ΠΑΝΕΠΙΣΤΗΜΙΟ ΙΩΑΝΝΙΝΩΝ

ΤΜΗΜΑ ΜΗΧ. Η/Υ & ΠΛΗΡΟΦΟΡΙΚΗΣ

ΑΝΑΠΤΥΞΗ ΛΟΓΙΣΜΙΚΟΥ

ΠΡΟΓΡΑΜΜΑΤΙΣΤΙΚΗ ΕΡΓΑΣΙΑ ΓΙΑ ΤΟ ΑΚΑΔΗΜΑΪΚΟ ΈΤΟΣ

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ΟΜΑΔΑ 2528-4001-4052

ΠΟΥΡΝΑΡΑΣ ΑΛΕΞΑΝΔΡΟΣ , ΑΜ:2528

ΣΟΛΔΑΤΟΥ ΧΡΙΣΤΙΝΑ ΟΛΥΜΠΙΑ, ΑΜ4001

ΤΡΙΑΝΤΑΦΥΛΛΕΝΙΑ ΔΟΥΜΑΝΗ,

ΑΜ:4052

ΑΡΧΙΚΗ ΑΝΑΦΟΡΑ

ΝΟΕΜΒΡΊΟΣ 2021

ΙΣΤΟΡΙΚΟ ΕΚΔΟΣΕΩΝ ΤΗΣ ΠΑΡΟΥΣΑΣ ΑΝΑΦΟΡΑΣ

Ημερομηνία	Έκδοση	Περιγραφή	Συγγραφείς
19/11/2021	v.01	Οργάνωση απαιτήσεων σε use cases, OREOS για τα test cases και σχεδίαση UML διαγραμμάτων	2528-4001-4052

1 ΑΝΆΛΥΣΗ ΑΠΑΙΤΉΣΕΩΝ – USE CASES

Στην παρούσα ενότητα, παρατίθενται οι περιγραφές των use cases με βάση τις καταγεγραμμένες απαιτήσεις.

RegistrationOfAStructuredDataFile

ID: UC 1

Description and Goal

The use case «RegistrationOfAStructuredDataFile» begins when the analyst registers the structured data file in the system.

Actors (esp. primary actor)

The analyst.

Preconditions

The structured data file exists.

Basic Flow

1.The UC starts when the analyst registers the structured data file in the system.

Extensions / Variations

-

Post conditions

The structured data file is registered in the system.

RetrieveMetadata

ID: UC 2

Description and Goal

The use case «RetrieveMetadata» begins when the analyst retrieves the list of the field names of a structured data file.

Actors (esp. primary actor)

The analyst.

Preconditions

The structured data file exists.

Basic Flow

1. The UC starts when the analyst retireves file’s metadata the system

Extensions / Variations

The structured file data is empty.

Post conditions

A field names list is retrieved.

FilterTheData

ID: UC 3

Description and Goal

The use case «FilterTheData» begins when the analyst sets filters on the structured data files.

Actors (esp. primary actor)

The analyst.

Preconditions

The filter's fields exist.

Basic Flow

1. The UC starts when the analyst sets the filters on the structured data files.
2. The analysts can choose a specific filter or a combination of filters.

Extensions / Variations

If the analyst asks for more filters than the existing ones the system displays a message.

Post conditions

The filtered subset of the structured data file is displayed.

PrintTheResultInAFile

ID: UC 4

Description and Goal

The use case «PrintTheResultInAFile» begins when the analyst chooses to print the result to another file.

Actors (esp. primary actor)

The analyst.

Preconditions

The system allows the analyst to print the result to another file.

Basic Flow

1. TThe UC starts when the analyst chooses to print the result to another file..
2. The analysts chooses the type of the new file.

Extensions / Variations

If the creation of the new file fails, throw an info message

Post conditions

A new file has been created.

DisplayTheResultIntoAChart

ID: UC 5

Description and Goal

The use case «DisplayTheResultIntoAChart» begins when the analyst chooses to display the result into a chart.

Actors (esp. primary actor)

The analyst.

Preconditions

The new file has been successfully created.

Basic Flow

1. The UC starts when the analyst chooses to display the result into a chart.
2. The analyst chooses the axes of the chart.
3. The analyst chooses the type of the chart.
4. The analyst chooses if the result should be saved in a jpg file.

Extensions / Variations

If the filtered file is empty throw an info message.

Post conditions

The charts have been successfully created.

2 ΣΧΕΔΊΑΣΗ ΕΛΈΓΧΩΝ

Οι έλεγχοι που σχεδιάσθηκαν και εντάχθηκαν στην υλοποίηση περιγράφονται παρακάτω. Εδώ, ως υπόδειγμα: το project με την διάσπαση χρονοσειράς σε φάσεις.

2.1 ΕΛΕΓΧΟΣ USE CASES VIA SYSTEM TESTS

2.1.1 USE CASE UC1: REGISTRATION OF ASTRUCTURED DATA FILE

Test cases

ID	T1_V0_01	HappyDayScenario for StucturedDataRegistration()
Description	ON	any context
	RECEIVING	The file path of a file with the data
	ENSURE	That the System
	OUTPUTS	The correct formatting of the file
	SUCH THAT	The file exists in the Metadata list.
Pre-cond.		No specific precondition
Input		The file path of the file
Output		The structured data is registered in the system.
Post-cond.		The data has been registered correctly
Method To test		StucturedDataRegistration()

Involved methods

```
MainEngine.loadData()

StucturedDataRegistration()
```

2.1.2 USE CASE UC2: RETRIEVE METADATA

Test cases

ID	T2_V0_01	HappyDayScenario for RetrieveMetadata()
Description	ON	Any context
	RECEIVING	The loaded data and the aggregation type
	ENSURE	That the System
	OUTPUTS	A list of the field names
	SUCH THAT	The field name list is retrieved.
Pre-cond.		Data must have been loaded first.
Input		The loaded data and the data list.
Output		The organized field name list.
Post-cond.		The field name list is retrieved.
Method To test		Retrievator.retrieveMetadata()

Involved methods

```
Retrievator.retrieveMetadata()
MainEngine.retrieveMetadata()
```

2.1.3 USE CASE UC3: FILTER THE DATA

Test cases

ID	T3_V0_01	HappyDayScenario for FilterTheData()
Description	ON	The filters in the structued file data
	RECEIVING	The list
	ENSURE	That the System
	OUTPUTS	Displays the set of filters that are chosen
	SUCH THAT	The state is intact.
Pre-cond.		Data must have been loaded first.
Input		The loaded data and the filters
Output		The filters
Post-cond.		The filter subset of the data file is displayed.
Method To test		`FilterTheData()`

Involved methods

```
Filterer.filterTheData()

MainEngine.filterTheData()
```

2.1.4 USE CASE UC4: PRINT THE RESULT IN A FILE

Test cases

ID	T4_V0_01	HappyDayScenario for printResultInFile()
Description	ON	A file with the set of results of a filter
	RECEIVING	The file and the output location
	ENSURE	That the System
	OUTPUTS	The result of the analyst's question
	SUCH THAT	The state is intact
Pre-cond.		Data must have been loaded first
Input		The output directory
Output		The results of the question
Post-cond.		A new file has been created
Method To test		printResultInFile()

Involved methods

```
ResultPrinter.printResultInFile()
MainEngine.printResultInFile()
```

2.1.5 USE CASE UC5: DISPLAY THE RESULT INTO A CHART

Test cases

ID	T5_V0_01	HappyDayScenario for displayIntoChart()
Description	ON	A chart created from the results
	RECEIVING	The file with results
	ENSURE	That the System
	OUTPUTS	The chart
	SUCH THAT	The state is intact
Pre-cond.		The new file has been succefully created
Input		The output directory
Output		The final chart
Post-cond.		The chart have been successfully created
Method To test		displayIntoChart()

Involved methods

Displayer.displayIntoChart()
MainEngine.displayIntoChart()

2.2 TRACEABILITY MATRIX

Η αντιστοίχιση use cases σε id's φαίνεται στον Πίνακα 1:

UC1	RegistrationOfAStructuredDataFile
UC2	RetrieveMetadata
UC3	FilterTheData
UC4	PrintTheResultInAFile
UC5	DisplayTheResultIntoAChart

Πίνακας 1 Σύνοψη use cases και των id's τους

Ο Πίνακας 2 είναι ο traceability matrix για τους ελέγχους μας. Στη συνέχεια, οι έλεγχοι επεξηγούνται πιο αναλυτικά.

	UC1	UC2	UC3	UC4	UC5
T1_V0_01	X				
T2_V0_01		X			
T3_V0_01			X		
T4_V0_01				X	
T5_V0_01					X

2.3 ΕΚΚΡΕΜΟΤΗΤΕΣ (TODO)

Εκκρεμούν μη υλοποιημένοι έλεγχοι ως ακολούθως

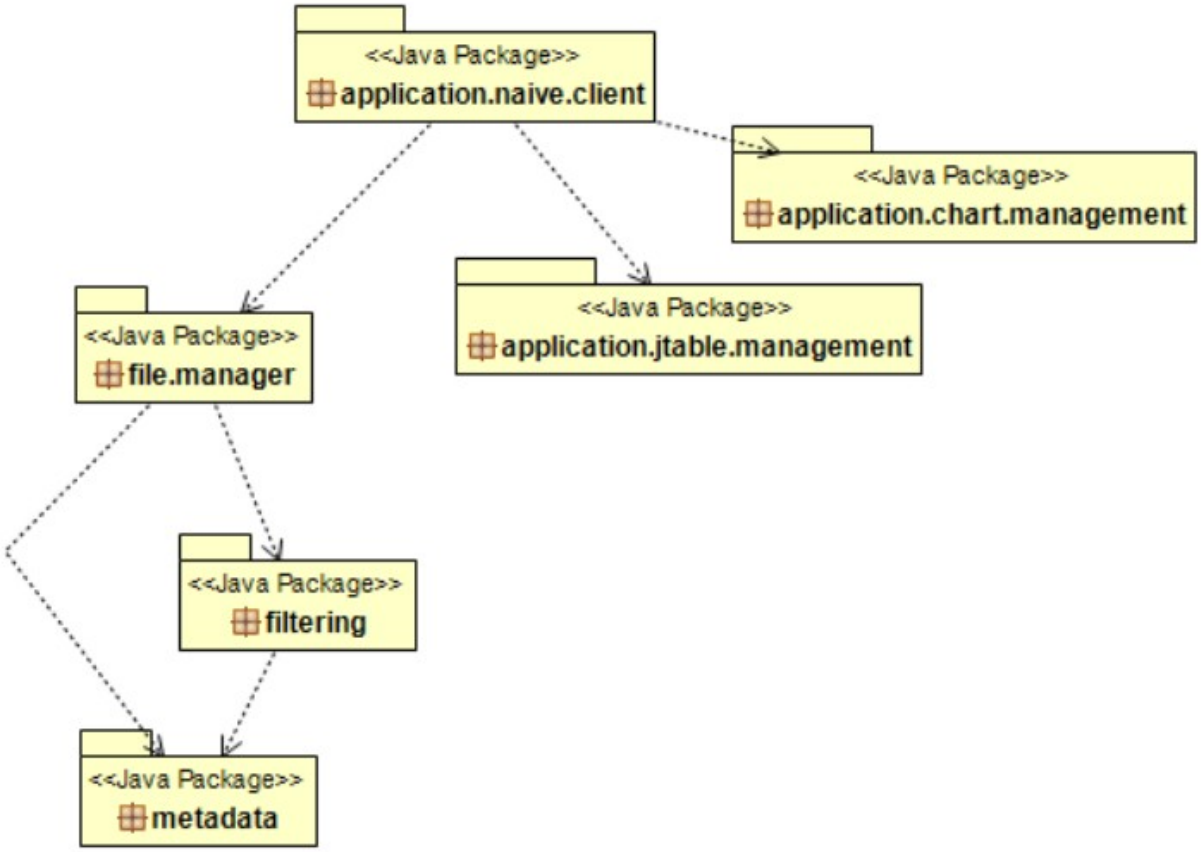
1. Unit tests are missing for several classes, both at the model and at the business logic level, specifically

3 ΣΧΕΔΊΑΣΗ ΛΟΓΙΣΜΙΚΟΎ

3.1 ΔΙΑΓΡΆΜΜΑΤΑ ΠΑΚΕΤΩΝ / ΥΠΟΣΥΣΤΗΜΆΤΩΝ

Η ανάλυση του κώδικα σε υποσυστήματα και πακέτα έχει νόημα μόνο όταν το μέγεθος και η πολυπλοκότητα του κώδικα επιτάσσουν την εν λόγω διαίρεση.

Το διάγραμμα των πακέτων του συστήματος ακολουθεί στο Σχ. 1.



Σχήμα 1. Διάγραμμα πακέτων (εδώ: από την αξιολόγηση εστιατορίου)

Ακολουθεί μια συνοπτική περιγραφή των πακέτων του συστήματος.

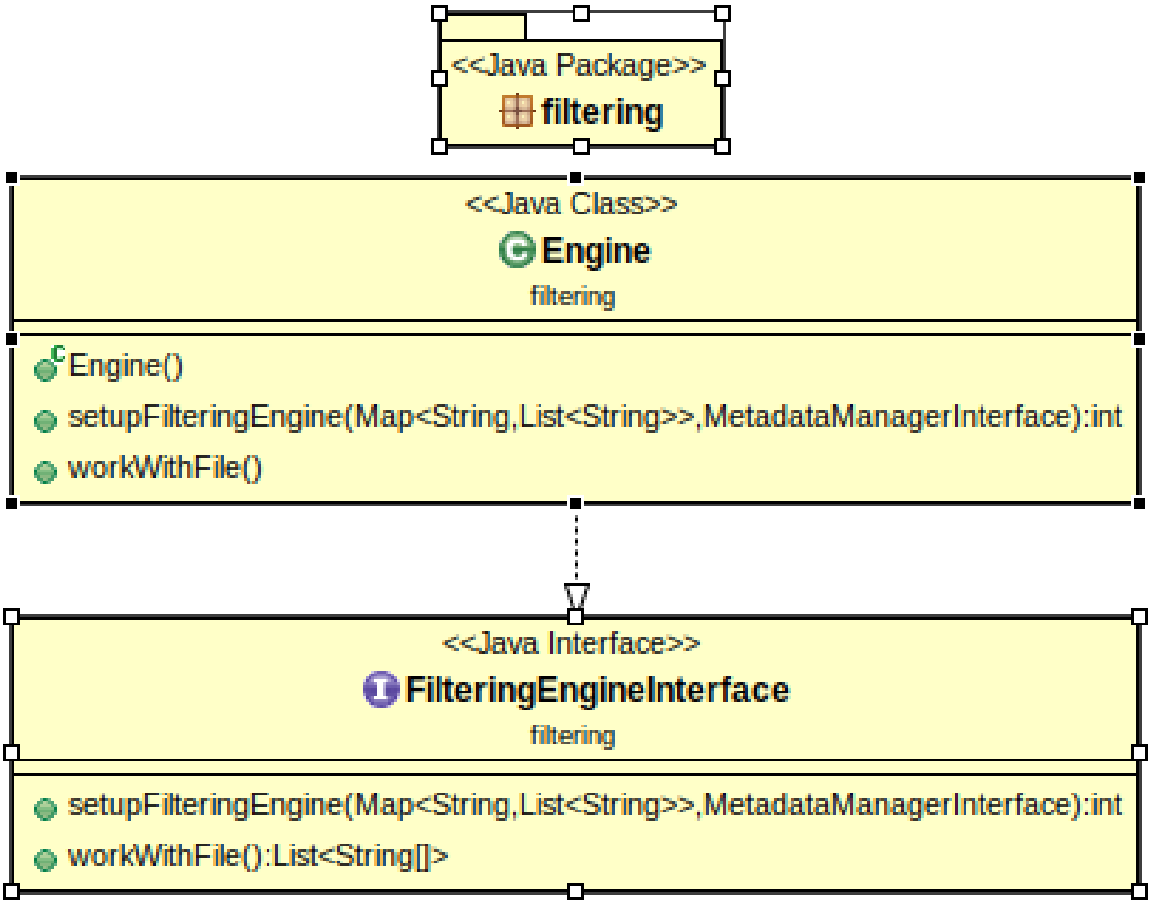
ΠΑΚΕΤΑ ΤΟΥ ΣΥΣΤΗΜΑΤΟΣ

`application.naive.client`	Επικοινωνια με το backend του συστήματος μέσω ενος application controller. Περιέχει την main του προγράμματος.
`Application.jtable.management`	Προβολή φιλτραρισμένων αποτελεσμάτων σε JTable.
`Application.chart.management`	Προβολή φιλτραρισμένων αποτελεσμάτων σε LineChart ή ένα BarChart
`filtering`	Φιλτραρισμα και επιστροφή φιλτραρισμένων εγγραφών.
`File.manager`	Διαχείριση αρχείων.
`metadata`	Επιστροφή μεταπληροφορίας ήδη κατανεμημένων αρχείων.

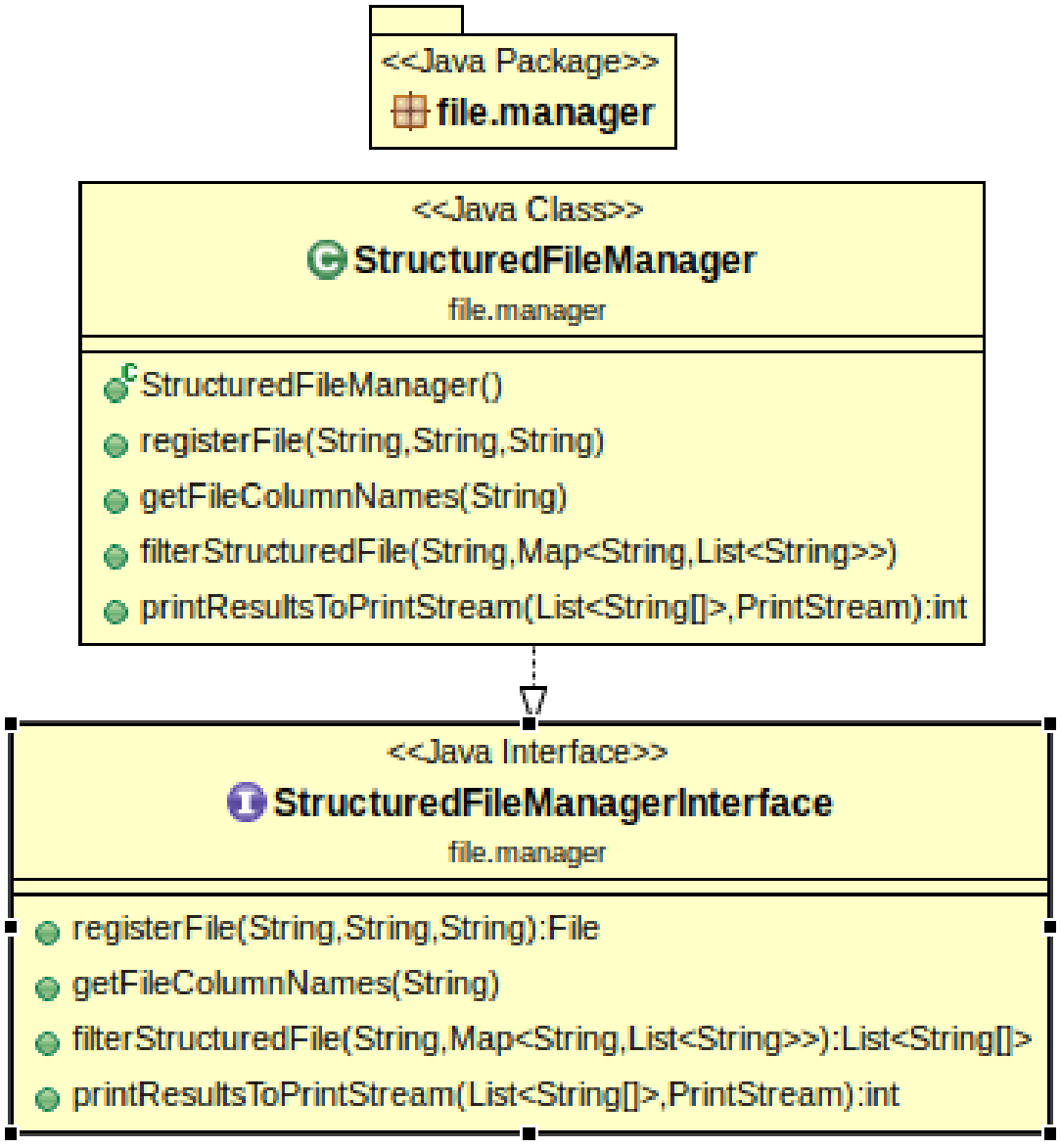
Πίνακας 1. Συνοπτική περιγραφή πακέτων συστήματος (εδώ: από την αξιολόγηση εστιατορίου)

3.2 ΔΙΑΓΡΆΜΜΑΤΑ ΚΛΆΣΕΩΝ

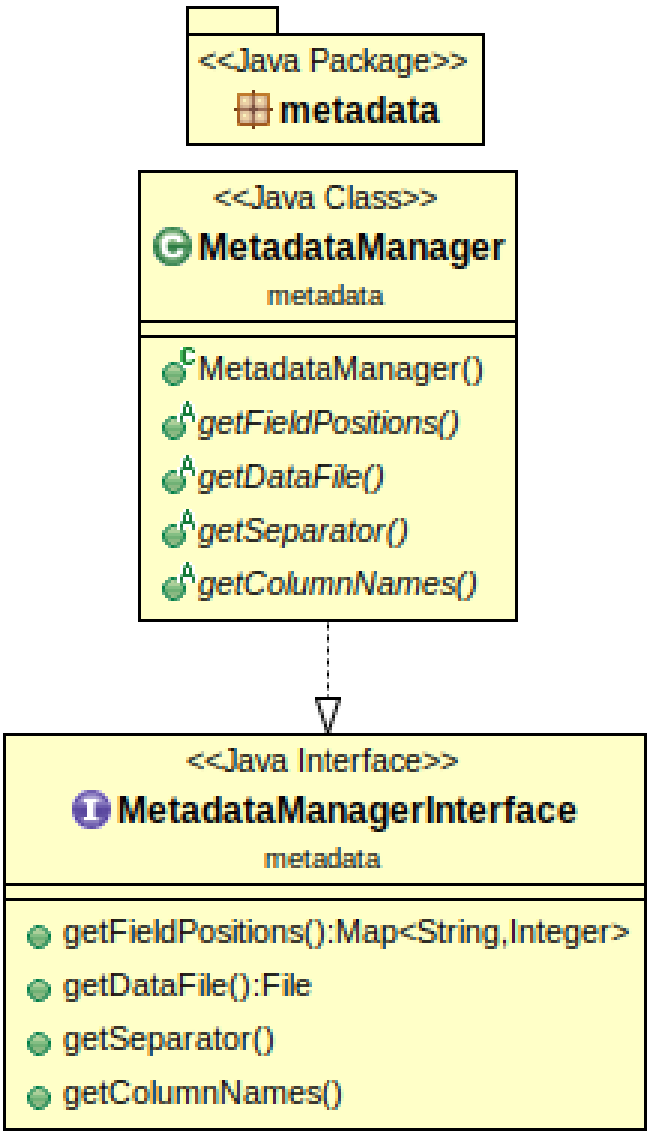
```
package filtering;
```



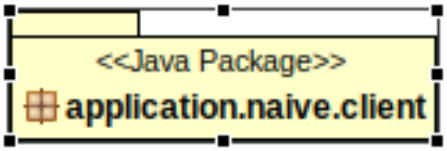
package file.manager

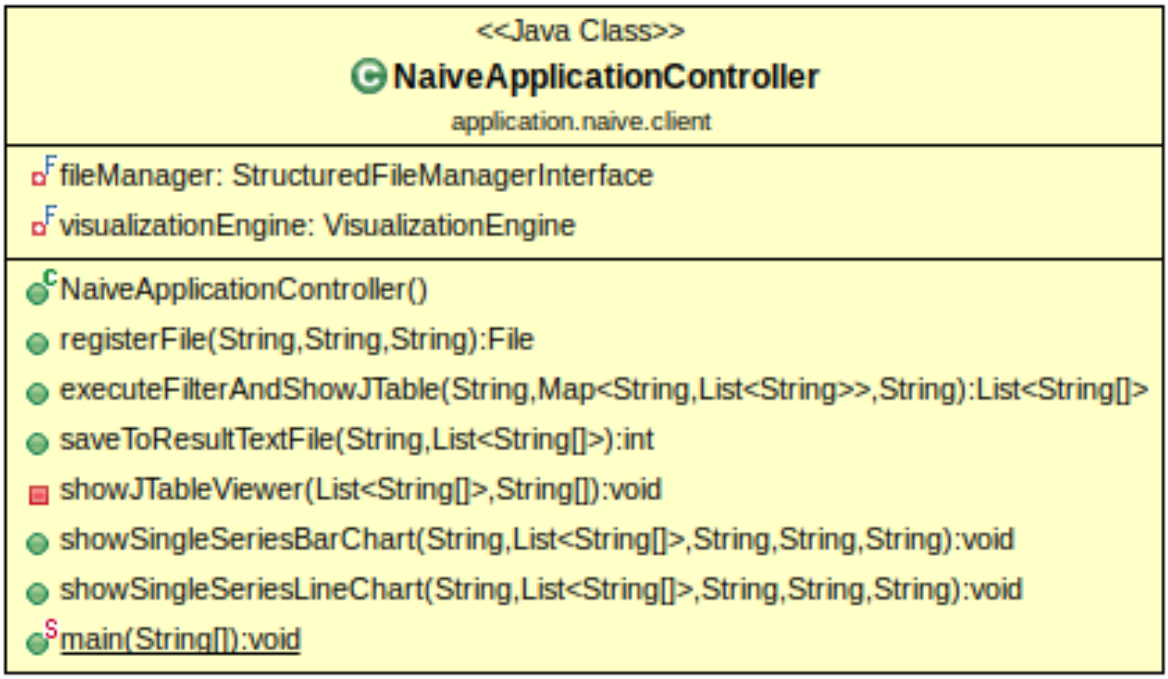


package metadata

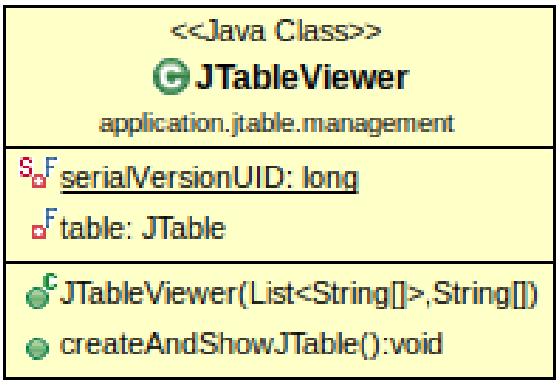


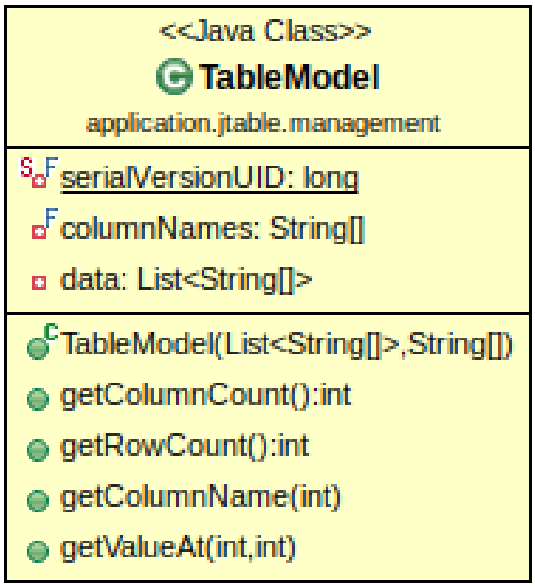
package application.naive.client





package application.jtable.management





package applicarion.chart.management