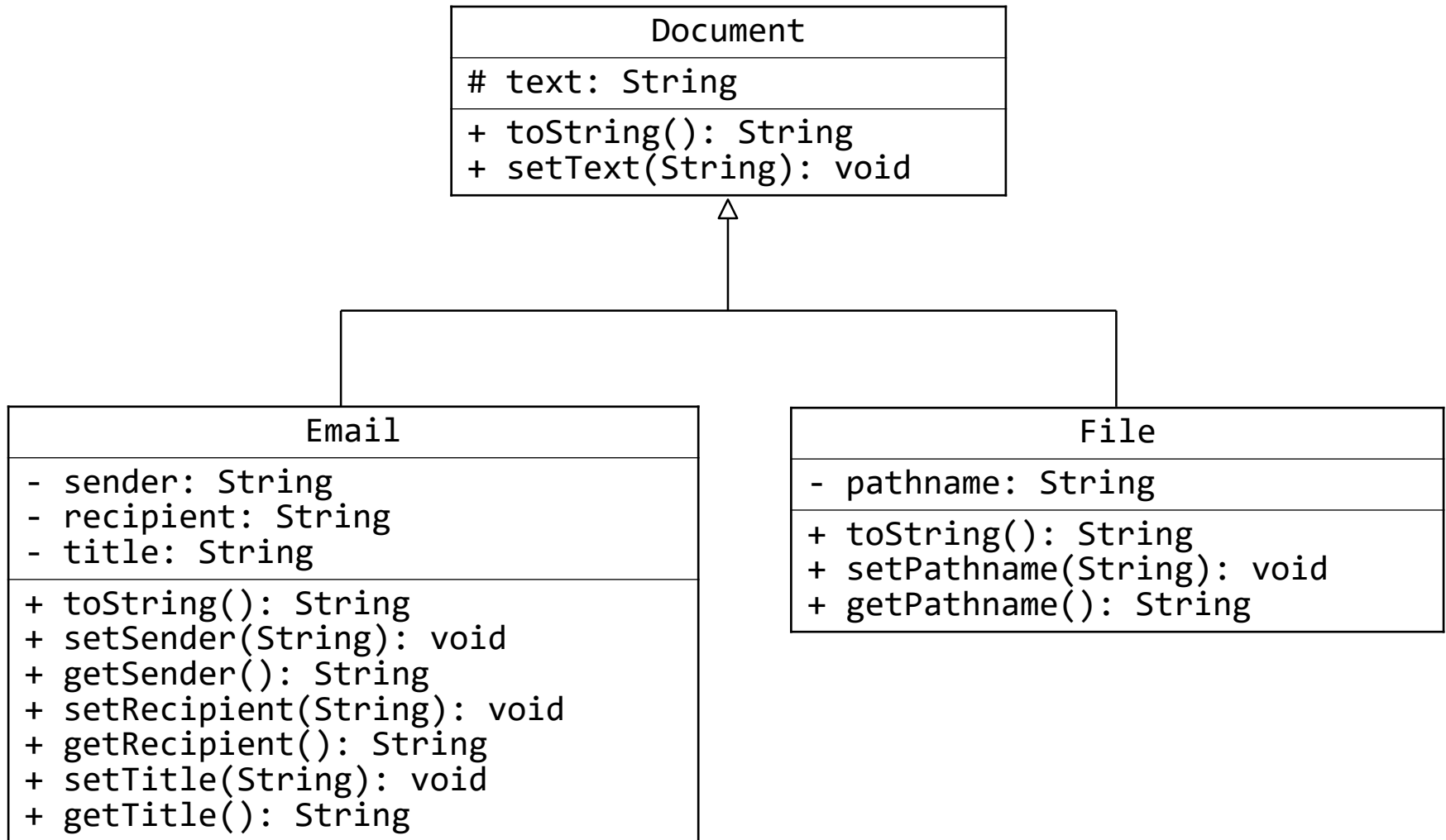
Email
- sender: String - recipient: String - title: String
+ toString(): String + setSender(String): void + getSender(): String ...

- Similarly, define a class for `File` that is derived from `Document` and includes an instance variable for the `pathname`. The textual contents of the file should be stored in the inherited variable `text`.
- Implement appropriate accessor and mutator methods. Redefine the `toString` method to concatenate all text fields.

File
- <code>pathname: String</code>
+ <code>toString(): String</code> + <code>setPathname(String): void</code> + <code>getPathname(): String</code>

Class Design

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Text Format

- `Document.toString()`

`text`

- `Email.toString()`

From: `sender`

To: `recipient`

Title: `title`

`text`

- `File.toString()`

Path: `pathname`

`text`

Problem Description

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- Write a program to print some information about a document according to the execution mode.
- The program input is given from keyboard
 - Input 1: The execution mode (A, B or C)
 - Input 2: The document type (Document, Email or File)
- For type Document:
 - Input 3: document content
- For type Email:
 - Input 3: sender
 - Input 4: recipient
 - Input 5: title
 - Input 6: email body
- For type File:
 - Input 3: path to the file
 - Input 4: file content

- For execution mode A, you should use the `toString()` method to print the text content of the document.
- For execution mode B, enter a keyword that follows the last keyboard input. You should print whether or not the text content contains the keyword (print true or false).
- For execution mode C, enter one of the name of an instance variable and the new value of the variable. You should update the value of the variable and print all content.
 - For type `Document`, the variable name must be "text"
 - For type `Email`, the variable name must be "text", "sender", "recipient" or "title", one of above.
 - For type `File`, the variable name must be "text" or "pathname", one of above.

Sample Input and Output

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Input 1	A
Input 2	Email
Input 3	Rose
Input 4	Jack
Input 5	Titanic
Input 6	I will always love you!
Output	From: Rose To: Jack Title: Titanic I will always love you!

Sample Input and Output

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Input 1	B
Input 2	Document
Input 3	Friday is a delightful day.
Input 4	Monday
Output	false

Sample Input and Output

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Input 1	C
Input 2	File
Input 3	D:\java\final_exam.docx
Input 4	YOU CANNOT PASS!!!
Input 5	text
Input 6	I will pass!!!
Output	Path: D:\java\final_exam.docx I will pass!!!

Submission

- Please archive your source code to `STUDENT_ID.zip` (download the example zip file from Moodle) and upload to Moodle before deadline.
- Your zip file should follow the following format.
 - `STUDENT_ID.zip`
 - | - `src`
 - | - `META-INF`
 - | | - `MANIFEST.MF`
 - All the source files (*.java) are put in the `src` directory.
 - The entry point (i.e. main class) of the program is specified in the `MANIFEST.MF` file.
- No late submission is accepted.

If you have any problem about this homework,
please contact TA: 游傑麟 (ygl0118@gmail.com)