STPT: XML Technologies Project

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Class Hierarchy

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Chapter 1

Package parsers

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Classes

1.1 Class ParserUtils

Class which implements basic parsing methods over an XML document.

1.1.1 Declaration

```
public class ParserUtils
 extends java.lang.Object
```

1.1.2 Field summary

path_to_doc

1.1.3 Constructor summary

ParserUtils(String) Constructor of the ParserUtil class.

1.1.4 Method summary

parseJAXB() Method which parses an XML document by using JAXB.
SaveDoc(Document, String) Method which, given a document and a location, saves the document at the specific location.

1.1.5 Fields

- `public java.lang.String` **path_to_doc**

1.1.6 Constructors

- **ParserUtils**

```
public ParserUtils(java.lang.String path_to_doc)
```

  - **Description**
    Constructor of the ParserUtil class.
  - **Parameters**
    - `path_to_doc` – Location of the XML document to be used.

1.1.7 Methods

- **parseJAXB**

```
public org.w3c.dom.Document parseJAXB() throws javax.xml.bind.
    JAXBException, javax.xml.parsers.ParserConfigurationException
```

  - **Description**
    Method which parses an XML document by using JAXB. This is achieved by specifying which classes are to be taken into consideration for JAXB binding, then unmarshalling the XML document into the classes and returning the marshalled document back.
  - **Returns** – Marshalled XML document.
  - **Throws**
    - `javax.xml.bind.JAXBException` – @see JAXBException
    - `javax.xml.parsers.ParserConfigurationException` – @see ParserConfigurationException

- **SaveDoc**

```
public void SaveDoc(org.w3c.dom.Document doc,java.lang.String
    location) throws javax.xml.transform.TransformerException
```

  - **Description**
    Method which, given a document and a location, saves the document at the specific location.
  - **Parameters**
    - `doc` – Document to be saved.
    - `location` – Location where the document will be saved.
  - **Throws**
    - `javax.xml.transform.TransformerException` – @see TransformerException

1.2 Class XPathUtils

Class which implements the XPath operations needed for the application.

1.2.1 Declaration

```
public class XPathUtils
 extends java.lang.Object
```

1.2.2 Field summary

doc

1.2.3 Constructor summary

XPathUtils(Document) Constructor of the XPathUtils clas.
XPathUtils(Marshaller, StationsWrapper)

1.2.4 Method summary

printNodes(NodeList)
QueryXPath(String) Method which, given a query in the form of a String object, generates a NodeList of responses using XPath.
QueryXPathString(String) Method which, given a query in the form of a String object, generates a ArrayList of responses using XPath.

1.2.5 Fields

- `public org.w3c.dom.Document` **doc**

1.2.6 Constructors

- **XPathUtils**

  ```
  public XPathUtils(org.w3c.dom.Document doc)
  ```

  - **Description**
    Constructor of the XPathUtils clas.
  - **Parameters**
    - `doc` – XML document, used for querying.

- **XPathUtils**

  ```
  public XPathUtils(javax.xml.bind.Marshaller marshaller,Models.
      StationsWrapper data)
  ```

1.2.7 Methods

- **printNodes**

```
public void printNodes(org.w3c.dom.NodeList node_list)
```

- **QueryXPath**

```
public org.w3c.dom.NodeList QueryXPath(java.lang.String query)
    throws javax.xml.xpath.XPathExpressionException
```

  - **Description**
    Method which, given a query in the form of a String object, generates a NodeList of responses using XPath.
  - **Parameters**
    - `query` – Query which will be used for generating the ArrayList results.
  - **Returns** – NodeList Results of the given query.
  - **Throws**
    - `javax.xml.xpath.XPathExpressionException` – @see XPathExpressionException

- **QueryXPathString**

```
public java.util.ArrayList QueryXPathString(java.lang.String
    query) throws javax.xml.xpath.XPathExpressionException
```

  - **Description**
    Method which, given a query in the form of a String object, generates a ArrayList of responses using XPath.
  - **Parameters**
    - `query` – Query which will be used for generating the ArrayList results.
  - **Returns** – ArrayList Results of the given query.
  - **Throws**
    - `javax.xml.xpath.XPathExpressionException` – @see XPathExpressionException

Chapter 2

Package core

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Classes

2.1 Class Interactor

Class which represents the base for the interactors. Through this, one can access the document and pretty print methods.

2.1.1 Declaration

```
public class Interactor
 extends java.lang.Object
```

2.1.2 All known subclasses

TimeTablesInteractor (in 2.3, page 14), StationsInteractor (in 2.2, page 9), VehiclesInteractor (in 2.4, page 19)

2.1.3 Field summary

document
putils
xputils

2.1.4 Constructor summary

Interactor(String) Constructor of the Interactor class.

2.1.5 Method summary

getDocument() Method which returns the parsed XML document.
prettyPrintNode(Node) Method to pretty print a Node element.
prettyPrintNodeList(NodeList) Method to pretty print the elements of a NodeList argument.
SaveDocument(String) Method which saves the XML document.

2.1.6 Fields

- `protected org.w3c.dom.Document` **document**
- `protected parsers.XPathUtils` **xputils**
- `protected parsers.ParserUtils` **putils**

2.1.7 Constructors

- **Interactor**

```
public Interactor(java.lang.String path_to_doc) throws javax.xml
    .bind.JAXBException, javax.xml.parsers.
    ParserConfigurationException
```

  - **Description**
    Constructor of the Interactor class.
  - **Parameters**
    - `path_to_doc` – Path to the XML document to be used.
  - **Throws**
    - `javax.xml.bind.JAXBException` – @see JAXBException
    - `javax.xml.parsers.ParserConfigurationException` – @see ParserConfigurationException

2.1.8 Methods

- **getDocument**

```
public org.w3c.dom.Document getDocument()
```

  - **Description**
    Method which returns the parsed XML document.
  - **Returns** – Return the parsed XML document.

- **prettyPrintNode**

  ```
  public void prettyPrintNode(org.w3c.dom.Node node)
  ```

  - **Description**
    Method to pretty print a Node element.
  - **Parameters**
    - `node` – Node element to be printed.

- **prettyPrintNodeList**

  ```
  public void prettyPrintNodeList(org.w3c.dom.NodeList nodeList)
  ```

  - **Description**
    Method to pretty print the elements of a NodeList argument.
  - **Parameters**
    - `nodeList` – A list of Node elements.

- **SaveDocument**

  ```
  public void SaveDocument(java.lang.String location) throws javax
      .xml.transform.TransformerException
  ```

  - **Description**
    Method which saves the XML document.
  - **Parameters**
    - `location` – Location of the updated document.
  - **Throws**
    - `javax.xml.transform.TransformerException` – @see TransformerException

2.2 Class StationsInteractor

Class which holds the implementation for interacting with a transport-station object. A transport-station element of of the following structure in the XML: `2406 Tv9b Bv Sudului_2 Bulevardul Sudului / Hotel Lido (AEM) Sudului Sudului 45.737211 21.250093 0 dup script 11.12.16. http://maps.google.com/maps?q=Bulevardul%20Sudului%20/%20Hotel%20Lido@45.737211,21.250093 0` Using the StationsInteractor class we can operate on such elements by parsing the XML document and using the XPathUtils class to query, delete, edit and add.

2.2.1 Declaration

```
public class StationsInteractor
 extends core.Interactor
```

2.2.2 Constructor summary

StationsInteractor(String) Constructor of the StationsInteractor class, which calls the parent class for creating the marshalled XML doc.

2.2.3 Method summary

createStation(Integer, int, String, int, String, String, String, String, double, double, Boolean, String, String, String, String) Method which is used for creating a new element of the type transport station.
createStation(TransportStation) Method for creating a new transport station which is used by JAXB binding.
deleteStation(Integer) Method for deleting an element of type transport station based on a given id.
getAllStations() Method for querying for all available transport-stations, taken from the parent XML document.
getStation(Integer) Method for finding a transport-station based on a given id.
replaceStation(Integer, TransportStation) Method for replacing an element of type transport station with a new TransportStation, based on a given id.

2.2.4 Constructors

- **StationsInteractor**

  ```
  public StationsInteractor(java.lang.String path_to_doc) throws
    javax.xml.parsers.ParserConfigurationException, javax.xml.
    bind.JAXBException
  ```

  - **Description**

    Constructor of the StationsInteractor class, which calls the parent class for creating the marshalled XML doc.

  - **Parameters**
    - `path_to_doc` – Path to the XML document which will be used by the interactor.
  - **Throws**
    - `javax.xml.parsers.ParserConfigurationException` – @see ParserConfigurationException
    - `javax.xml.bind.JAXBException` – @see JAXBException

2.2.5 Methods

- **createStation**

```
public org.w3c.dom.Node createStation(java.lang.Integer new_id,
    int lineID,java.lang.String lineName,int stationID,java.lang.
    String rawStationName,java.lang.String friendlyStationName,
    java.lang.String shortStationName,java.lang.String
    junctionName,double x,double y,java.lang.Boolean is_invalid,
    java.lang.String verif,java.lang.String verif_date,java.lang.
    String gmaps_links,java.lang.String info_comm) throws javax.
    xml.xpath.XPathExpressionException
```

- **Description**

  Method which is used for creating a new element of the type transport station. This is achieved by using XPath for finding where to place the new transport station element, and creating it based on the passed parameters. After creation, we append the new Element to the parent.

- **Parameters**
  - `new_id` – Integer: Id of the vehicle to be added. Example: 3306
  - `lineID` – int: Id of the line for the transport station. Example: 1266.
  - `lineName` – String: Name of the line. Example: Tv4.
  - `stationID` – int: id of the station.
  - `rawStationName` – String: Raw name for the station. Example: P-ta Crucii_2.
  - `friendlyStationName` – String: Friendlier version of the raw station name. Example: Piata Crucii (Torontalului)
  - `shortStationName` – String: Shorter version for the station name. Example: P-ta Crucii.
  - `junctionName` – String: Name of the junction. Example: P-ta Crucii.
  - `x` – double: Latitude of the station location.
  - `y` – double: Longitude of the station location.
  - `is_invalid` – Boolean: States whether the station is still in use.
  - `verif` – String: How the station is verified.
  - `verif_date` – String: Date of the last verification.
  - `gmaps_links` – String: Link for google maps location.
  - `info_comm` – String: More info.
- **Returns** – Returns a Node object which represents the newly added transport station element.
- **Throws**
  - `javax.xml.xpath.XPathExpressionException` – @see XPathExpressionException

- **createStation**

```
public org.w3c.dom.Node createStation(Models.TransportStation t)
    throws javax.xml.xpath.XPathExpressionException
```

- **Description**
  Method for creating a new transport station which is used by JAXB binding.
- **Parameters**
  - `t` – TransportStation: TransportStation element representing the new element to be added.
- **Returns** – Returns a Node element representing the newly added transport station element.
- **Throws**
  - `javax.xml.xpath.XPathExpressionException` – @see XPathExpressionException

- **deleteStation**

```
public org.w3c.dom.Document deleteStation(java.lang.Integer id)
    throws javax.xml.xpath.XPathExpressionException
```

  - **Description**
    Method for deleting an element of type transport station based on a given id. The querying to find the transport station whose specific id is the requested one is done by using the existent getVehicle(Integer id) method. If the transport station is found, a new transpor station is created with the new requirements and the parent will now replace the old transport station with the new one. If the requested transport station is found, it will be removed from its parent in the XML document.
  - **Parameters**
    - `id` – Integer: id for finding the requested transport station to be deleted.
  - **Returns** – Document: The XML document which has the requested transport station deleted.
  - **Throws**
    - `javax.xml.xpath.XPathExpressionException` – @see XPathExpressionExceptiond

- **getAllStations**

```
public org.w3c.dom.NodeList getAllStations() throws javax.xml.
    xpath.XPathExpressionException
```

  - **Description**
    Method for querying for all available transport-stations, taken from the parent XML document. The querying is done by passing the following xPath expression to the XPathUtils object: "/transport-stations-root/transport-stations/transport-station"
  - **Returns** – NodeList: A list of Nodes representing all the matched elements found by the query.

- **Throws**
  - `javax.xml.xpath.XPathExpressionException` – @see XPathExpressionException

- **getStation**

```
public org.w3c.dom.Node getStation(java.lang.Integer station_id)
    throws javax.xml.xpath.XPathExpressionException
```

  - **Description**
    Method for finding a transport-station based on a given id. The querying is done by passing the searched id in the following xPath expression, and passing the expression to the XPathUtils class: "//transport-station[@id=%s]" The transport station whose id matches the required id will be returned.
  - **Parameters**
    - `station_id` – Integer: Searched transport station id.
  - **Returns** – Node: If the transport station with the requested id has been found, it will be returned.
  - **Throws**
    - `javax.xml.xpath.XPathExpressionException` – @see XPathExpressionException

- **replaceStation**

```
public org.w3c.dom.Document replaceStation(java.lang.Integer id,
    Models.TransportStation t) throws javax.xml.xpath.
    XPathExpressionException
```

  - **Description**
    Method for replacing an element of type transport station with a new TransportStation, based on a given id. The querying to find the requested transport station to be replaced will be done by using the existent getStation(Integer id) method. If the transport station is found, a new transport station is created with the new requirements and the parent will now replace the old transport station with the new one.
  - **Parameters**
    - `id` – Integer: id for finding the requested transport station.
    - `t` – TransportStation: Replacement for the old transport station element.
  - **Returns** – Document: The XML document which has the requested transport station replaced.
  - **Throws**
    - `javax.xml.xpath.XPathExpressionException` – @see XPathExpressionException

2.2.6 Members inherited from class Interactor

`core.Interactor` (in 2.1, page 7)

- `protected` **document**
- `public Document` **getDocument**`()`
- `public void` **prettyPrintNode**`(org.w3c.dom.Node` **node**`)`
- `public void` **prettyPrintNodeList**`(org.w3c.dom.NodeList` **nodeList**`)`
- `protected` **putils**
- `public void` **SaveDocument**`(java.lang.String` **location**`) throws javax.xml.transform.TransformerException`
- `protected` **xputils**

2.3 Class TimeTablesInteractor

Class which holds the implementation for interacting with a timetable object. A timetable element of of the following structure in the XML: `Gara de Nord 15:39` Using the TimeTablesInteractor class we can operate on such elements by parsing the XML document and using the XPathUtils class to query, delete, edit and add.

2.3.1 Declaration

```
public class TimeTablesInteractor
 extends core.Interactor
```

2.3.2 Constructor summary

TimeTablesInteractor(String) Constructor of the TimeTablesInteractor class, which calls the parent class for creating the marshalled XML doc.

2.3.3 Method summary

createArrival(int, String, Time) Method which is used for creating a new element of the type arrival.

createDirection(Integer, ArrayList) Method which is used for creating a new element of the type direction.

createTimeTable(int, ArrayList) Method which is used for creating a new element of the type timetable.

createTimeTable(TimeTable) Method for creating a new timetable which is used by JAXB binding.

deleteTimeTable(Integer) Method for deleting an element of type timetable based on a given id.

getAllTimeTables() Method for querying for all available timetables, taken from the parent XML document.

getTimeTable(Integer) Method for finding a timetable based on a given id.

replaceTimeTable(Integer, TimeTable) Method for replacing an element of type timetable with a new TimeTable, based on a given id.

2.3.4 Constructors

- **TimeTablesInteractor**

```
public TimeTablesInteractor(java.lang.String path_to_doc) throws
    javax.xml.parsers.ParserConfigurationException, javax.xml.
    bind.JAXBException
```

  - **Description**
    Constructor of the TimeTablesInteractor class, which calls the parent class for creating the marshalled XML doc.
  - **Parameters**
    - `path_to_doc` – Path to the XML document which will be used by the interactor.
  - **Throws**
    - `javax.xml.parsers.ParserConfigurationException` – @see ParserConfigurationException
    - `javax.xml.bind.JAXBException` – @see JAXBException

2.3.5 Methods

- **createArrival**

```
public org.w3c.dom.Node createArrival(int station_id,java.lang.
    String station_name,Models.Time arrives_in)
```

  - **Description**
    Method which is used for creating a new element of the type arrival. This is achieved by creating a new element of type arrival and adding it to the timetable of the searched id.
  - **Parameters**
    - `station_id` – int: id of the station. Example: 4483.
    - `station_name` – String: Name of the station. Example: Gara de Nord.
    - `arrives_in` – Time: Time of arrival. Example: 16:05
  - **Returns** – Returns a Node object which represents the newly added arrival element.

- **createDirection**

```
public org.w3c.dom.Node createDirection(java.lang.Integer way,
    java.util.ArrayList arrivals)
```

  - **Description**
    Method which is used for creating a new element of the type direction. This is achieved by creating a new element of type direction and adding it to the timetable of the searched id.

- **Parameters**
  - `way` – Integer: 0 represents coming, 1 represents going.
  - `arrivals` – ArrayList of type Arrival: Elements of the type arrival.
- **Returns** – Returns a Node object which represents the newly added direction element.

- **createTimeTable**

```
public org.w3c.dom.Node createTimeTable(int vehicle_id,java.util
    .ArrayList directions) throws javax.xml.xpath.
    XPathExpressionException
```

  - **Description**

    Method which is used for creating a new element of the type timetable. This is achieved by finding where to add the new timetable element in the XML document, using the following query in the XPathUtils object: `"//timetable[not(@vehicle_id = preceding-sibling::timetable/@id) and not(@vehicle_id =following-sibling::timetable/@vehicle_id)]"` We then create the vehicle id and the directions for that vehicle. We now need to only populate the directions with arrivals.
  - **Parameters**
    - `vehicle_id` – Integer: id of the vehicle for which the timetable is created. Example: 1207.
    - `directions` – ArrayList of type Direction: Possible directions for the vehicle.
  - **Returns** – Returns a Node object which represents the newly added timetable element.
  - **Throws**
    - `javax.xml.xpath.XPathExpressionException` – @see XPathExpressionException

- **createTimeTable**

```
public org.w3c.dom.Node createTimeTable(Models.TimeTable t)
    throws javax.xml.xpath.XPathExpressionException
```

  - **Description**

    Method for creating a new timetable which is used by JAXB binding.
  - **Parameters**
    - `t` – TimeTable: TimeTable element representing the new element to be added.
  - **Returns** – Returns a Node element representing the newly added timetable element.
  - **Throws**

* `javax.xml.xpath.XPathExpressionException` – @see XPathExpressionException

- **deleteTimeTable**

```
public org.w3c.dom.Document deleteTimeTable(java.lang.Integer id
    ) throws javax.xml.xpath.XPathExpressionException
```

  - **Description**
    Method for deleting an element of type timetable based on a given id. The querying to find the timetable whose specific id is the requested one is done by using the existent getTimeTable(Integer id) method. If the timetable is found, a new timetable is created with the new requirements and the parent will now replace the old timetable with the new one. If the requested timetable is found, it will be removed from its parent in the XML document.
  - **Parameters**
    * `id` – Integer: id for finding the requested timetable to be deleted.
  - **Returns** – Document: The XML document which has the requested timetable deleted.
  - **Throws**
    * `javax.xml.xpath.XPathExpressionException` – @see XPathExpressionExceptiond

- **getAllTimeTables**

```
public org.w3c.dom.NodeList getAllTimeTables() throws javax.xml.
    xpath.XPathExpressionException
```

  - **Description**
    Method for querying for all available timetables, taken from the parent XML document. The querying is done by passing the following xPath expression to the XPathUtils object: "/timetables-root/timetables/timetable"
  - **Returns** – A list of Nodes representing all the matched elements found by the query.
  - **Throws**
    * `javax.xml.xpath.XPathExpressionException` – @see XPathExpressionException

- **getTimeTable**

```
public org.w3c.dom.Node getTimeTable(java.lang.Integer
    vehicle_id) throws javax.xml.xpath.XPathExpressionException
```

- **Description**
  Method for finding a timetable based on a given id. The querying is done by passing the searched id in the following xPath expression, and passing the expression to the XPathUtils class: "//timetable[@vehicle_id=%s]" The timetable whose id matches the required id will be returned.
- **Parameters**
  - `vehicle_id` – Integer: Searched timetable id.
- **Returns** – If the timetable with the requested id has been found, it will be returned.
- **Throws**
  - `javax.xml.xpath.XPathExpressionException` – @see XPathExpressionException

- **replaceTimeTable**

```
public org.w3c.dom.Document replaceTimeTable(java.lang.Integer
    id, Models.TimeTable t) throws javax.xml.xpath.
    XPathExpressionException
```

  - **Description**
    Method for replacing an element of type timetable with a new TimeTable, based on a given id. The querying is done by searching for the timetable to be updated with the existing method getTimeTable(). If the timetable is found, we create a new timetable from t and we update the parent with the new node.
  - **Parameters**
    - `id` – Integer: id for finding the requested timetable.
    - `t` – TimeTable: Replacement for the old timetable element.
  - **Returns** – Document: The XML document which has the requested timetable replaced.
  - **Throws**
    - `javax.xml.xpath.XPathExpressionException` – @see XPathExpressionException

2.3.6 Members inherited from class Interactor

`core.Interactor` (in 2.1, page 7)

- `protected` **document**
- `public Document` **getDocument**`()`
- `public void` **prettyPrintNode**`(org.w3c.dom.Node` **node**`)`
- `public void` **prettyPrintNodeList**`(org.w3c.dom.NodeList` **nodeList**`)`
- `protected` **putils**
- `public void` **SaveDocument**`(java.lang.String` **location**`) throws javax.xml.transform.TransformerException`
- `protected` **xputils**

2.4 Class VehiclesInteractor

Class which holds the implementation for interacting with a vehicle object. A vehicle element of of the following structure in the XML: `M42 Bus` Using the VehiclesInteractor class we can operate on such elements by parsing the XML document and using the XPathUtils class to query, delete, edit and add.

2.4.1 Declaration

```
public class VehiclesInteractor
 extends core.Interactor
```

2.4.2 Constructor summary

VehiclesInteractor(String) Constructor of the VehiclesInteractor class, which calls the parent class for creating the marshalled XML document.

2.4.3 Method summary

createVehicle(Integer, String, String) Method which is used for creating a new element of the type vehicle.
createVehicle(Vehicle) Method for creating a new vehicle which is used by JAXB binding.
deleteVehicle(Integer) Method for deleting an element of type vehicle based on a given id.
getAllVehicles() Method for querying for all available vehicles, taken from the parent XML document.
getVehicle(Integer) Method for finding a vehicle based on a given id.
replaceVehicle(Integer, Vehicle) Method for replacing an element of type vehicle with a new Vehicle, based on a given id.

2.4.4 Constructors

- **VehiclesInteractor**

```
public VehiclesInteractor(java.lang.String path_to_doc) throws
    javax.xml.bind.JAXBException, javax.xml.parsers.
    ParserConfigurationException
```

  - **Description**
    Constructor of the VehiclesInteractor class, which calls the parent class for creating the marshalled XML document.
  - **Parameters**
    * `path_to_doc` – Path to the XML document which will be used by the interactor.
  - **Throws**
    * `javax.xml.bind.JAXBException` – @see JAXBException

* `javax.xml.parsers.ParserConfigurationException` – @see ParserConfigurationException

2.4.5 Methods

- **createVehicle**

```
public org.w3c.dom.Node createVehicle(java.lang.Integer new_id,
    java.lang.String vehicleName,java.lang.String vehicleType)
    throws javax.xml.xpath.XPathExpressionException
```

  - **Description**
    Method which is used for creating a new element of the type vehicle. This is achieved by using XPath for finding where to place the new vehicle element, and creating it based on the passed parameters. After creation, we append the new Element to the parent.
  - **Parameters**
    * `new_id` – Integer: Id of the vehicle to be added. Example: 3306
    * `vehicleName` – String: Name of the vehicle to be added. Example: M42
    * `vehicleType` – String: Type of the vehicle to be added. Example: Bus
  - **Returns** – Returns a Node object which represents the newly added vehicle element.
  - **Throws**
    * `javax.xml.xpath.XPathExpressionException` – @see XPathExpressionException

- **createVehicle**

```
public org.w3c.dom.Node createVehicle(Models.Vehicle v) throws
    javax.xml.xpath.XPathExpressionException
```

  - **Description**
    Method for creating a new vehicle which is used by JAXB binding.
  - **Parameters**
    * `v` – Vehicle: Vehicle element representing the new element to be added.
  - **Returns** – Returns a Node element representing the newly added vehicle element.
  - **Throws**
    * `javax.xml.xpath.XPathExpressionException` – @see XPathExpressionException

- **deleteVehicle**

```
public org.w3c.dom.Document deleteVehicle(java.lang.Integer id)
    throws javax.xml.xpath.XPathExpressionException
```

- **Description**
  Method for deleting an element of type vehicle based on a given id. The querying to find the vehicle whose specific id is the requested one is done by passing the following xPath expression to the XPathUtils object: "//vehicle[@id=%s]" If the requested vehicle is found, it will be removed from its parent in the XML document.
- **Parameters**
  - `id` – Integer: id for finding the requested vehicle.
- **Returns** – Document: The XML document which has the requested vehicle deleted.
- **Throws**
  - `javax.xml.xpath.XPathExpressionException` – @see XPathExpressionException

- **getAllVehicles**

```
public org.w3c.dom.NodeList getAllVehicles() throws javax.xml.
    xpath.XPathExpressionException
```

  - **Description**
    Method for querying for all available vehicles, taken from the parent XML document. The querying is done by passing the following xPath expression to the XPathUtils object: "/vehicles-root/vehicles/vehicle"
  - **Returns** – NodeList: A list of Nodes representing all the matched elements found by the query.
  - **Throws**
    - `javax.xml.xpath.XPathExpressionException` – @see XPathExpressionException

- **getVehicle**

```
public org.w3c.dom.Node getVehicle(java.lang.Integer vehicle_id)
    throws javax.xml.xpath.XPathExpressionException
```

  - **Description**
    Method for finding a vehicle based on a given id. The querying is done by passing the searched id in the following xPath expression, and passing the expression to the XPathUtils class: "//vehicle[@id=%s]" The vehicle whose id matches the required id will be returned.
  - **Parameters**
    - `vehicle_id` – Integer: Searched vehicle id.
  - **Returns** – Node: If the vehicle with the requested id has been found, it will be returned.
  - **Throws**

    * `javax.xml.xpath.XPathExpressionException` – @see XPathExpressionException

- **replaceVehicle**

  public org.w3c.dom.Document replaceVehicle(java.lang.Integer id, Models.Vehicle vehicle) **throws** javax.xml.xpath.XPathExpressionException

  - **Description**

    Method for replacing an element of type vehicle with a new Vehicle, based on a given id. The querying to find the requested vehicle to be replaced will be done by using the existent getVehicle(Integer id) method. If the vehicle is found, a new vehicle is created with the new requirements and the parent will now replace the old vehicle with the new one.

  - **Parameters**
    * `id` – Integer: id for finding the requested vehicle.
    * `vehicle` – Vehicle: Replacement for the old vehicle element.
  - **Returns** – Document: The XML document which has the requested vehicle replaced.
  - **Throws**
    * `javax.xml.xpath.XPathExpressionException` – @see XPathExpressionException

2.4.6 Members inherited from class Interactor

`core.Interactor` (in 2.1, page 7)

- `protected` **document**
- `public Document` **getDocument**`()`
- `public void` **prettyPrintNode**`(org.w3c.dom.Node` **node**`)`
- `public void` **prettyPrintNodeList**`(org.w3c.dom.NodeList` **nodeList**`)`
- `protected` **putils**
- `public void` **SaveDocument**`(java.lang.String` **location**`) throws javax.xml.transform.TransformerException`
- `protected` **xputils**

Chapter 3

Package Models

Package Contents *Page*

Classes

3.1 Class Arrival

3.1.1 Declaration

```
public class Arrival
 extends java.lang.Object
```

3.1.2 Field summary

station
time

3.1.3 Constructor summary

Arrival()
Arrival(TransportStation, Time)

3.1.4 Method summary

toString()

3.1.5 Fields

- `public TransportStation` **station**
- `public Time` **time**

3.1.6 Constructors

- **Arrival**

```
public Arrival()
```

- **Arrival**

```
public Arrival(TransportStation station,Time t)
```

3.1.7 Methods

- **toString**

```
public java.lang.String toString()
```

3.2 Class Direction

3.2.1 Declaration

```
public class Direction
 extends java.lang.Object
```

3.2.2 Field summary

arrivals
way

3.2.3 Constructor summary

Direction()
Direction(int, ArrayList)

3.2.4 Fields

- `public int` **way**
- `public java.util.ArrayList` **arrivals**

3.2.5 Constructors

- **Direction**

```
public Direction()
```

- **Direction**

```
public Direction(int way,java.util.ArrayList arrivals)
```

3.3 Class StationsWrapper

3.3.1 Declaration

```
public class StationsWrapper
 extends java.lang.Object
```

3.3.2 Field summary

transport_stations

3.3.3 Constructor summary

StationsWrapper()

3.3.4 Method summary

getArticles()
setArticles(List)

3.3.5 Fields

- `private java.util.List` **transport_stations**

3.3.6 Constructors

- **StationsWrapper**

```
public StationsWrapper()
```

3.3.7 Methods

- **getArticles**

```
public java.util.List getArticles()
```

- **setArticles**

```
public void setArticles(java.util.List transport_stations)
```

3.4 Class Time

3.4.1 Declaration

```
public class Time
 extends java.lang.Object
```

3.4.2 Field summary

time

3.4.3 Constructor summary

Time()
Time(String)

3.4.4 Method summary

toString()

3.4.5 Fields

- `public java.lang.String` **time**

3.4.6 Constructors

- **Time**

```
public Time()
```

- **Time**

```
public Time(java.lang.String time)
```

3.4.7 Methods

- **toString**

```
public java.lang.String toString()
```

3.5 Class TimeTable

3.5.1 Declaration

```
public class TimeTable
 extends java.lang.Object
```

3.5.2 Field summary

direction
vehicleID

3.5.3 Constructor summary

TimeTable()

3.5.4 Fields

- `public int` **vehicleID**
- `public java.util.ArrayList` **direction**

3.5.5 Constructors

- **TimeTable**

```
public TimeTable()
```

3.6 Class TimetablesWrapper

3.6.1 Declaration

```
public class TimetablesWrapper
 extends java.lang.Object
```

3.6.2 Field summary

timeTables

3.6.3 Constructor summary

TimetablesWrapper()

3.6.4 Method summary

getArticles()
setArticles(List)

3.6.5 Fields

- `private java.util.List` **timeTables**

3.6.6 Constructors

- **TimetablesWrapper**

```
public TimetablesWrapper()
```

3.6.7 Methods

- **getArticles**

```
public java.util.List getArticles()
```

- **setArticles**

```
public void setArticles(java.util.List timetables)
```

3.7 Class TransportStation

3.7.1 Declaration

```
public class TransportStation
 extends java.lang.Object
```

3.7.2 Field summary

friendlyStationName
gmaps_links
info_comments
is_invalid
junctionName
lat
lineID
lineName
longitude
rawStationName
shortStationName
stationID

verification_date
verified

3.7.3 Constructor summary

TransportStation()
TransportStation(int)
TransportStation(int, String, int, String, String, String, String, double, double, Boolean, String, String, String, String)

3.7.4 Method summary

toString()

3.7.5 Fields

- `public int` **lineID**
- `public int` **stationID**
- `public java.lang.String` **lineName**
- `public java.lang.String` **rawStationName**
- `public java.lang.String` **friendlyStationName**
- `public java.lang.String` **shortStationName**
- `public java.lang.String` **junctionName**
- `public double` **lat**
- `public double` **longitude**
- `public java.lang.Boolean` **is_invalid**
- `public java.lang.String` **verified**
- `public java.lang.String` **verification_date**
- `public java.lang.String` **gmaps_links**
- `public java.lang.String` **info_comments**

3.7.6 Constructors

- **TransportStation**

```
public TransportStation()
```

- **TransportStation**

```
public TransportStation(int station_id)
```

- **TransportStation**

```
public TransportStation(int lineID, java.lang.String lineName, int
    stationID, java.lang.String rawStationName, java.lang.String
    friendlyStationName, java.lang.String shortStationName, java.
    lang.String junctionName, double lat, double longitude, java.
    lang.Boolean is_invalid, java.lang.String verified, java.lang.
    String verification_date, java.lang.String gmaps_links, java.
    lang.String info_comments)
```

3.7.7 Methods

- **toString**

```
public java.lang.String toString()
```

3.8 Class Vehicle

Class which holds the implementation for a vehicle object.

3.8.1 Declaration

```
public class Vehicle
 extends java.lang.Object
```

3.8.2 Field summary

vehicleID
vehicleName
vehicleType

3.8.3 Constructor summary

Vehicle()
Vehicle(int, String, String) Constructor for the Vehicle class.

3.8.4 Method summary

toString() Override of string form for a vehicle object.

3.8.5 Fields

- `public int` **vehicleID**
- `public java.lang.String` **vehicleName**
- `public java.lang.String` **vehicleType**

3.8.6 Constructors

- **Vehicle**

```
public Vehicle()
```

- **Vehicle**

```
public Vehicle(int id,java.lang.String name,java.lang.String
    type)
```

  - **Description**
    Constructor for the Vehicle class.
  - **Parameters**
    - `id` – Unique id for the vehicle object.
    - `name` – Name of the vehicle.
    - `type` – Type of the vehicle.

3.8.7 Methods

- **toString**

```
public java.lang.String toString()
```

  - **Description**
    Override of string form for a vehicle object.
  - **Returns** – Pretty printed format of a vehicle instance.

3.9 Class VehiclesWrapper

Class which holds the wrapper for the Vehicle object.

3.9.1 Declaration

```
public class VehiclesWrapper
 extends java.lang.Object
```

3.9.2 Field summary

vehicles

3.9.3 Constructor summary

VehiclesWrapper() Constructor of the VehicleWrapper class.

3.9.4 Method summary

getArticles() Method which returns all the vehicles which appear in the XML document.
setArticles(List) Set a list of vehicles.

3.9.5 Fields

- `private java.util.List` **vehicles**

3.9.6 Constructors

- **VehiclesWrapper**

```
public VehiclesWrapper()
```

  - **Description**
    Constructor of the VehicleWrapper class. Creates the vehicles list.

3.9.7 Methods

- **getArticles**

```
public java.util.List getArticles()
```

  - **Description**
    Method which returns all the vehicles which appear in the XML document.
  - **Returns** – All found elements of type Vehicle.

- **setArticles**

```
public void setArticles(java.util.List vehicles)
```

  - **Description**
    Set a list of vehicles.
  - **Parameters**
    * `vehicles` – A list of elements of type Vehicle.