

Assignment (4)

JDBC: Java Database Connectivity

Members:

Gamal Abdelhamid Ghanem (23)

Sherif Mohamed Abdelrahman (37)

Shaban Sheta (38)

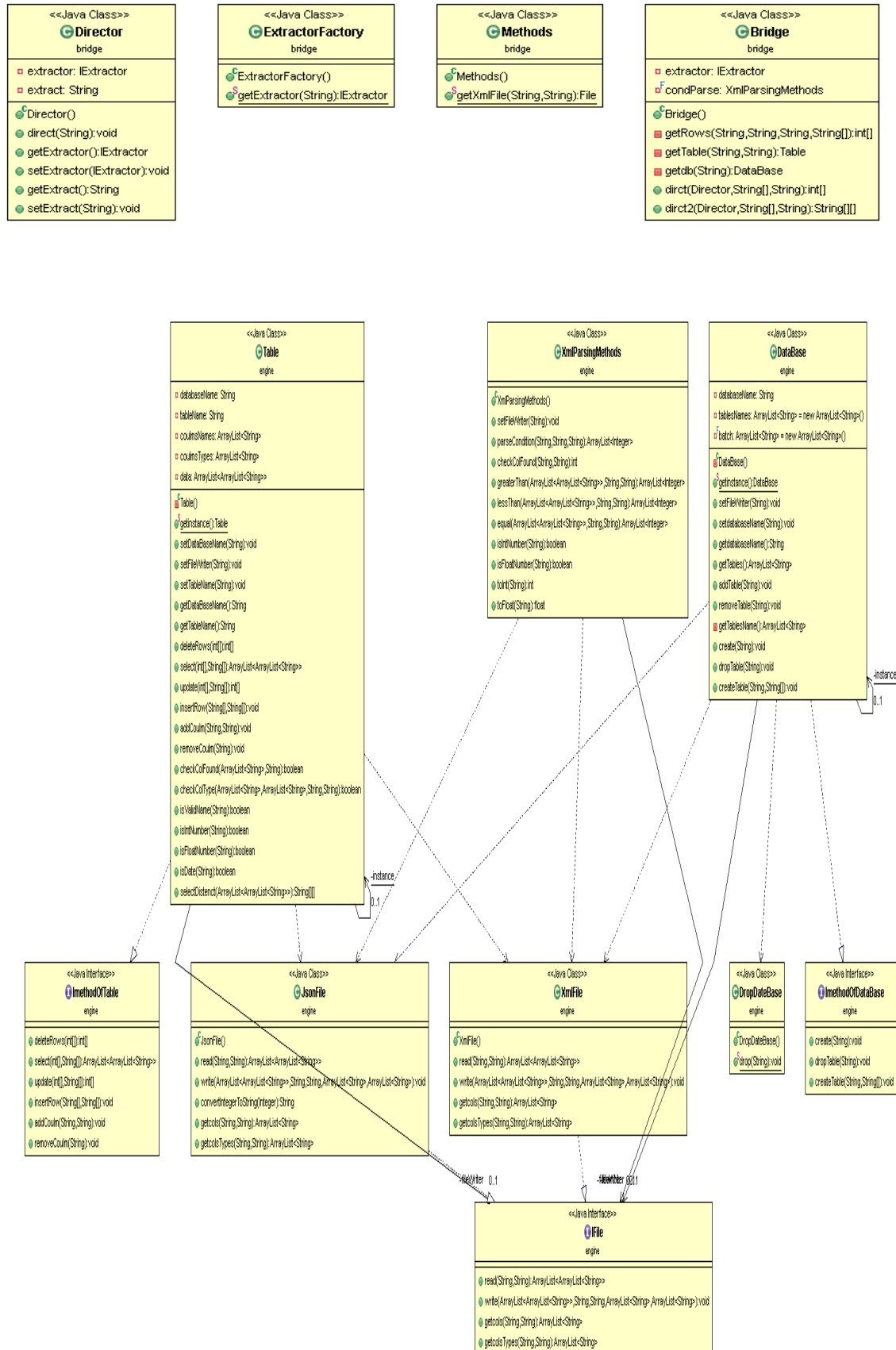
Omar Ahmed Wasfy(42)

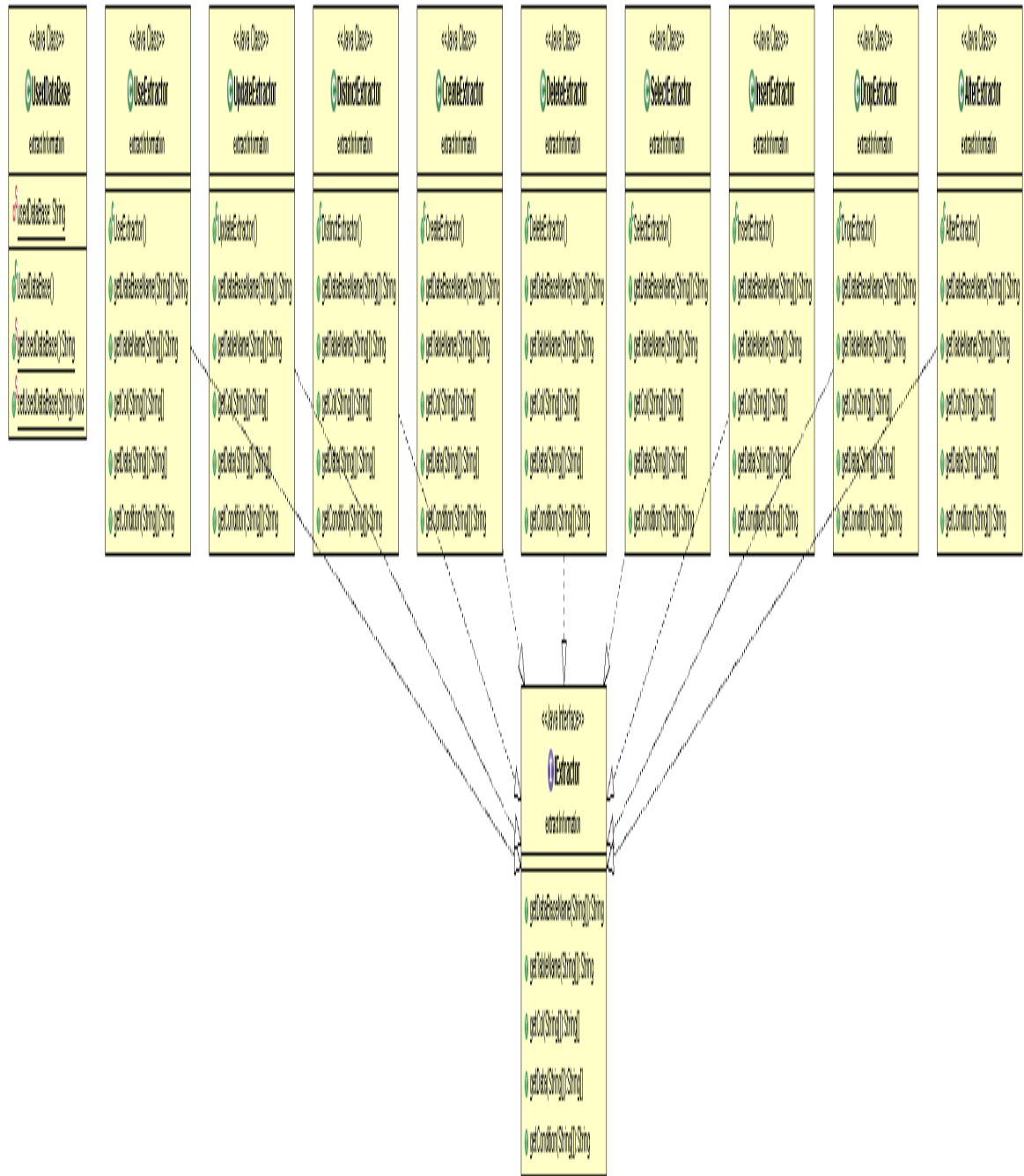
Mostafa Tarek (74)

Contents:

- i. UML Diagram.
- ii. Design Description.
- iii. Decisions and Assumptions.
- iv. User Guide.

■ UML Diagram





[illegible]

■ Design Description

The whole project now is consisted of two main parts; DBMS and JDBC part.

The DBMS's design and functionalities were accomplished in the last phase but we had to improve the design to enable editing and adding new features to the project like saving in json files instead of xml and adding new sql queries. The new design of DBMS is indirectly consisted of two main parts:

- i. The parser which validates the input queries and extracts the data from these queries to pass it to table functions.
- ii. The functionality part which also has two main parts:
 - i. The file input/output part which is an interface containing reading and writing methods and two classes implementing this interface in Jason and xml format depending on the user's desire.
 - ii. The table functions which operate on an input 2D array list as the table data. This array is returned from the 'readFile' method of file interface so these functions are independent of the file format we are reading or writing to.

The JDBC contains five classes implementing the main 5 interfaces of JDBC:

- **java.sql.Driver:** validates URL and creates a connection which is xml or Json based.
- **java.sql.Connection:** implements some of Connection interface methods.
- **java.sql.Statement:** implements some of statement interface methods
- **java.sql.ResultSet:** enables getting and manipulating data of returned rows from the select query.
- **java.sql.ResultSetMetaData:** provides the information about the result set like number of columns and types of stored data.

■ Decisions and Assumptions

- There are no assumptions related to the functionalities due to the existence of the online tester so we were to follow specified criteria.
- We just used 'info' and 'error' in logging operations.

- snapshots:

Provided here a screen shot of the logs' file

```
1 Dec 17, 2016 9:56:12 PM logging.Log log
2 INFO: you choose xml or json
3 Dec 17, 2016 9:56:12 PM logging.Log log
4 INFO: use xml file
5 Dec 17, 2016 9:56:12 PM logging.Log log
6 INFO: DataBase Created
7 Dec 17, 2016 9:56:12 PM logging.Log log
8 INFO: use xml file
9 Dec 17, 2016 9:56:12 PM logging.Log log
10 INFO: table table_name13 created
11 Dec 17, 2016 9:56:12 PM logging.Log log
12 INFO: insert statement executed
13 Dec 17, 2016 9:56:12 PM logging.Log log
14 INFO: insert statement executed
15 Dec 17, 2016 9:56:12 PM logging.Log log
16 INFO: insert statement executed
17 Dec 17, 2016 9:56:12 PM logging.Log log
18 INFO: insert statement executed
19 Dec 17, 2016 9:56:12 PM logging.Log log
20 INFO: select query success
21 Dec 17, 2016 9:56:12 PM logging.Log log
22 INFO: select query success
23 Dec 17, 2016 9:56:12 PM logging.Log log
24 INFO: connection closed
25 Dec 17, 2016 9:56:12 PM logging.Log log
26 INFO: you choose xml or json
27 Dec 17, 2016 9:56:12 PM logging.Log log
28 INFO: use xml file
29 Dec 17, 2016 9:56:12 PM logging.Log log
30 INFO: DataBase Created
31 Dec 17, 2016 9:56:12 PM logging.Log log
32 INFO: use xml file
33 Dec 17, 2016 9:56:12 PM logging.Log log
34 INFO: table table_name3 created
35 Dec 17, 2016 9:56:12 PM logging.Log log
36 INFO: insert statement executed
37 Dec 17, 2016 9:56:12 PM logging.Log log
38 INFO: insert statement executed
```

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10	INFO: table table_name13 created
11	Dec 17, 2016 9:56:12 PM logging.Log log
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28	INFO: use xml file
29	Dec 17, 2016 9:56:12 PM logging.Log log
30	INFO: DataBase Created
31	Dec 17, 2016 9:56:12 PM logging.Log log
32	INFO: use xml file
33	Dec 17, 2016 9:56:12 PM logging.Log log
34	INFO: table table_name8 created
35	Dec 17, 2016 9:56:12 PM logging.Log log
36	INFO: insert statment executed
37	Dec 17, 2016 9:56:12 PM logging.Log log
38	INFO: insert statment executed