

DatabaseOperations.java

```
1 package cecs323.jdbcproject.interconnect;
2
3 import cecs323.jdbcproject.pojos.Book;
11
12 /**
13  * The DatabaseOperations interface defines the interface for a class that can
14  * perform operations on the database.
15  *
16  * @author Nicholas Utz
17  */
18 public interface DatabaseOperations {
19     /**
20      * Returns a {@link List} of Strings, containing the titles of all of the
21      * entries in the Books table.
22      *
23      * @return list of book titles
24      */
25     public List<String> listBookTitles() throws SQLException;
26
27     /**
28      * Returns a {@link List} of {@link Book}s, containing all of the
29      * information in the Books table.
30      *
31      * @return list of all books
32      */
33     public List<Book> listBooks() throws SQLException;
34
35     /**
36      * Returns a {@link Book} storing all of the data pertaining to the book
37      * with the given title, written by the WritingGroup with the given name.
38      *
39      * @param title the title of the book to fetch
40      * @param writingGroup the writing group that wrote the book to fetch
41      * @return book info
42      */
43     public Book getBook(String title, String writingGroup) throws SQLException;
44
45     /**
46      * Returns a {@link Book} storing all of the data pertaining to the book
47      * with the primary key data.
48      *
49      * @param key the key data of the book to fetch
50      * @return book info
51      */
52     public Book getBook(BookKeyData key) throws SQLException;
53
54     /**
55      * Returns a {@link BookDetail} object, containing all available data
56      * pertaining to the book with the given title, written by the given writing
57      * group, including the publisher and writing group.
58      *
59      * @param title the title of the book to fetch
60      * @param writingGroup the writing group name of the book to fetch
61      * @return book details
62      */
63     public BookDetail getBookDetails(String title, String writingGroup) throws SQLException;
64
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65  /**
66   * Returns a {@link BookDetail} object, storing all of the data pertaining
67   * to the book with the given primary key data, and the publisher and
68   * writing group of the book.
69   *
70   * @param key the key of the book to fetch
71   * @return book details
72   */
73  public BookDetail getBookDetails(BookKeyData key) throws SQLException;
74
75  /**
76   * Inserts the given book into the books table.
77   *
78   * @param book the book to insert
79   * @throws SQLException if a SQLException occurs while attempting to insert
80   */
81  public void insertBook(Book book) throws SQLIntegrityConstraintViolationException,
82  SQLException;
83
84  /**
85   * Replaces the given old publisher name with a new one, for all books
86   * published by the old publisher.
87   *
88   * @param oldName the name of the publisher to be replaced
89   * @param newName the name of the publisher replacing the old one
90   * @throws SQLException if a SQLException occurs while updating
91   */
92  public void replacePublisher(String oldName, String newName)
93  throws SQLIntegrityConstraintViolationException, SQLException;
94
95  /**
96   * Deletes the book with the given title and writing group from the books
97   * table.
98   *
99   * @param title the title of the book to delete
100  * @param writingGroup the writing group who wrote the book to delete
101  * @throws SQLException if a SQLException occurs while deleting
102  */
103  public void deleteBook(String title, String writingGroup) throws SQLException;
104
105  /**
106   * Deletes the book with the given primary key data from the books table.
107   *
108   * @param key the primary key data of the book to delete
109   * @throws SQLException if a SQL exception occurs while deleting
110   */
111  public void deleteBook(BookKeyData key) throws SQLException;
112
113  /**
114   * Returns a {@link List} of {@link String}s, representing the names of all
115   * of the entries in the Publishers table.
116   *
117   * @return list of publisher names
118   */
119  public List<String> listPublisherNames() throws SQLException;
120  /**
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```
121     * Returns a {@link List} of {@link Publisher}s, representing all of the
122     * data in the Publishers table.
123     *
124     * @return list of publishers
125     */
126     public List<Publisher> listPublishers() throws SQLException;
127
128     /**
129     * Returns a {@link Publisher} object, storing all the data stored for the
130     * publisher with the given name in the Publishers table.
131     *
132     * @param name the name of the publisher to fetch
133     * @return publisher info
134     */
135     public Publisher getPublisher(String name) throws SQLException;
136
137     /**
138     * Inserts a new entry into the Publishers table, using the given
139     * {@link Publisher} as a source of attribute data.
140     *
141     * @param info the info of the publisher to insert
142     * @throws java.sql.SQLException if a SQLException occurs while inserting
143     */
144     public void insertPublisher(Publisher info) throws
SQLIntegrityConstraintViolationException, SQLException;
145
146     /**
147     * Deletes the Publisher with the given name from the publishers table.
148     *
149     * @param name the name of the publisher to delete
150     * @throws SQLIntegrityConstraintViolationException if there is a Book
151     *         dependent on the named publisher
152     * @throws SQLException if there is a problem deleting the publisher
153     */
154     public void deletePublisher(String name) throws SQLIntegrityConstraintViolationException,
SQLException;
155
156     /**
157     * Returns a {@link List} of Strings, containing the names of all of the
158     * WritingGroups in the WritingGroups table.
159     *
160     * @return list of writing groups' names
161     */
162     public List<String> listWritingGroupNames() throws SQLException;
163
164     /**
165     * Returns a {@link List} of {@link WritingGroup}s, representing all of the
166     * data in the WritingGroups table.
167     *
168     * @return list of WritingGroups
169     */
170     public List<WritingGroup> listWritingGroups() throws SQLException;
171
172     /**
173     * Returns a {@link WritingGroup} object containing the data stored in the
174     * WritingGroups table for the WritingGroup with the given name.
175     *
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```
176     * @param name the name of the WritingGroup to fetch
177     * @return writing group info
178     * @throws NullPointerException if there is no entry in the writing groups
179     *         table with the given name.
180     */
181     public WritingGroup getWritingGroup(String name) throws SQLException;
182
183     /**
184     * Inserts a row in the WritingGroups table with the attribute values stored
185     * in the given {@link WritingGroup} object.
186     *
187     * @param group the writing group to insert
188     * @throws SQLException if an exception is thrown while trying to insert
189     */
190     public void insertWritingGroup(WritingGroup group) throws
191     SQLIntegrityConstraintViolationException, SQLException;
192
193     /**
194     * Deletes the writing group with the given name.
195     *
196     * @param groupName the name of the writing group to delete
197     * @throws SQLException if an exception is raised while deleting
198     */
199     public void deleteWritingGroup(String groupName) throws
200     SQLIntegrityConstraintViolationException, SQLException;
```