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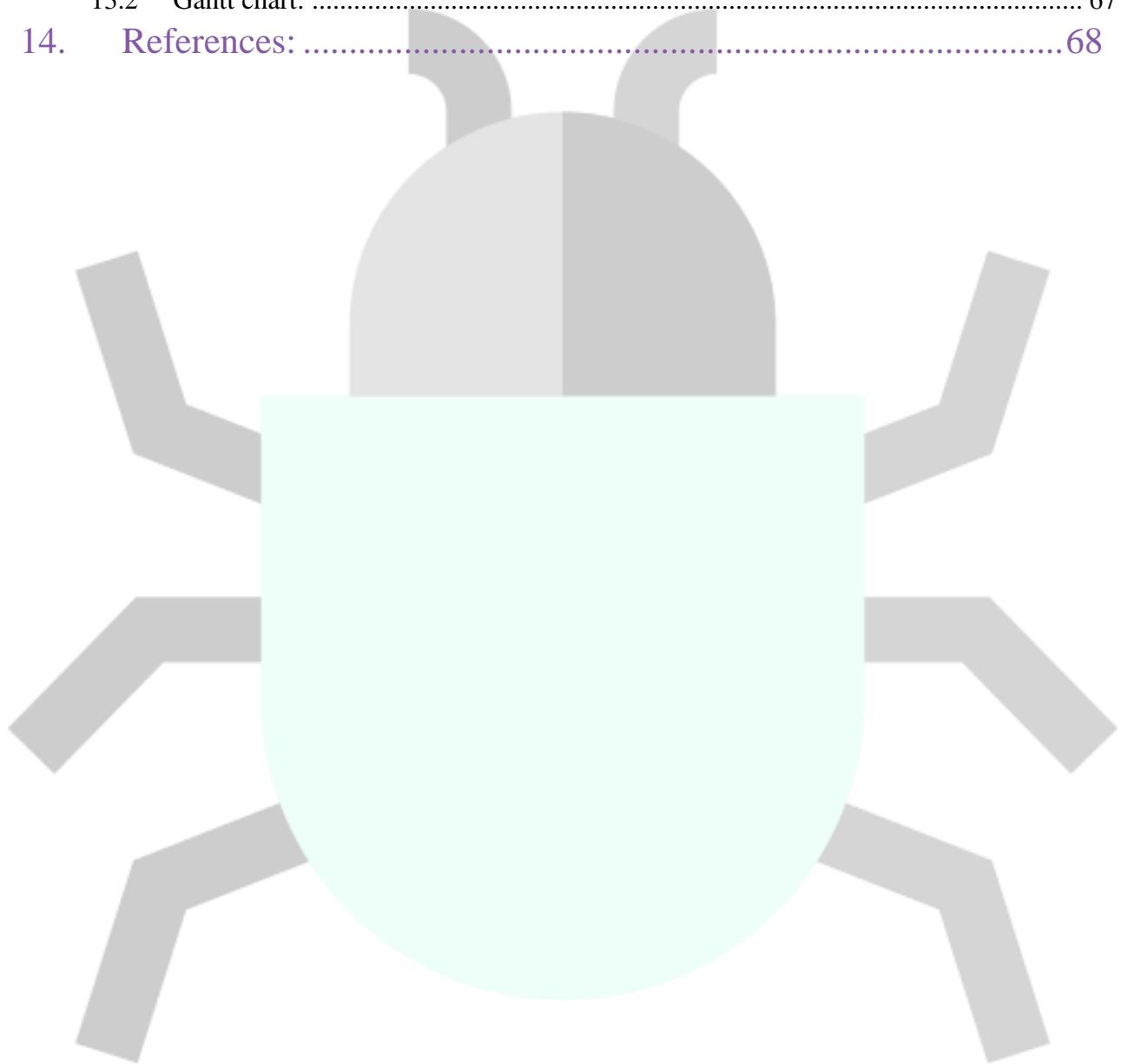
Under supervision of
DR/Mañal showman

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1. Preface:

1.1 Document Purpose:

- Through this document, a complete and detailed specification of the Bug Tracker System will be provided, making it possible to understand the ins and outs of the software and what each user will be able to achieve by using it.
- In the first section, an overview of the system will be elaborated upon, and then each part of the system will be discussed in more detail in the following sections.

1.2 Target Users:

- This document is authored by system engineers based on the requirement obtained from the senior software engineers, developers and testers of the company that issued the development of the system.
- The document is to be approved and acknowledged by the CEO, senior SW engineers, developer, testers, and the crew working on developing the project.

1.3 Revision History:

| Version | Author | Description | Date |
|---------|-------------------------|---|-----------|
| 0.1 | All members of the team | Initial | 23-7-2022 |
| 0.2 | Mariam Mohamed | Some functional requirements changes | 3-8-2022 |
| 0.3 | Mahmoud Ehab | Some changes in system functions | 6-8-2022 |
| 0.4 | Ahmed Khaled | Some changes in non-functional requirements | 9-8-2022 |
| 0.5 | Mariam Mohamed | Work plan is added | 12-8-2022 |
| 0.6 | Mahmoud Ehab | Minor changes in system functional requirements | 21-8-2022 |
| 0.7 | Mahmoud Ehab | Class diagram is updated | 21-8-2022 |
| 0.8 | Ahmed Khaled | Use case diagram is updated | 21-8-2022 |

| | | | |
|------------|----------------|------------------------------|----------|
| 0.9 | Ahmed Khaled | Small change in stakeholders | 2-9-2022 |
| 1.0 | Mariam Mohamed | User interface is updated | 2-9-2022 |

2. Introduction:

2.1 Purpose:

- purpose of the software is to track bugs and allow the end user to manage bugs and store them if they ever appear in other projects.

2.2 Scope:

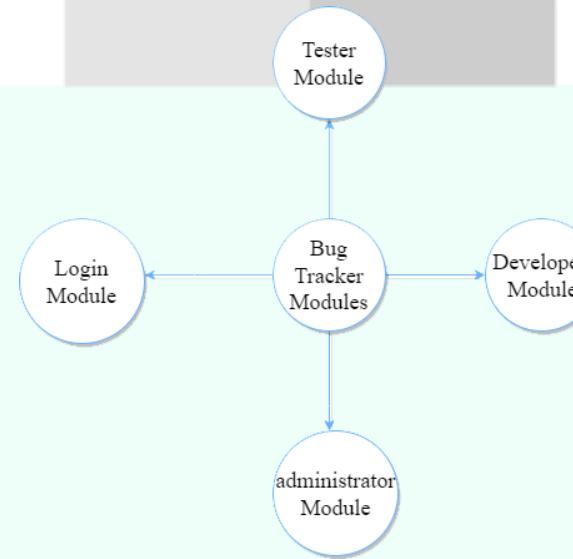


Figure 1 : System Modules hierarchy

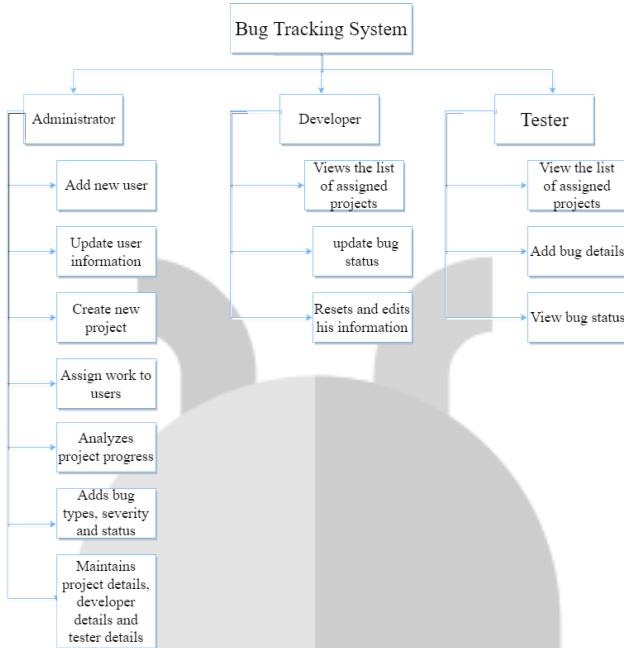


Figure 2 : System Functions hierarchy

2.3 Overview:

- The document is organized as follows:
 - an overview description of the bug tracker system and its high-level functions are presented (section 2.1 and 2.2).
 - section 4 state types of users who can use bug tracker.
 - Section 5 in the document provides user requirement definitions.
 - Section 6 in the document provides system architecture.
 - Section 7 in the document provides a detailed description of the system functions and requirements.
 - Section 8 in the document provides interface requirement.
 - Section 9 in the document provides the system non functions and requirements.
 - Section 10 presents some helping information and diagrams that will facilitate the understanding of the contents.
 - Section 11 in the document provides system evolution.
 - Section 12 in the document provides future work.
 - Section 13 in the document provides time plan.
 - Section 14 in the document provides appendices.
 - Finally, Section 15 in the document provides references.

3. Glossary:

3.1 Acronyms, definitions, and abbreviations:

- **FOEHU:** Faculty of Engineering, Helwan University.
- **BTS:** Bug Tracker System.

- **User:** Developer or tester who uses the application.

4. System Users:

4.1 System stakeholders:

- System Engineer.
 - Responsible for gathering requirements.
 - Responsible for development.
 - Responsible for support.
- Administrator:
 - Adds new users.
 - Updates users' information.
 - Deletes users.
 - Creates projects.
 - Assigns projects to users.
 - Deletes projects.
 - Adds bug types and severity.
 - Monitors user activity.
 - Views failed login attempts.
- Developer:
 - Views the list of assigned projects.
 - Responsible for updating bug status.
 - Resets and edits his information like passwords.
- Tester:
 - View the list of assigned projects.
 - Adds bug details.
 - View bug status.

4.2 Users objectives:

- System Engineer.
 - Gains experience in software engineering and developments.
- Administrator:
 - Follows up on the work of the users.
- Developer:

- Simplification in finding the assigned work.
- Prevent assigned work mixing.
- Work in an organised environment.

- Tester:

- Simplification in finding the assigned work.
- Prevent assigned work mixing.
- Work in an organised environment.

5. User Requirements definitions:

5.1 System Functions:

- **Login:**

1. Forgot password.

- **Administrator:**

2. View user activities table.
3. View login attempts table.
4. Search through user activity & login attempts tables.
5. View users table.
6. Search through users table.
7. Add new user.
8. Update existing user information.
9. Delete existing user information.
10. Delete all user.
11. View projects table.
12. Search through project table.
13. Create projects & Assign project to user.
14. View bugs table.
15. Add bug details (types and severity).
16. View rate table.

- **Developer:**

17. Reset password.

18. View assigned bugs that its status is in progress.
 19. Update bug status (from in progress to to be tested).
 20. View assigned projects table.
 21. Search through assigned project table.
 22. View assigned bugs table.
 23. View all assigned bugs regardless to its status.
 - **Tester:**
 24. View assigned bugs table that its status is to be tested.
 25. Search through assigned bugs table.
 26. Update bug status (from to be tested into closed).
 27. View assigned projects table.
 28. Search through projects table.
 29. View assigned users of each project assigned to him.
 30. View bugs table for specific project.
 31. Search through bugs table for specific project.
 32. Report bug.
 33. Update bug details.
 34. Delete bug.
 35. View an overview of bugs status in specific project.
- ## 5.2 Constraints:
1. Company Policies:
 - Users must be limited by permissions to insure data confidentiality.
 2. Cultural Constraints:
 - Code must follow company standards.
 3. Technological Limitations:
 - Integration with Git is required to allow database synchronization.
- ## 6. System Architecture:
- We use database to connect between all users of the system and store information.



Figure 3 : System Architecture

7. System Functional requirements:

7.1 Forgot password:

- If anyone of the users forgot their passwords, they could ask for a new password and the Administrator will replace their old passwords with new ones.

7.2 View users activity table:

- **The administrator** will have the ability to view the activities of each user to track the system, monitor the behavior of and progress of users, and change passwords solicited by password reset requests.

7.3 View login attempts table:

- **The administrator** will view the table of login attempts which includes all the requests of users who forgot their passwords and need to change it, or attempts others to breach the system through the login page.

7.4 Search through user activity & login attempts tables:

- **The administrator** can Search through user activity & login attempts table.

7.5 View users table:

- Only **the administrator** can view all the users in the system (company).

7.6 Search through user table:

- The administrator can Search through user table by (name & role).

7.7 Add new user:

- **Only the administrator** can add a new user to the system by adding specific information (Username – Password – Role – ID).

7.8 Update existing user information:

- **The administrator** can update user information.

7.9 Delete existing user information:

- **The administrator** can delete existing user information.

7.10 Delete existing user table:

- **The administrator** can delete existing user table.

7.11 View project table & analyze project progress:

- **The administrator** will have the ability to view a table of all projects in the system and analyze their progress by following the dates.

7.12 Search through project table:

- **The administrator** can Search through project table by (name).

7.13 Create project & assign project to users:

- **Only the administrator** can create a new project to the system and assign to this project a specific number of users be it developers or testers.

7.14 View bug table:

- **The administrator** can view a table of bugs that are created by the tester & assign a developer to solve this bug.

7.15 Search through bug table:

- **The administrator** can Search through project table by (name, severity & type).

7.16 Add bug details (types and severity):

- **The administrator** can add bug types and severity.

7.17 View rate table:

- **The administrator** can view rate table.

7.18 Reset password:

- **Developers** have the access to reset their passwords, but the administrator will receive a notification when this action happens.

7.19 View assigned bugs table that its status is in progress:

- **Developers** have the access to view a table of assigned bugs which status is in progress and needs to be completed.

7.20 Update bug status:

- **Developers:** The developers can update the assigned bug status from in progress into to be tested after adding the solution of this bug.
- **Testers:** The testers can update the assigned bug status from to be tested into closed after reviewing the solution of the developer and make sure that it's the right solution.

7.21 View assigned projects table:

- **Developers & Testers** can view assigned projects table.

7.22 Search through assigned projects table:

- **Developers & Testers** can view assigned projects table by (name – id).

7.23 View assigned bugs table regardless to its status:

- **Developers** can view assigned bugs table regardless to its status and it's used as a

reference for the developer.

7.24 View assigned bugs table that its status is to be tested:

- **Testers** have the access to view a table of assigned bugs which status is to be tested and needs to be completed.

7.25 Search through assigned bugs table:

- **The tester** can Search through project table by (id & name).

7.26 View assigned users of each project:

- **Testers** can view assigned users table of each project that is assigned to him.

7.27 View bugs table for specific project:

- **Only testers** have the access to view bugs table for specific project.

7.28 Search through bugs table of a specific project:

- **Testers** have the access to Search through bugs table of specific project by (id, name , severity & type).

7.29 Report bug:

- **Only testers** have the access to create a new bug and add the details of this bug.

7.30 Update bug details:

- **Only testers** have the access to update bug details.

7.31 Delete bug:

- **Only testers** have the access to delete the bug.

7.32 View an overview of bugs status in a specific project:

- **Only testers** have the access to view an overview of bugs status in a specific project in pie chart and cards.

8. Interface requirements:

8.1 User interfaces:

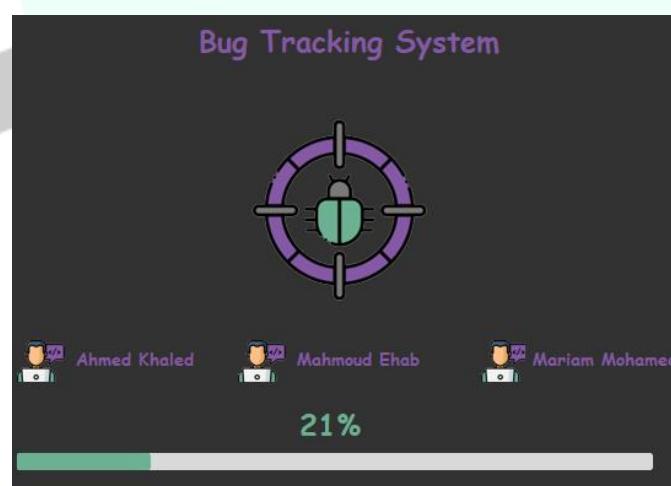


Figure 4 : Loading page

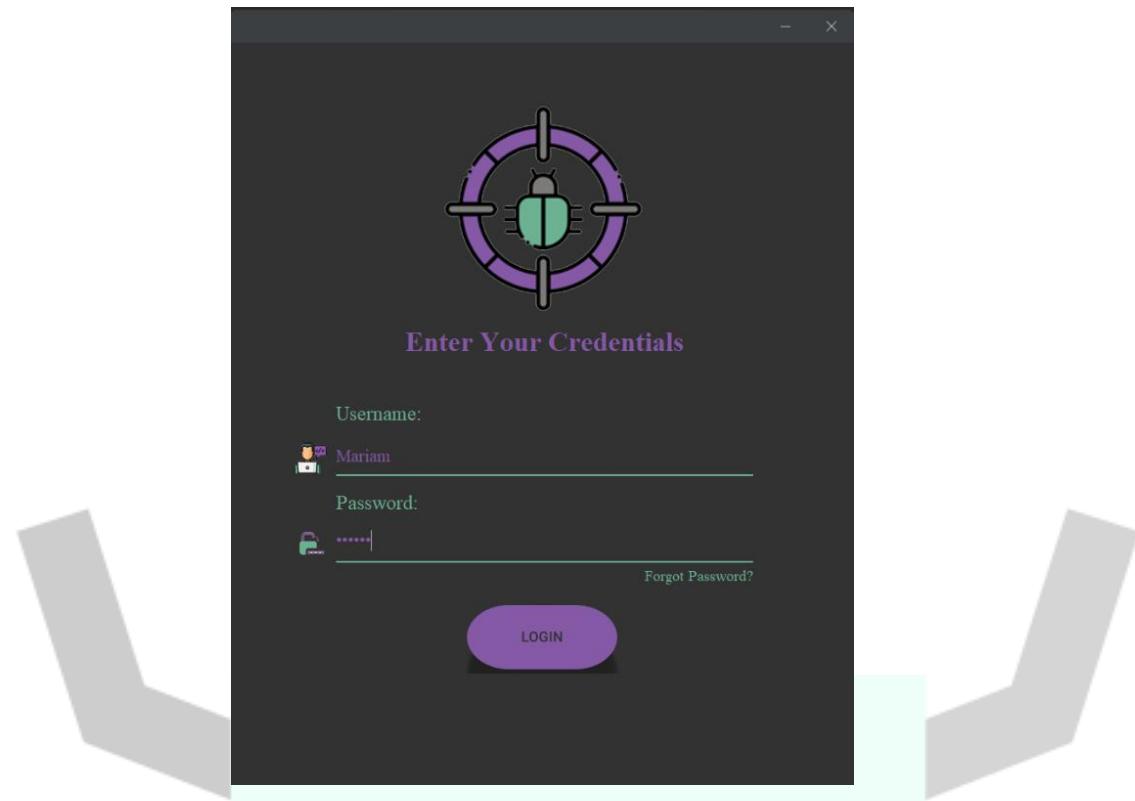


Figure 5 : Login Page

| USERNAME | ROLE | ACTION | DATE | TIME |
|----------|------|-----------|------------|----------|
| Mahmoud | A | Logged in | 2022-09-02 | 21:46:22 |
| Mariam | T | Logged in | 2022-09-02 | 20:21:23 |
| Mariam | T | Logged in | 2022-09-01 | 16:09:34 |
| Mahmoud | A | Logged in | 2022-09-01 | 16:06:04 |
| Mahmoud | A | Logged in | 2022-09-01 | 16:04:23 |
| Mahmoud | A | Logged in | 2022-09-01 | 16:01:31 |
| Mahmoud | A | Logged in | 2022-09-01 | 16:00:20 |
| Mahmoud | A | Logged in | 2022-09-01 | 15:56:48 |
| Mariam | T | Logged in | 2022-09-01 | 15:25:21 |
| Mariam | T | Logged in | 2022-09-01 | 15:24:38 |
| Mariam | T | Logged in | 2022-09-01 | 15:22:30 |
| Mariam | T | Logged in | 2022-09-01 | 15:02:30 |
| Mariam | T | Logged in | 2022-09-01 | 15:00:57 |

Figure 6 : Admin page: Activity & login attempts table

Software Requirements and Specifications for BTS

The screenshot shows the Admin interface. On the left is a sidebar with icons and labels: a user icon labeled 'Mahmoud', a bar chart icon labeled 'Activities', a people icon labeled 'Users' (which is highlighted in purple), a checklist icon labeled 'Projects', a bug icon labeled 'Bugs', and a power button icon labeled 'Logout'. Below the sidebar is a link 'Rating Table'. The main area has a title 'User Table' with a magnifying glass and gear icon. It contains a table with columns: USERID, USERNAME, PASSWORD, ROLE, CREATIONDATE, and CREATIONTIME. The data is as follows:

| USERID | USERNAME | PASSWORD | ROLE | CREATIONDATE | CREATIONTIME |
|--------|----------|-----------|------|--------------|--------------|
| 1 | Mahmoud | Admin | A | 2022-08-18 | 16:43:06 |
| 2 | Ahmed | Developer | D | 2022-08-18 | 16:43:06 |
| 3 | Mariam | Tester | T | 2022-08-18 | 16:43:06 |
| 4 | Maged | Tester | T | 2022-08-23 | 18:53:42 |
| 5 | Arnold | 1235 | D | 2022-08-26 | 18:27:05 |
| 6 | Khaled | Admin | A | 2022-08-23 | 19:55:31 |
| 8 | Marawan | qwerty | T | 2022-08-26 | 21:39:39 |

At the bottom are two buttons: 'Add User' and 'Delete All'.

Figure 7 : Admin page: Users table

The first screenshot shows the 'User Information' dialog with fields for ID (empty), Username (empty), Password (empty), and Role (dropdown menu showing '----'). At the bottom are 'Confirm' and 'Cancel' buttons.

The second screenshot shows the same dialog after editing. The User ID field contains '1', the Username field contains 'Mahmoud', the Password field contains 'Admin', and the Role dropdown menu shows 'Admin'. At the bottom are 'Confirm', 'Delete', and 'Cancel' buttons.

Figure 8 : Admin Page: User information

Software Requirements and Specifications for BTS

The screenshot shows a dark-themed application window titled "Mahmoud". On the left is a sidebar with icons and labels: Activities, Users, Projects (highlighted in purple), Bugs, and Logout. Below the sidebar is a button labeled "Rating Table". The main area contains a table titled "PROJECTS" with columns: PROJECTID, PROJECTNAME, CREATIONDATE, and CREATIONTIME. The table data is as follows:

| PROJECTID | PROJECTNAME | CREATIONDATE | CREATIONTIME |
|-----------|----------------|--------------|--------------|
| 1 | FirstProject | 2022-08-18 | 16:41:28 |
| 2 | SecondProject | 2022-08-18 | 16:41:28 |
| 3 | PROJECT3 | 2022-08-18 | 16:41:28 |
| 4 | PROJECT4 | 2022-08-28 | 23:41:03 |
| 5 | PROJECT5 | 2022-08-28 | 23:44:15 |
| 6 | SixthProject | 2022-08-28 | 23:57:02 |
| 7 | SeventhProject | 2022-08-28 | 23:57:29 |

A search icon is positioned above the table. A green button labeled "Add Project" is located at the bottom right of the main area.

Figure 9:Admin Page: Projects table

The image displays two side-by-side modals titled "Project Information".

Left Modal (Add Mode):

- Project ID:
- Project Name:
- Assign User: Add
- Assigned Users: Remove
- Buttons: Confirm Cancel

Right Modal (Edit Mode):

- Project ID: Edit
- Project Name:
- Assign User: Add
- Assigned Users: Remove
- Buttons: Confirm Delete Cancel

Figure 10 : Admin Page: Project Information

Software Requirements and Specifications for BTS

The screenshot shows a dark-themed administrative interface. On the left, a sidebar contains icons for user profile, activities, users, projects, bugs, and logout, with 'Bugs' highlighted in purple. The main area displays a table titled 'Bugs Table' with the following data:

| BUGID | BUGNAME | PROJECTID | TESTERID | DEVELOPERID | DATEASSIG... | DATERESOL... | TYPE | SEVERITY | STATUS |
|-------|---------|-----------|----------|-------------|--------------|--------------|---------|----------|--------|
| 1 | FullBug | 2 | 3 | 2 | 2022-08-30 | 2022-12-22 | Content | Major | T |
| 2 | GUI Bug | 8 | 3 | 5 | 2022-08-24 | 2022-09-09 | Content | Major | T |
| 3 | Bug1 | 8 | 3 | 2 | 2022-08-30 | 2022-10-19 | Content | Major | T |
| 4 | Bug2 | 1 | 4 | 2 | 2022-09-02 | 2022-09-16 | Content | Major | T |
| 5 | Bug3 | 2 | 3 | 2 | 2022-08-30 | 2022-10-19 | Content | Major | I |
| 6 | Bug4 | 1 | 4 | 2 | 2022-08-30 | 2022-09-24 | Content | Major | I |
| 7 | Bug5 | 2 | 3 | 2 | 2022-08-30 | 2022-09-28 | Content | Major | I |
| 8 | Bug6 | 8 | 8 | 5 | 2022-08-30 | 2022-10-27 | Content | Major | C |
| 9 | BUG 7 | 8 | 8 | 5 | 2022-08-30 | 2022-10-28 | Content | Major | O |
| 10 | Bug10 | 2 | 4 | 5 | 2022-09-02 | 2022-10-27 | Major | Content | C |

Figure 11 : Admin Page: Bugs Table

The dialog box is titled 'Bug Information'. It contains the following fields:

| | | | |
|--------------|---------|-----------|----------|
| Bug ID | 6 | Bug Name | Bug4 |
| Developer ID | 2 | Developer | Ahmed |
| Type | Content | Severity | Critical |

Description: The waiter JFrame has a problem in getting orders as the orders don't reach the kitchen t

Buttons: Confirm, Cancel

Figure 12 : Admin Page: Bug Information

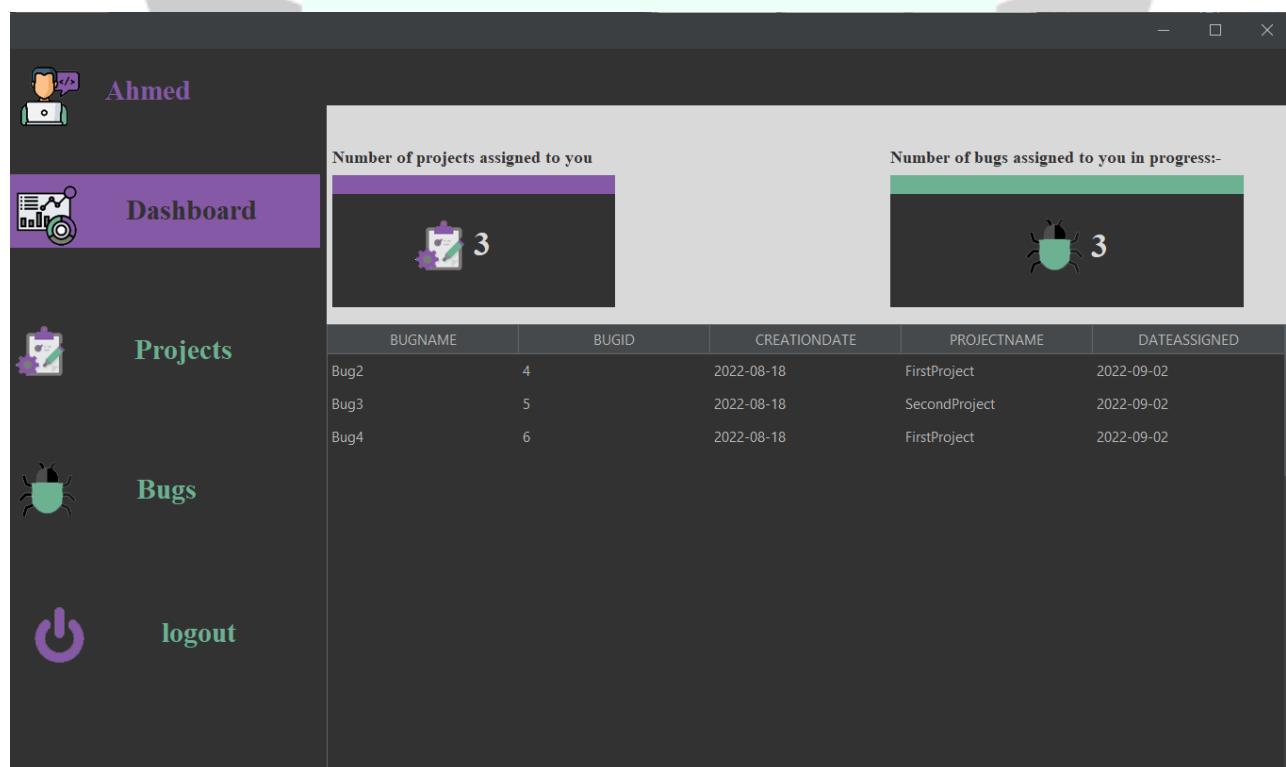


A modal dialog box titled "Rating Table". It features a thumbs-up icon with three stars above the title. The table has four columns: ID, USERNAME, ROLE, and RATE. The data is as follows:

| ID | USERNAME | ROLE | RATE |
|----|----------|------|------|
| 1 | Mahmoud | A | 5 |
| 2 | Mariam | T | 3 |
| 3 | Mahmoud | A | 3 |
| 4 | Mariam | T | 4 |

Cancel

Figure 13 : Rating Page



A developer dashboard interface for a user named "Ahmed". The dashboard includes a sidebar with icons for profile, dashboard, projects, bugs, and logout. The main area displays two summary counts: "Number of projects assigned to you" (3) and "Number of bugs assigned to you in progress" (3). Below these are two tables.

Number of projects assigned to you

| |
|---|
| 3 |
|---|

Number of bugs assigned to you in progress:-

| |
|---|
| 3 |
|---|

Projects Assigned

| BUGNAME | BUGID | CREATIONDATE | PROJECTNAME | DATEASSIGNED |
|---------|-------|--------------|---------------|--------------|
| Bug2 | 4 | 2022-08-18 | FirstProject | 2022-09-02 |
| Bug3 | 5 | 2022-08-18 | SecondProject | 2022-09-02 |
| Bug4 | 6 | 2022-08-18 | FirstProject | 2022-09-02 |

Bugs Assigned

| BUGNAME | BUGID | CREATIONDATE | PROJECTNAME | DATEASSIGNED |
|---------|-------|--------------|---------------|--------------|
| Bug2 | 4 | 2022-08-18 | FirstProject | 2022-09-02 |
| Bug3 | 5 | 2022-08-18 | SecondProject | 2022-09-02 |
| Bug4 | 6 | 2022-08-18 | FirstProject | 2022-09-02 |

Figure 14 : Developer Page: Dashboard

The screenshot shows a dark-themed application window titled 'Bug Details'. At the top left is a green bug icon. The form contains the following fields:

| | | | |
|-----------------|---|-----------|-------------|
| Project ID: | 1 | Status: | IN PROGRESS |
| Bug Name: | Bug2 | | |
| Reporter Name: | Maged | Severity: | Cosmetic |
| Developer Name: | Ahmed | Type: | Visual |
| Description: | It goes to show up the activity of my credit card , it shows only the activity of today not the the activity of the whole month | | |

A purple 'Back' button is located at the bottom right.

Figure 15 : Developer Page: Show bug details

The screenshot shows a dark-themed developer dashboard with a sidebar on the left and a main content area on the right.

Dashboard Sidebar:

- Ahmed**: User profile icon.
- Dashboard**: Home icon.
- Projects**: Project management icon.
- Bugs**: Bug tracking icon.
- logout**: Logout icon.

Main Content Area:

Number of projects assigned to you: 3

| PROJECTID | PROJECTNAME | CREATIONDATE | CREATIONTIME |
|-----------|---------------|--------------|--------------|
| 1 | FirstProject | 2022-08-18 | 16:41:28 |
| 2 | SecondProject | 2022-08-18 | 16:41:28 |
| 8 | Project 8 | 2022-09-02 | 22:26:01 |

Search... icon.

Figure 16 : Developer Page: Projects Table

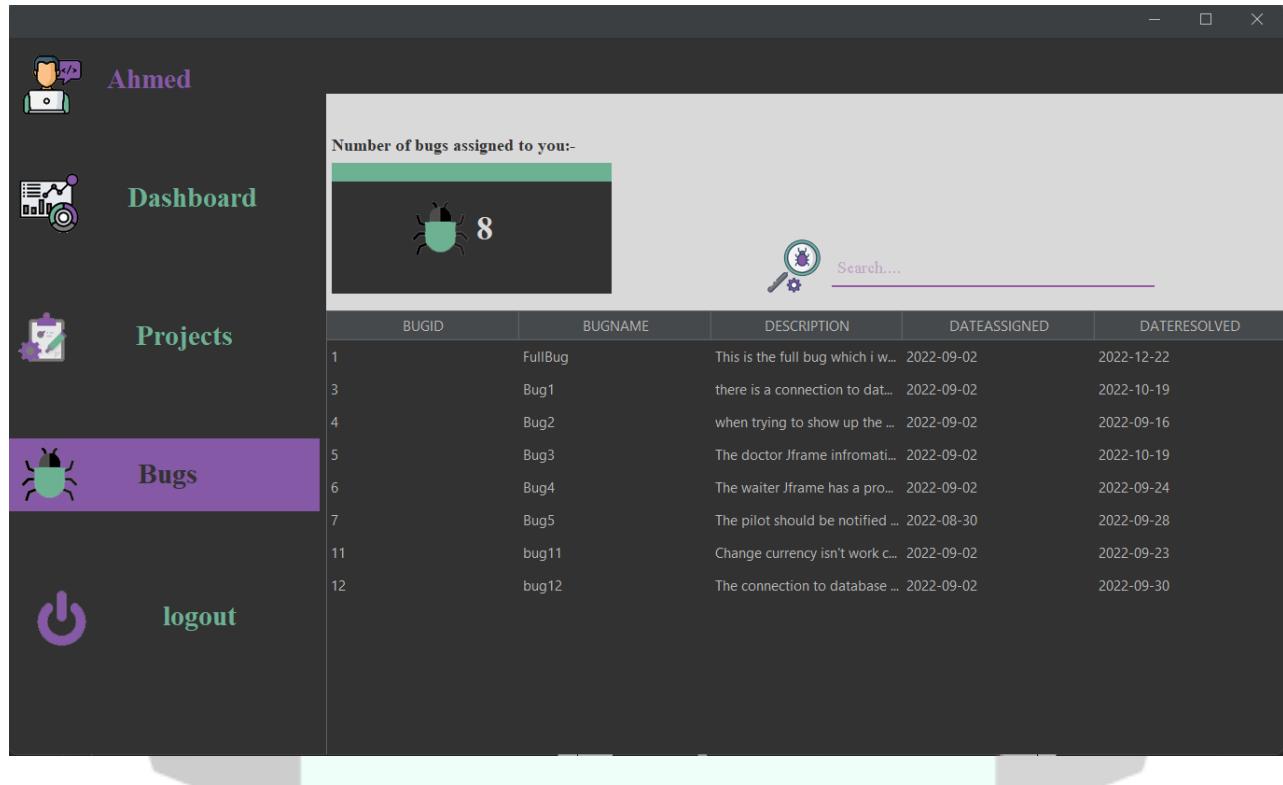


Figure 17 : Developer Page: Bugs Table

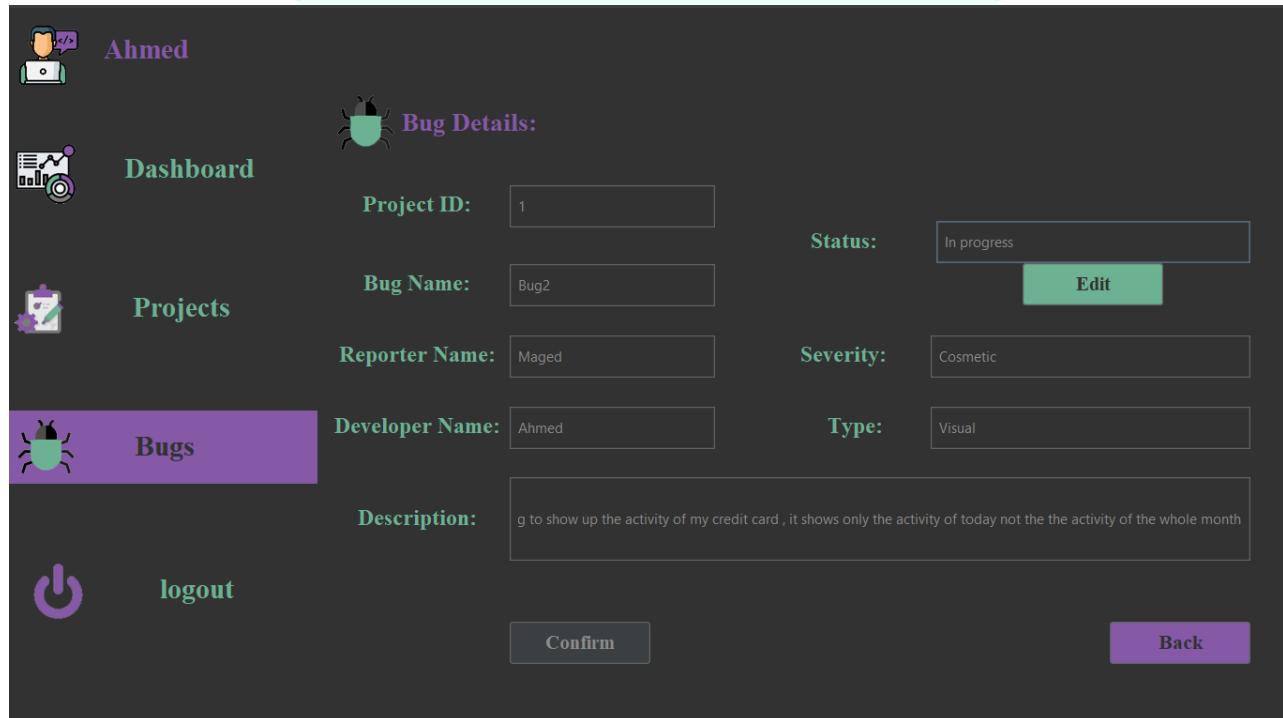


Figure 18 : Developer Page: Change bug status

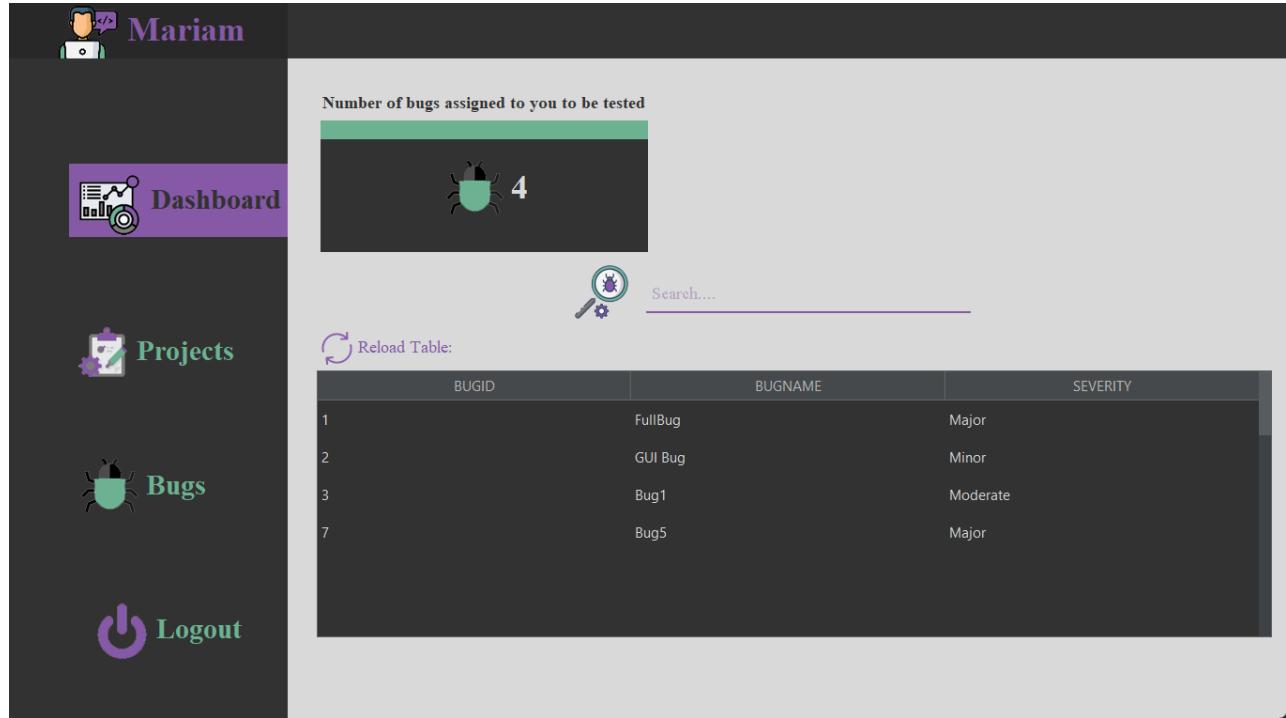


Figure 19 : Tester Page: Dashboard

Bug Information

ProjectID: 1

Name: FullBug

Severity: Major

Type: Functional

Status: To be tested

Description: This is the full bug which i will use to try my code

Buttons: Confirm (gray), Edit (green), Cancel (purple)

Figure 20: Tester Page: Bug Information

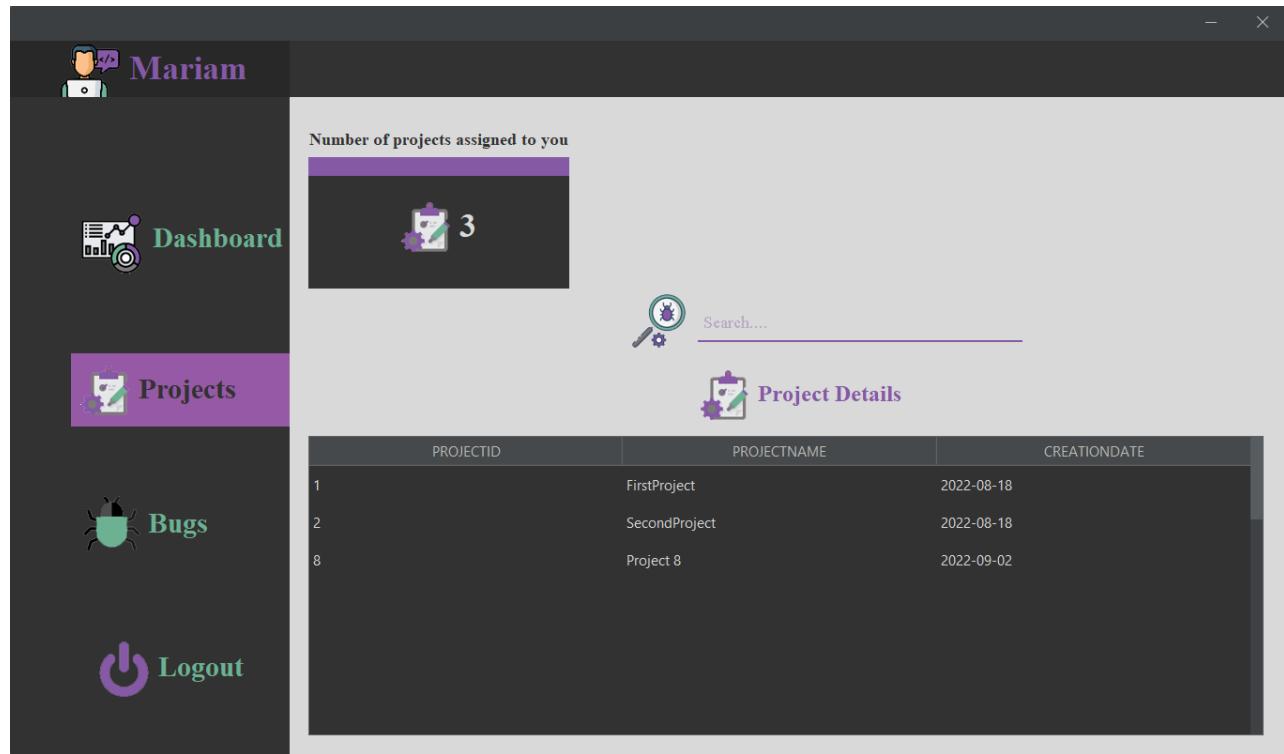


Figure 21 : Tester Page: Project Table

The screenshot shows a modal dialog titled "Assigned people on the same project:" with a user icon. The table lists assigned users:

| USERID | USERNAME | ROLE |
|--------|----------|------|
| 2 | Ahmed | D |
| 3 | Mariam | T |
| 4 | Maged | T |
| 5 | Arnold | D |
| 8 | Marawan | T |

Cancel

Figure 22:Tester Page: Assigned people to the same project

The screenshot shows a dark-themed application interface. On the left, there is a vertical sidebar with icons and labels: 'Mariam' (user icon), 'Dashboard' (bar chart icon), 'Projects' (checklist icon), 'Bugs' (bug icon), and 'Logout' (power icon). The main content area is titled 'Project Details:' and contains a search bar with a magnifying glass icon and a placeholder 'Search....'. Below the search bar is a table with three columns: 'PROJECTID', 'PROJECTNAME', and 'CREATIONDATE'. The table has four rows of data:

| PROJECTID | PROJECTNAME | CREATIONDATE |
|-----------|---------------|--------------|
| 1 | FirstProject | 2022-08-18 |
| 2 | SecondProject | 2022-08-18 |
| 8 | Project 8 | 2022-09-02 |

A tooltip at the bottom right of the table says 'Select a row to show the assigned people in this project'.

Figure 23:Tester Page: Bugs Panel

The screenshot shows a modal window titled 'Bug Table' with a bug icon. At the top is a search bar with a magnifying glass icon and a placeholder 'Search....'. Below the search bar is a table with twelve columns: BUGID, BUGNAME, PROJECTID, TESTERID, DEVELOP..., DESCRIPT..., DATEASS..., DATERES..., SEVERITY, TYPE, STATUS, and CREATI... (partially visible). The table has four rows of data:

| BUGID | BUGNAME | PROJECTID | TESTERID | DEVELOP... | DESCRIPT... | DATEASS... | DATERES... | SEVERITY | TYPE | STATUS | CREATI... |
|-------|---------|-----------|----------|------------|--------------|------------|------------|----------|---------|--------|------------|
| 4 | Bug2 | 1 | 4 | 2 | when tryi... | 2022-09... | 2022-09... | Major | Content | T | 2022-09... |
| 6 | Bug4 | 1 | 4 | 2 | The wait... | 2022-08... | 2022-09... | Major | Content | I | 2022-08... |
| 11 | bug11 | 1 | 3 | 2 | Change c... | 2022-09... | 2022-09... | Content | Major | O | 2022-09... |
| 12 | bug12 | 1 | 3 | 2 | The conn... | 2022-09... | 2022-09... | Content | Major | O | 2022-09... |

At the bottom of the modal are two buttons: 'Add new Bug' and 'Cancel'. The footer of the modal has three tabs: 'Bug Table' (selected), 'Bug Details', and 'Over View'.

Figure 24:Tester Page: View all the bugs in a specific project

Software Requirements and Specifications for BTS

The screenshot shows two instances of a 'Bug Details' form side-by-side. Both forms have a dark header with a bug icon and the title 'Bug Details'. The left form has fields for Project ID (1), Status (To be tested), Bug Name (Bug2), Severity (Major), Reporter Name (Maged), Type (Content), Developer Name (Ahmed), and a large Description text area containing the text: 'show up the activity of my credit card , it shows only the activity of today not the the activity of the whole month'. Below the fields are three buttons: 'Confirm', 'Delete', and 'Cancel'. The right form is similar but with different values: Project ID (1), Status (Open), Bug Name (empty), Severity (empty), Reporter Name (Mariam), Type (empty), Developer Name (empty), and an empty Description field. It also has 'Confirm', 'Delete', and 'Cancel' buttons.

Figure 25:Tester Page: View Bug Details or add new bug

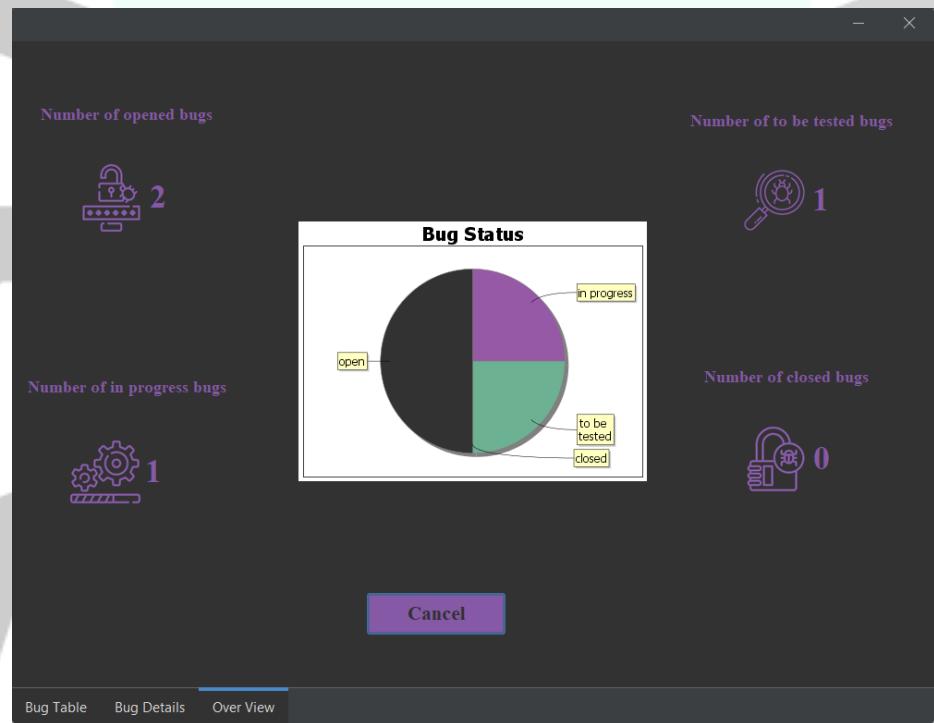


Figure 26:Tester Page: View Overview of Bugs Status

8.2 Software Interfaces:

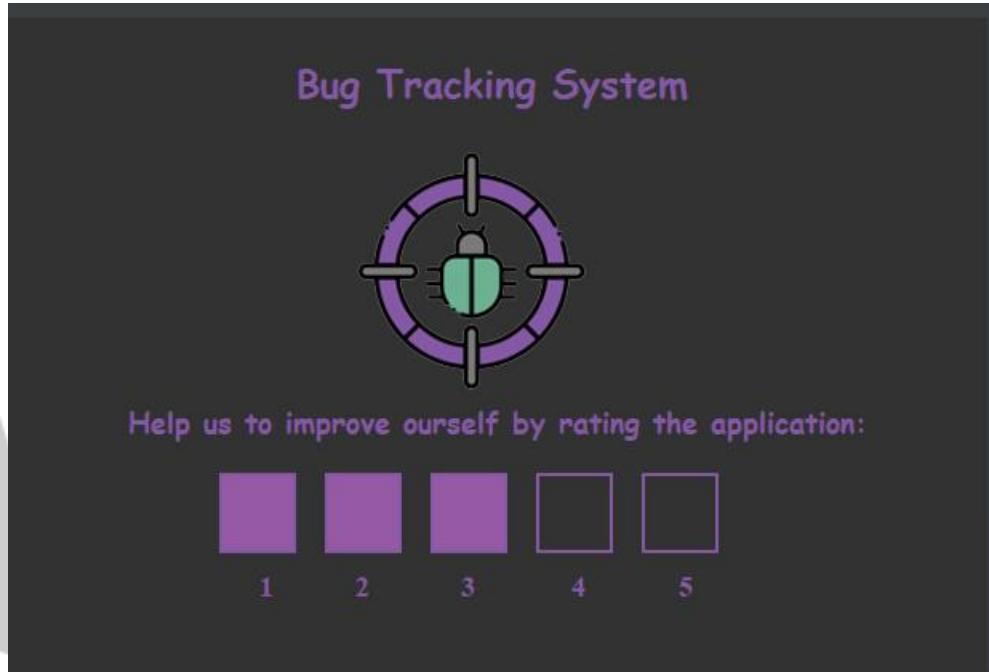


Figure 27: Rating Page

- Database will be created using apache derby and will be maintained and updated using Git servers.

9. Non-functional requirements:

9.1 Availability:

- The system should be available during working hours.

9.2 Security:

- No one can access the system from outside the company.

9.3 Maintainability:

- The system consists of modules every module consists of classes in order, so the system is easy to maintainable.

9.4 Portability:

- The system is a desktop application can run on several operating systems.

9.5 Usability:

- The system is usable for all users (developers & testers).

9.6 Efficiency

- The system is efficient in a lot of software companies because it solves the bugs of the software.

10. System Models and Diagrams:

- Context diagram:

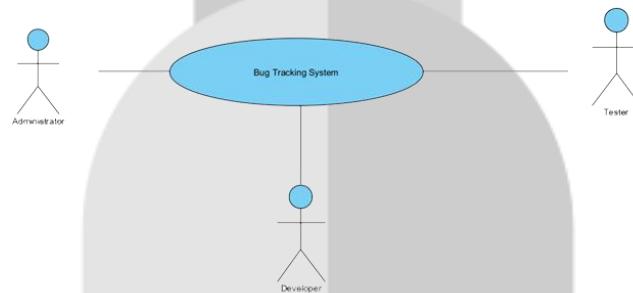


Figure 28:context diagram

- Class diagram:

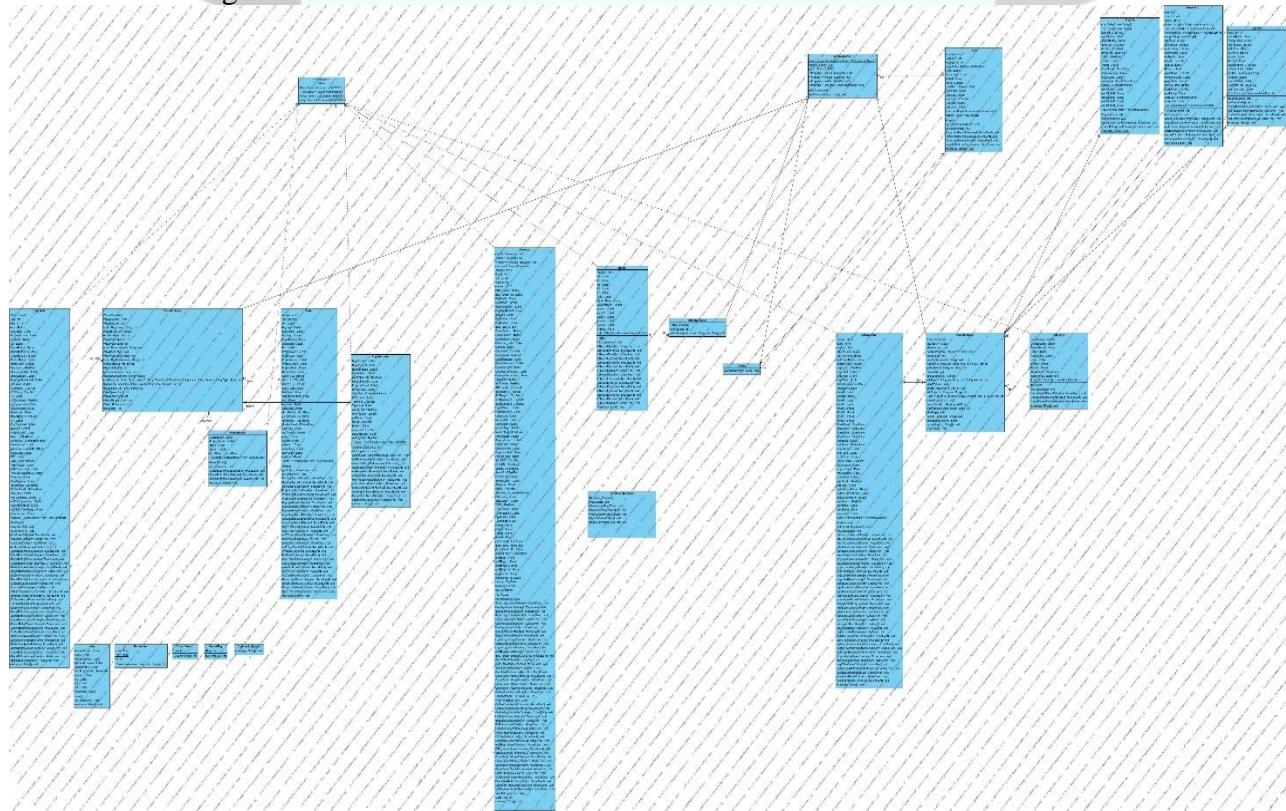


Figure 29 : Class diagram

- Use case diagram:

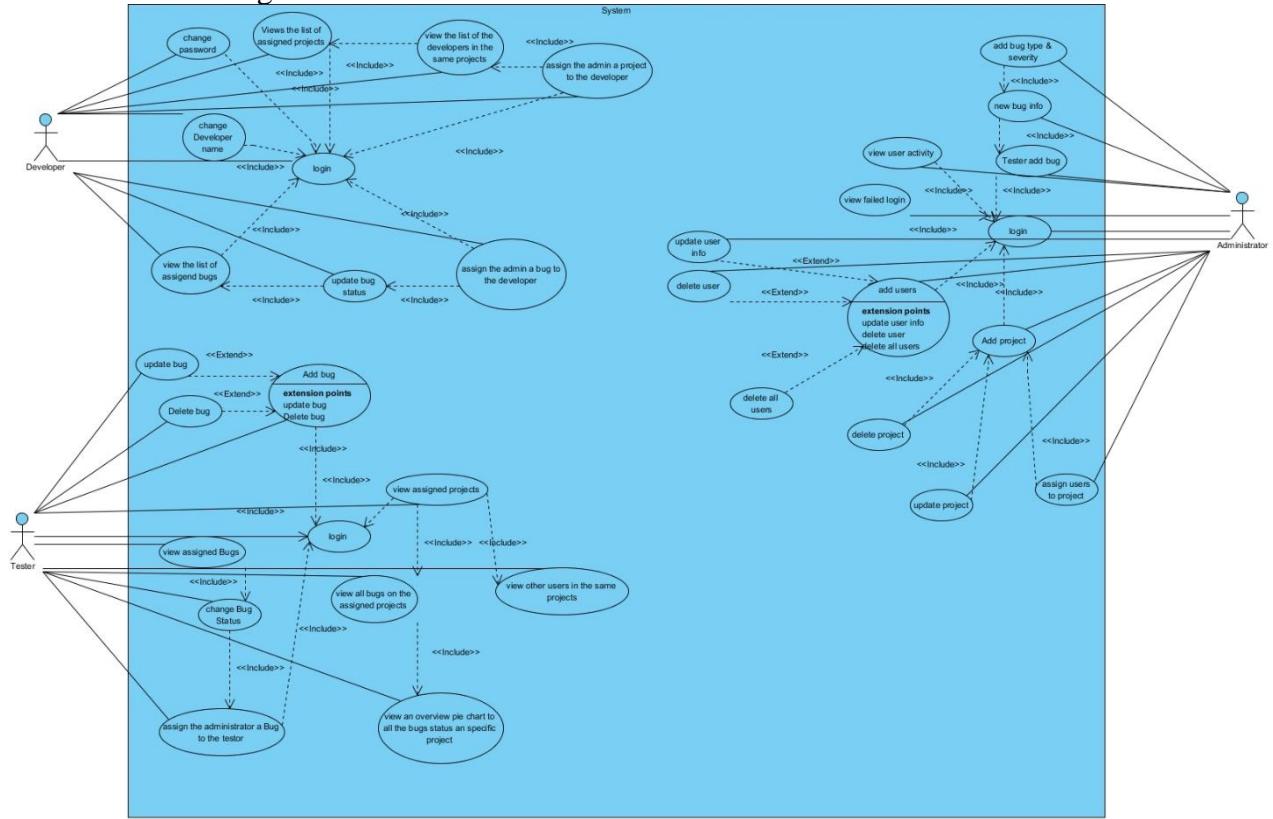
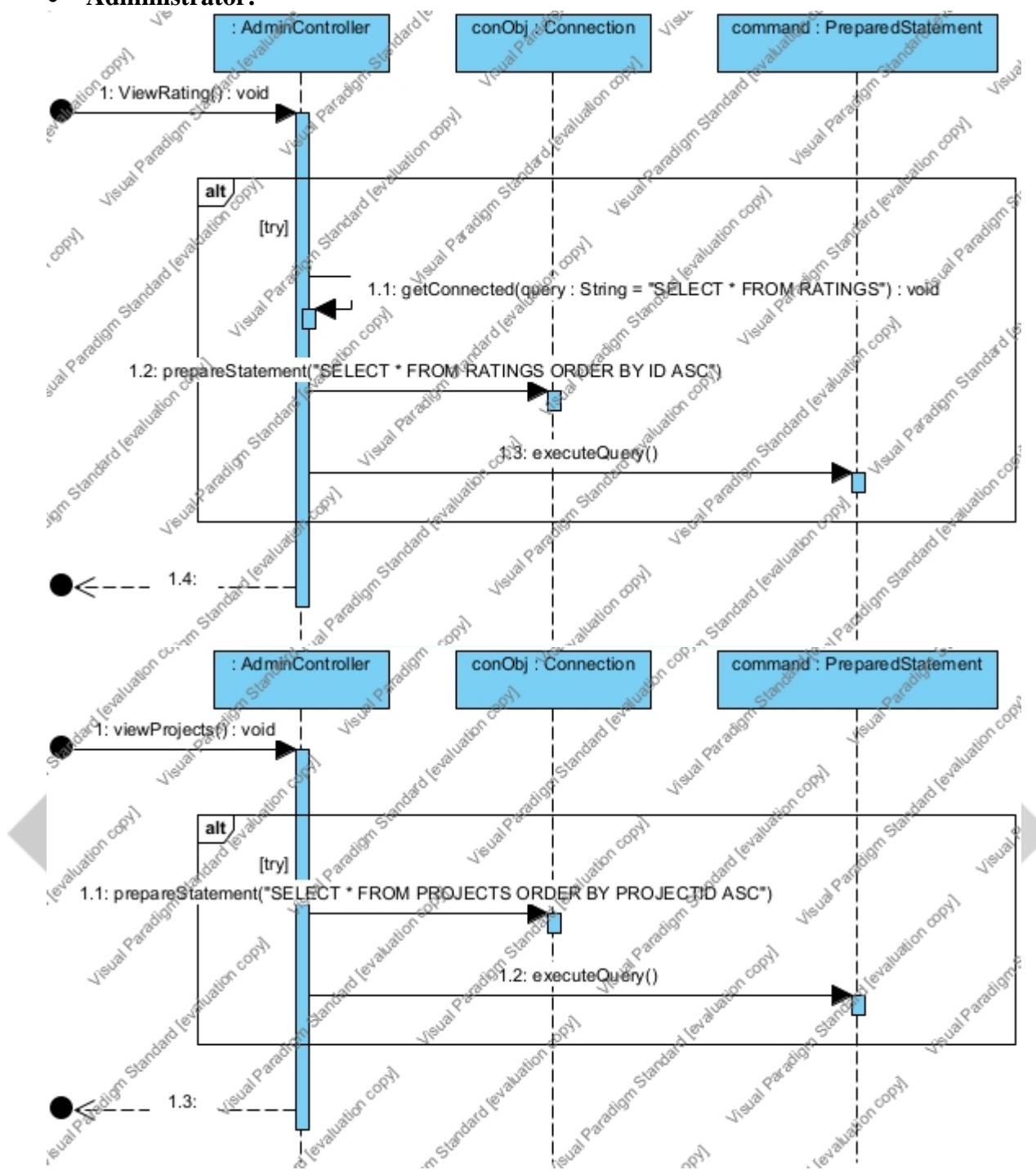


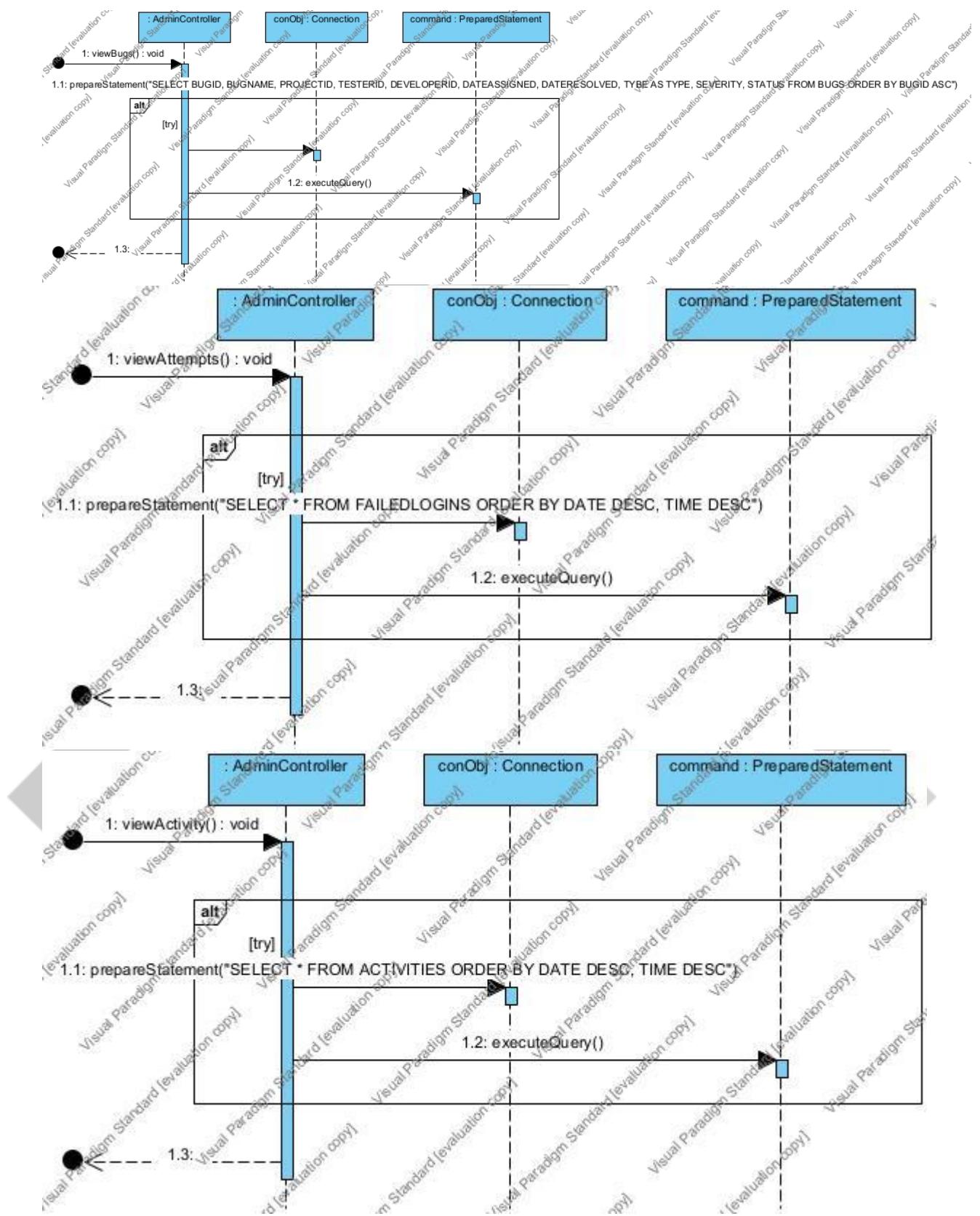
Figure 30 : Use case diagram

- Sequence diagrams:

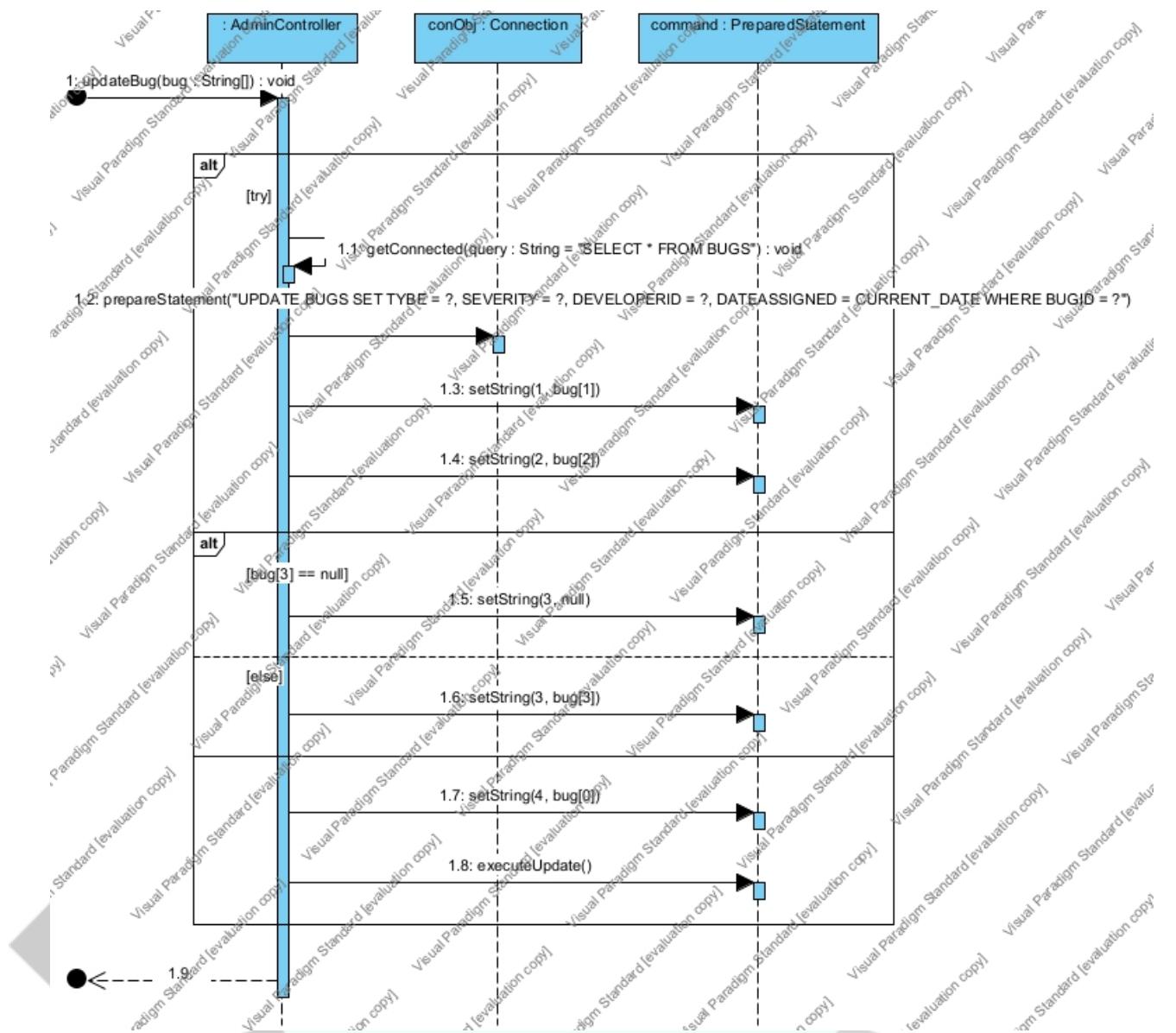
- **Administrator:**



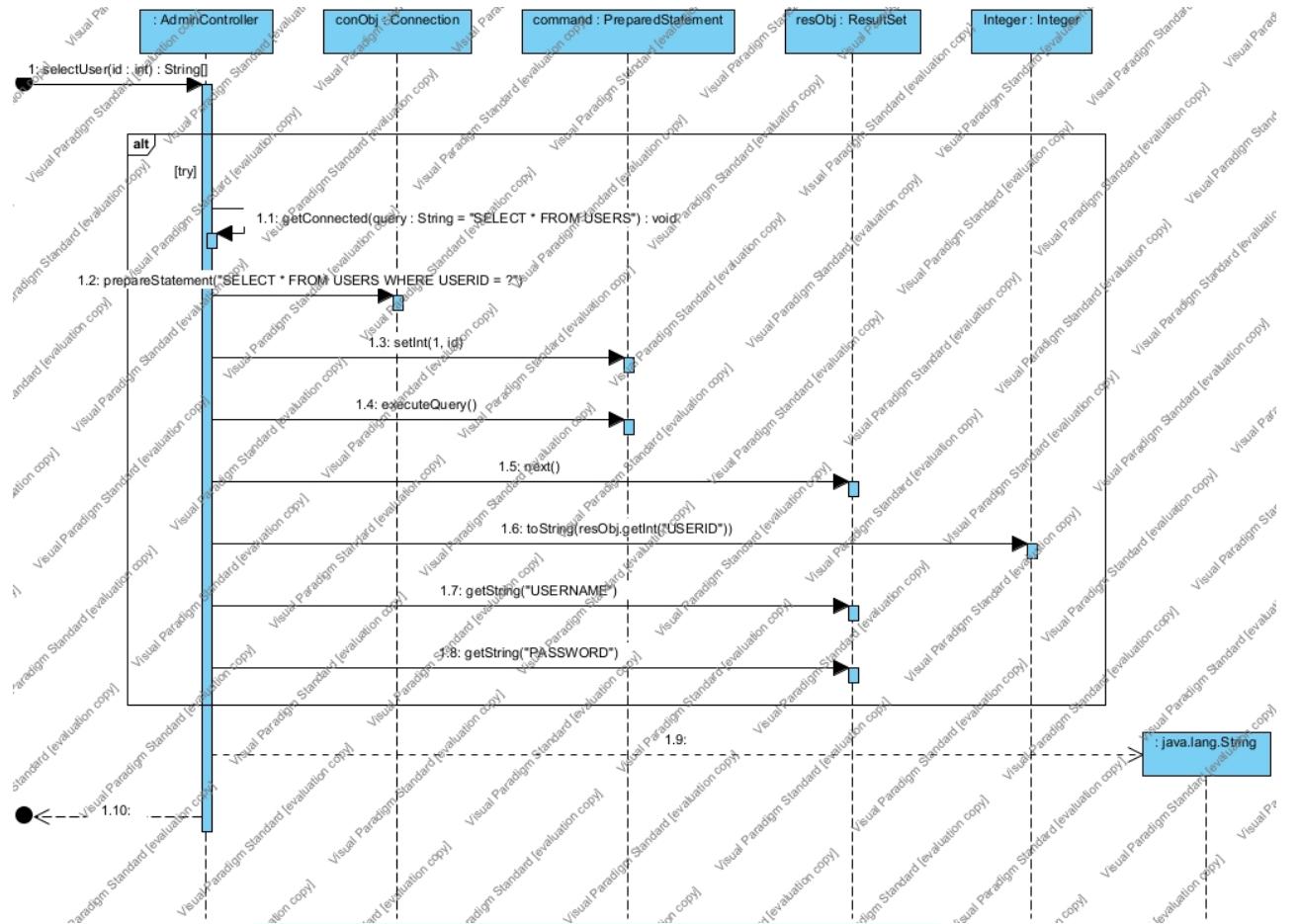
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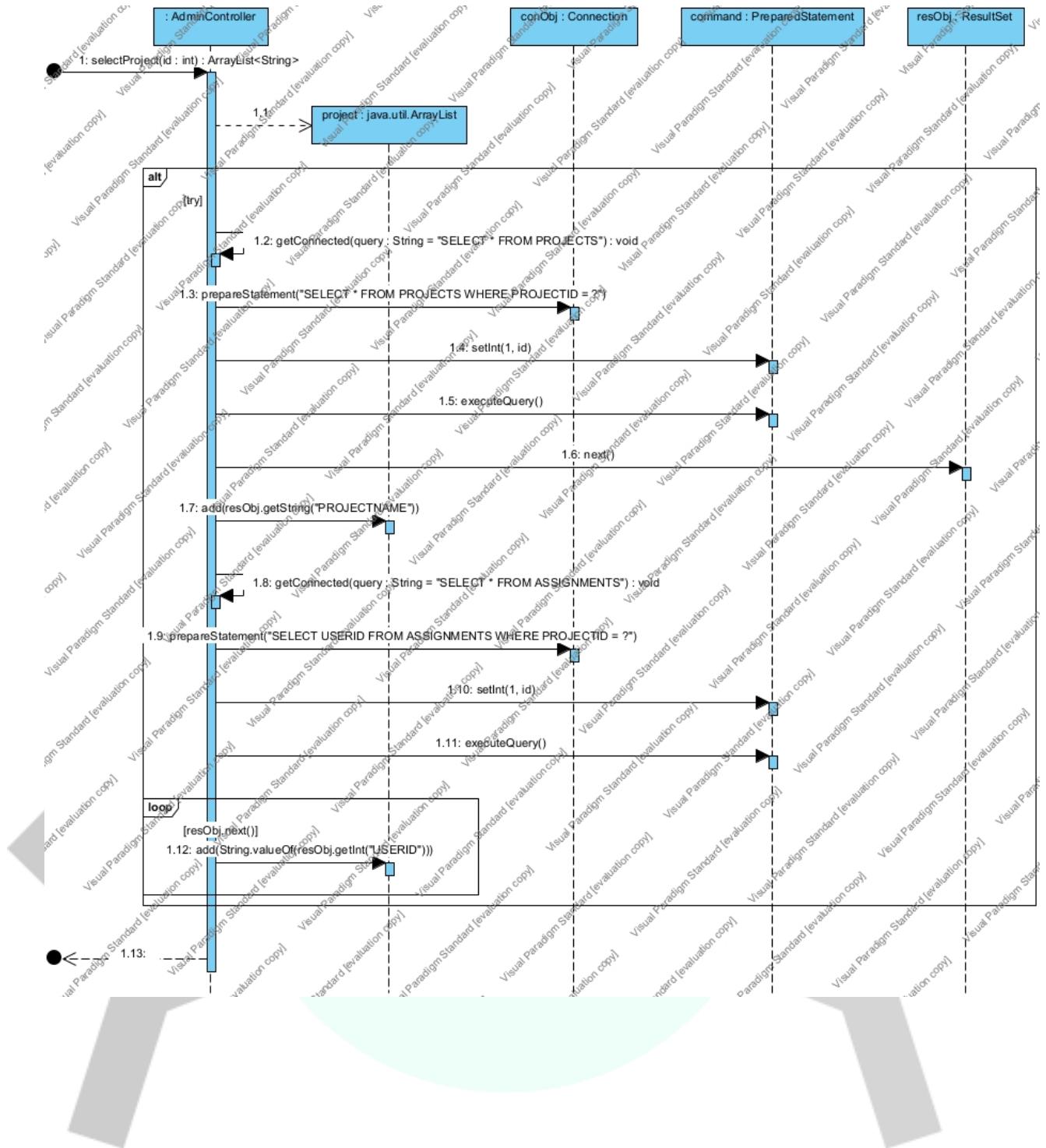
Software Requirements and Specifications for BTS



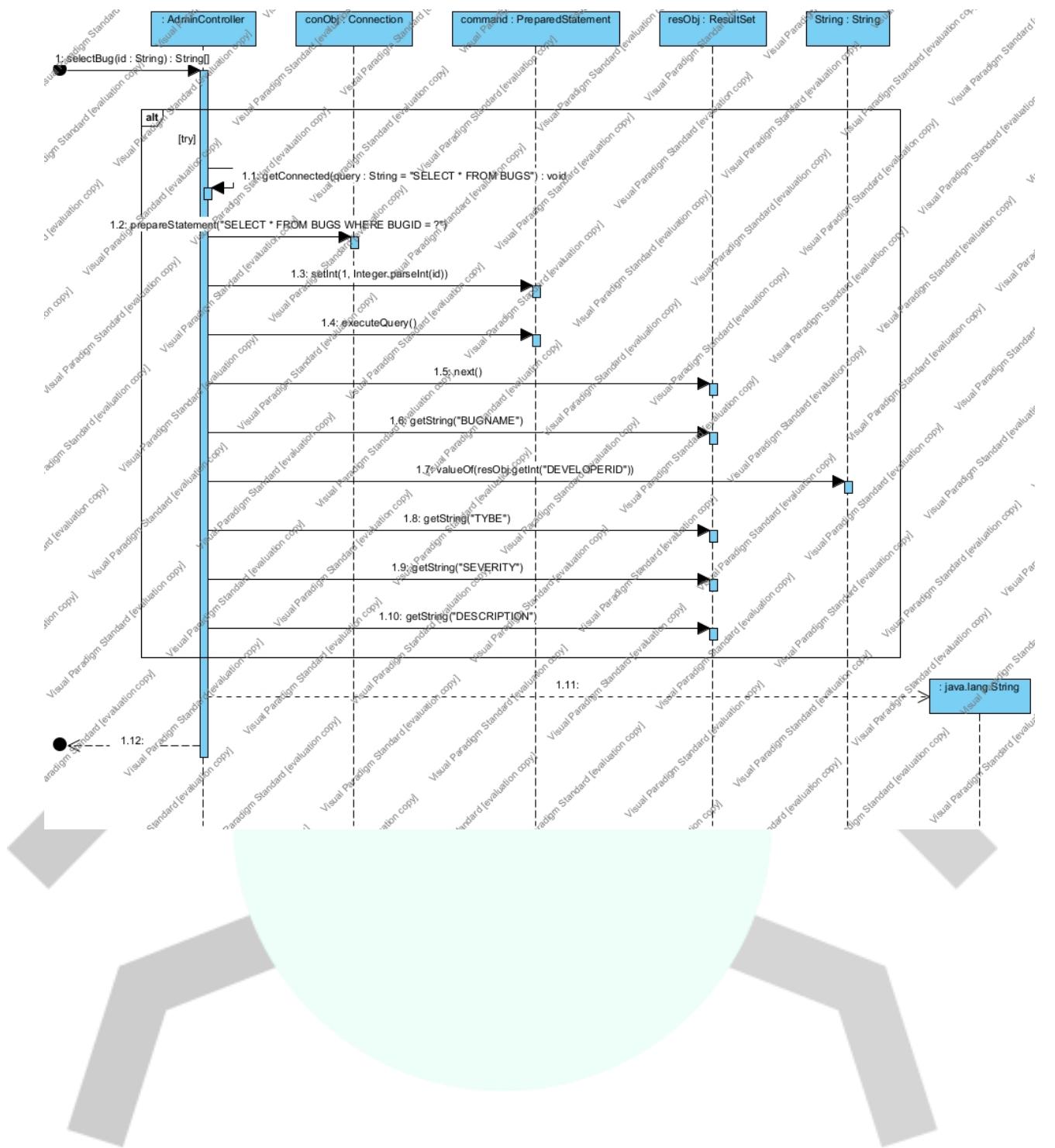
Software Requirements and Specifications for BTS



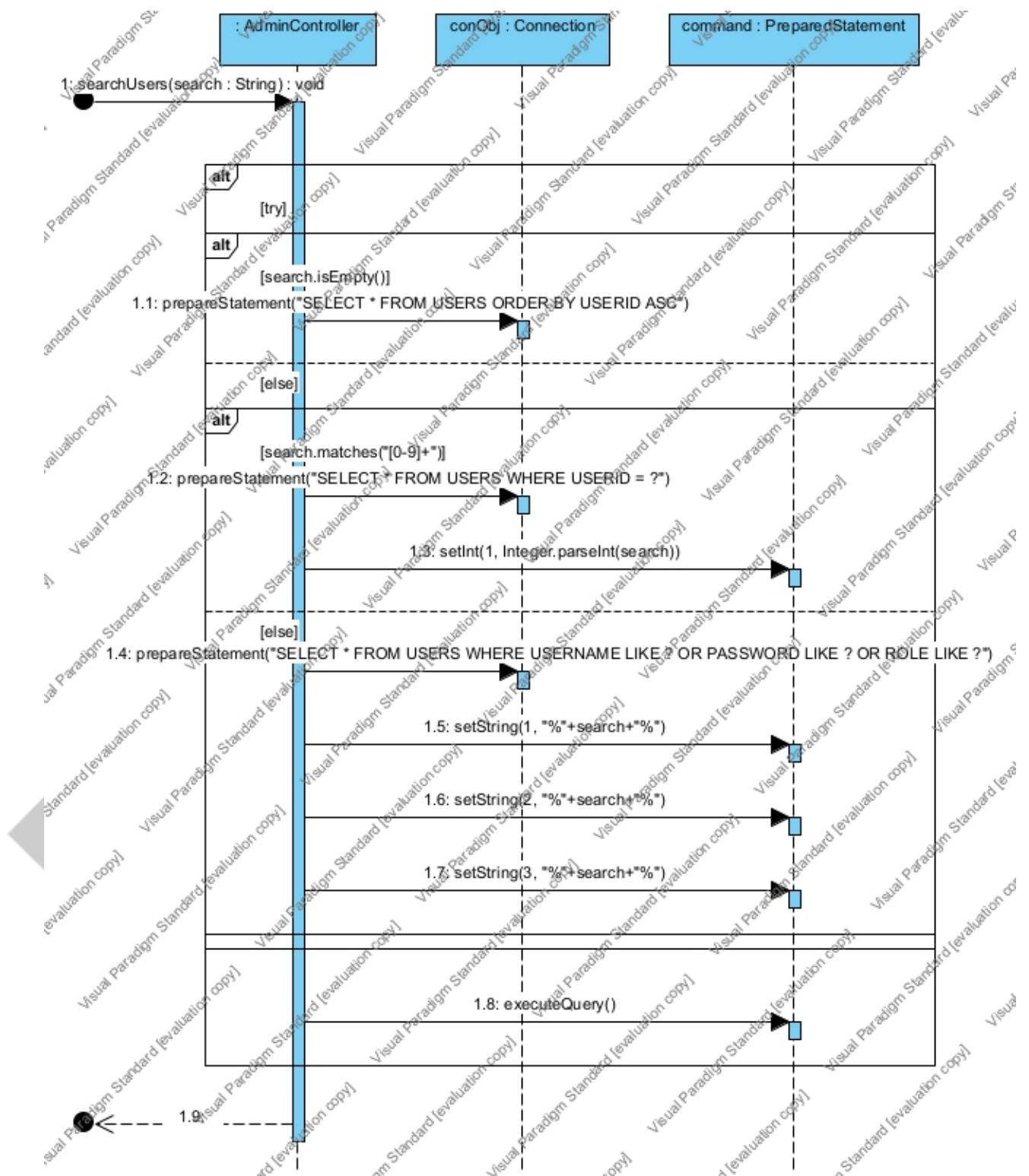
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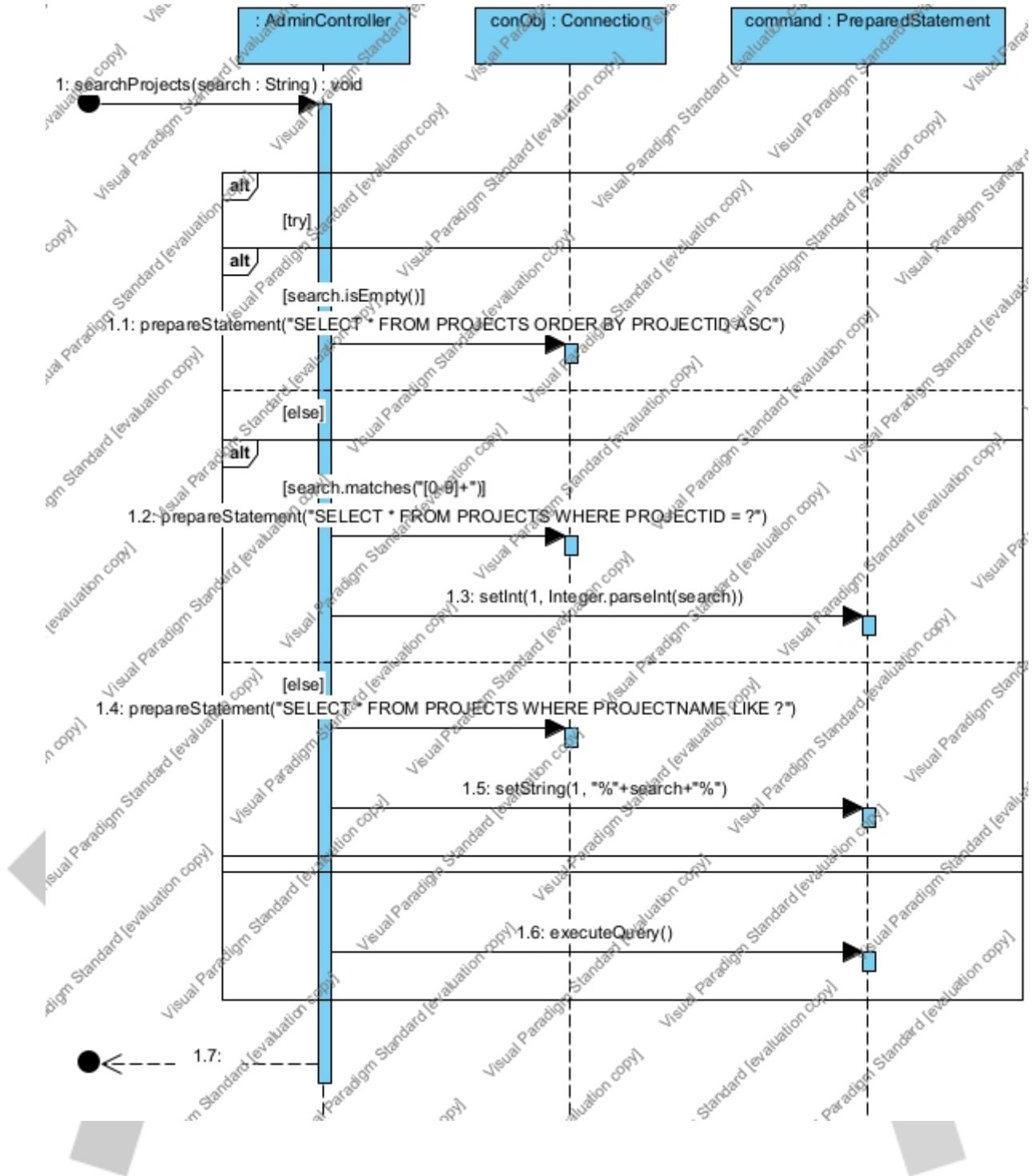
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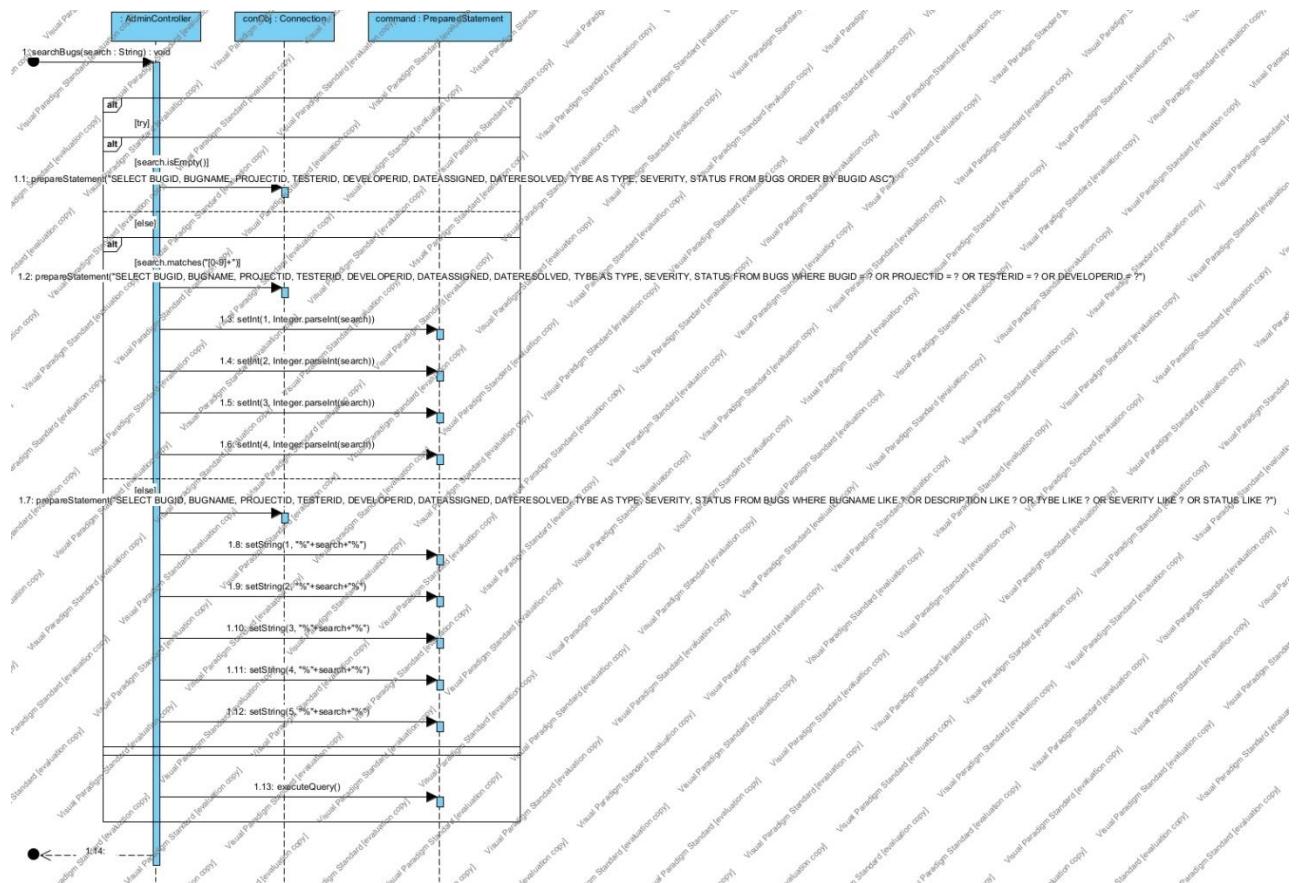
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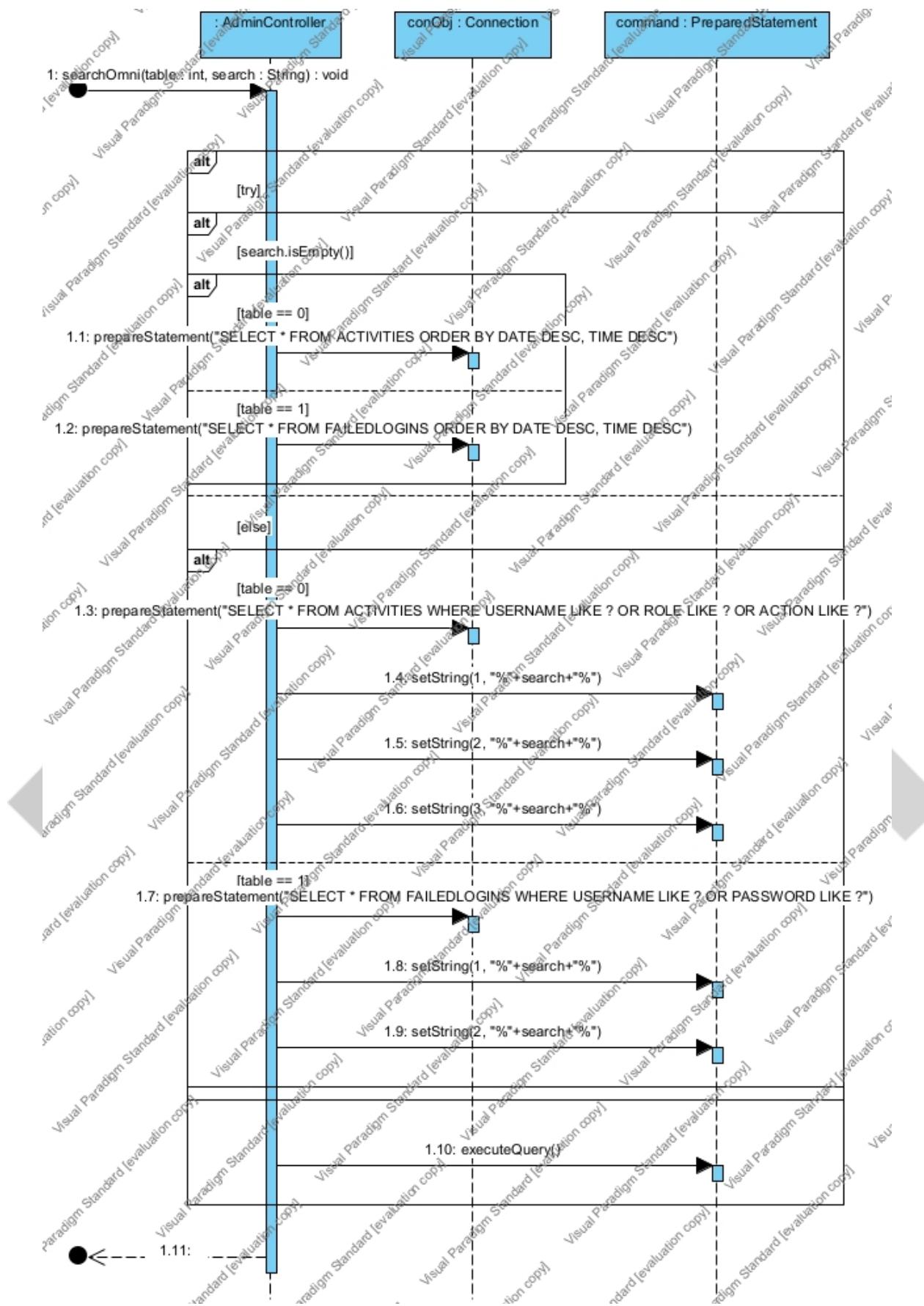
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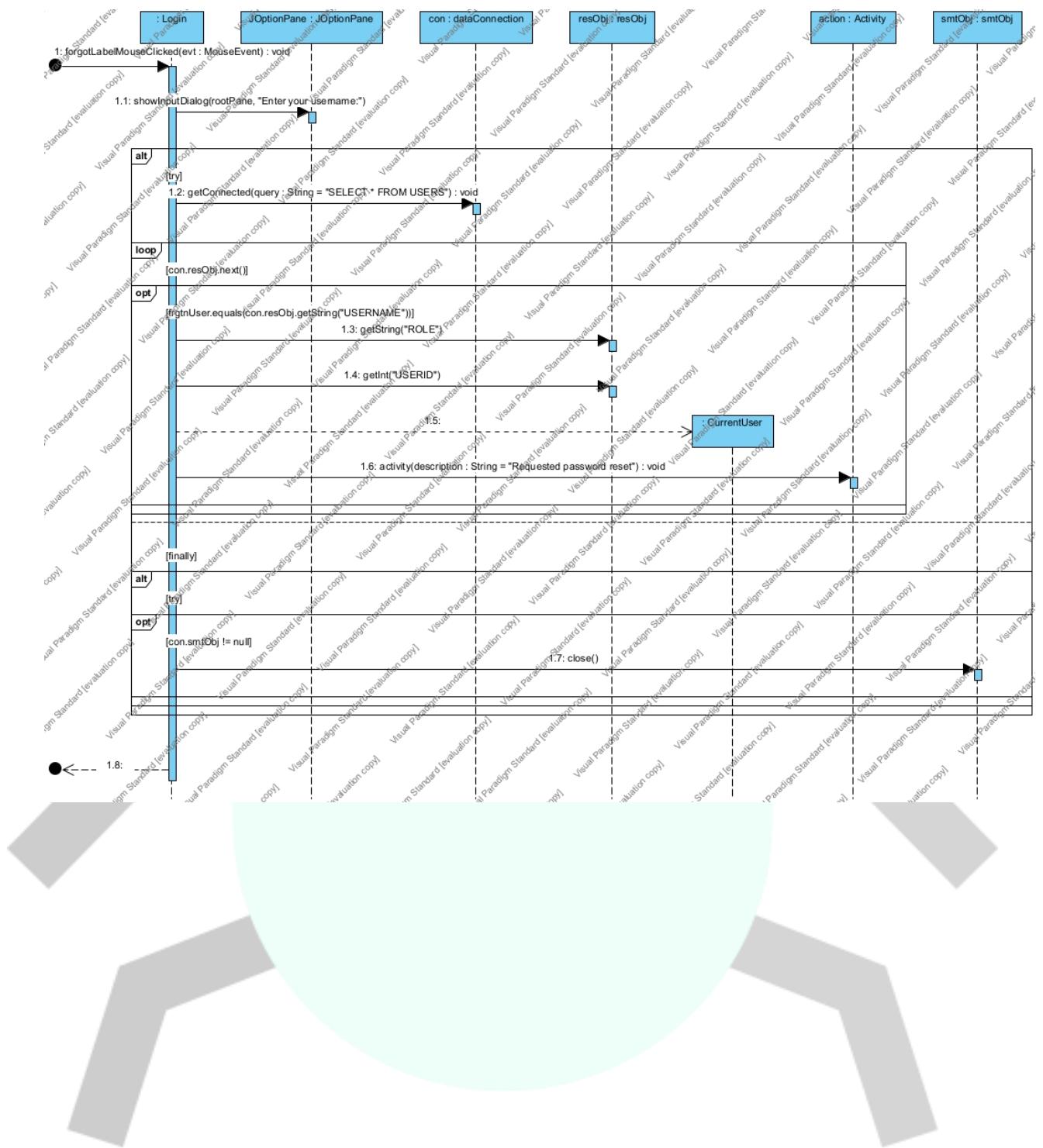
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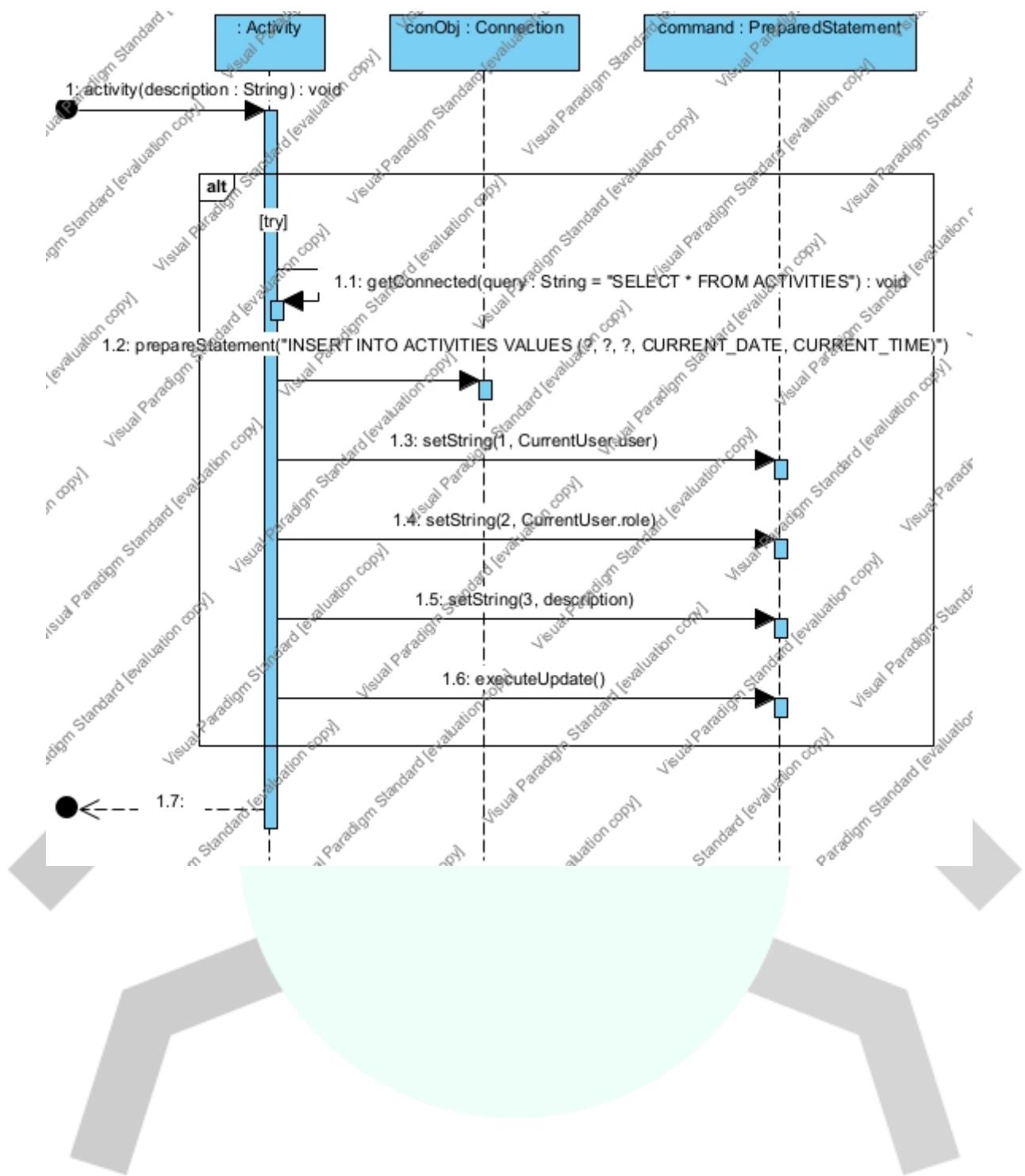
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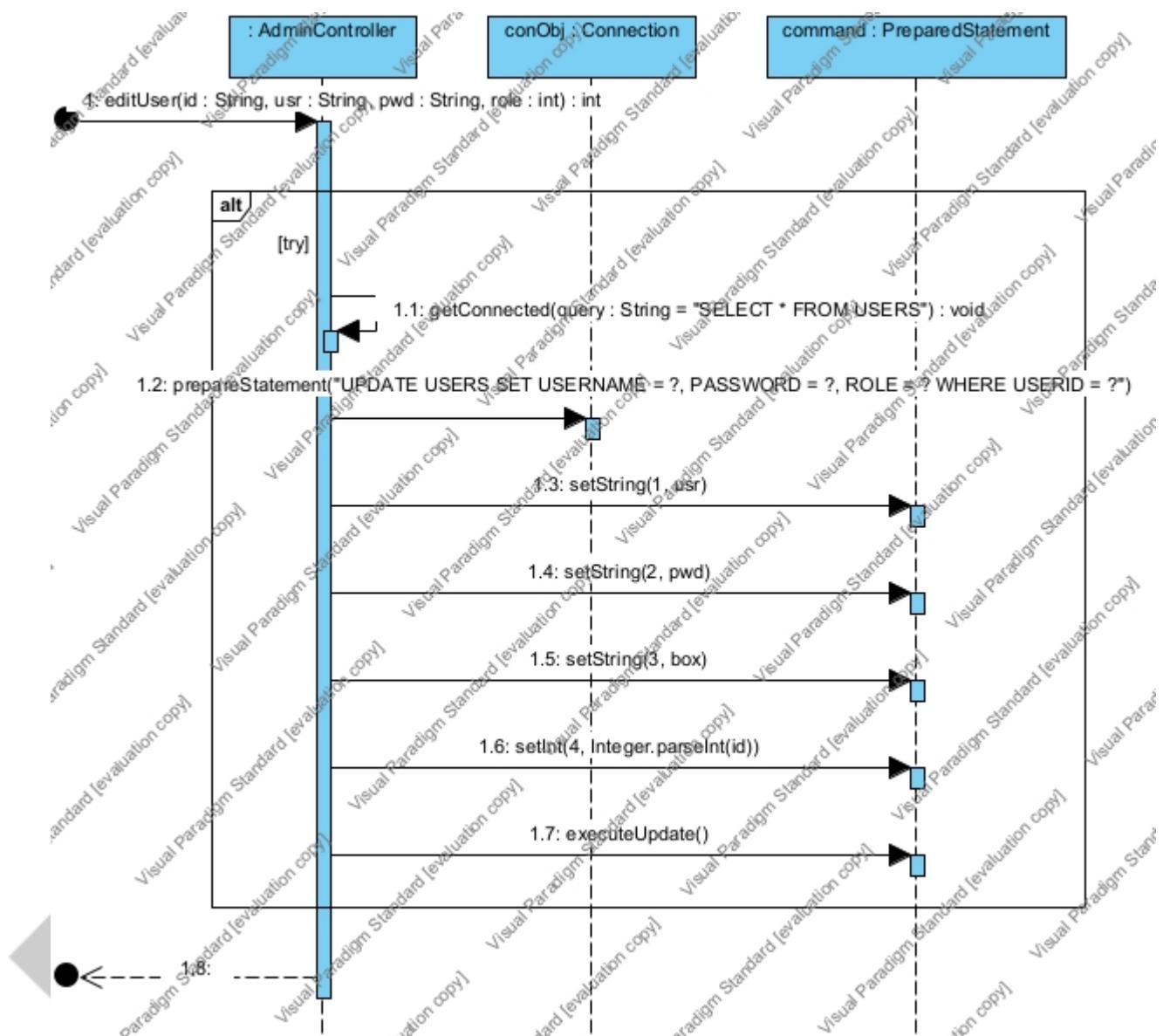
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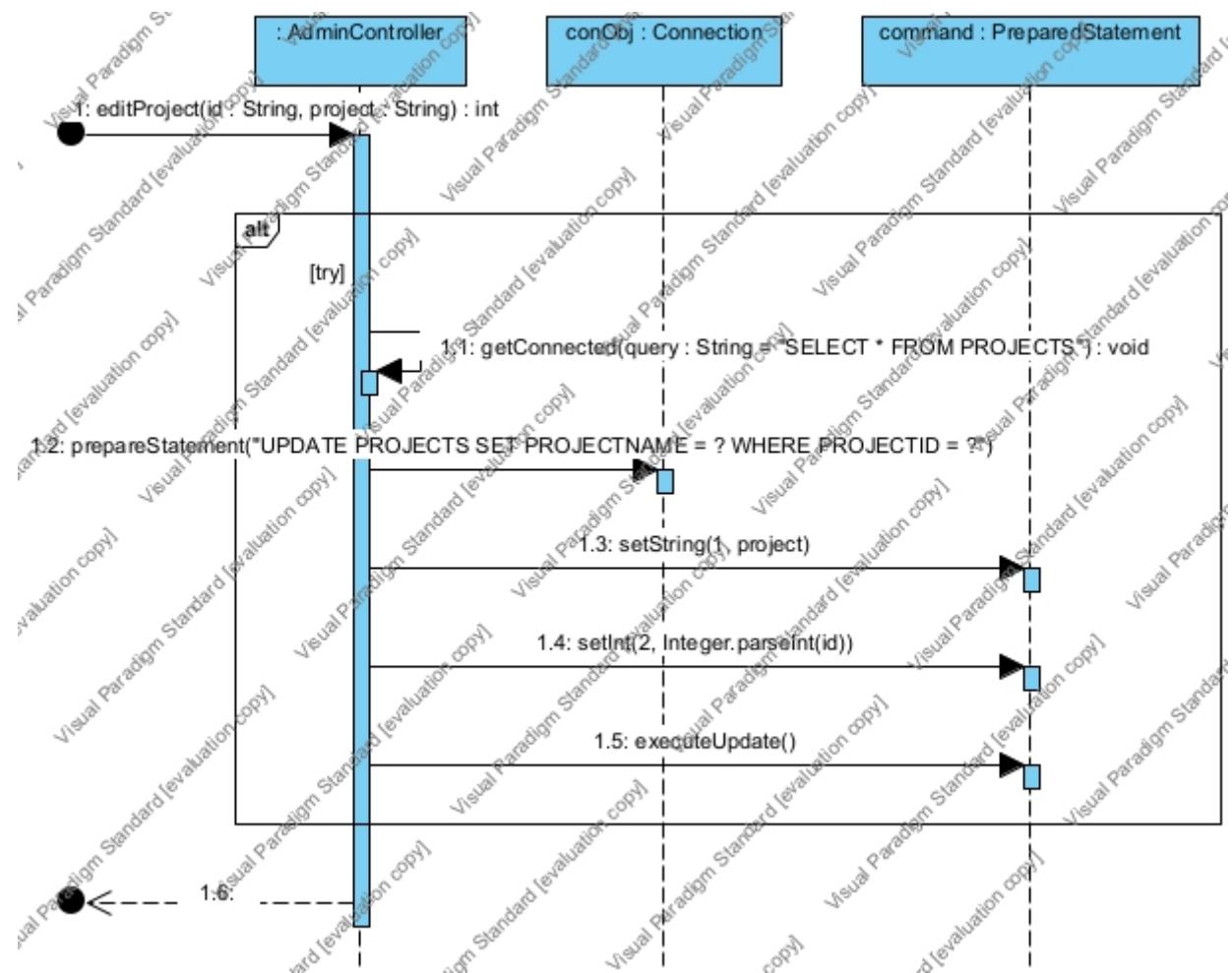
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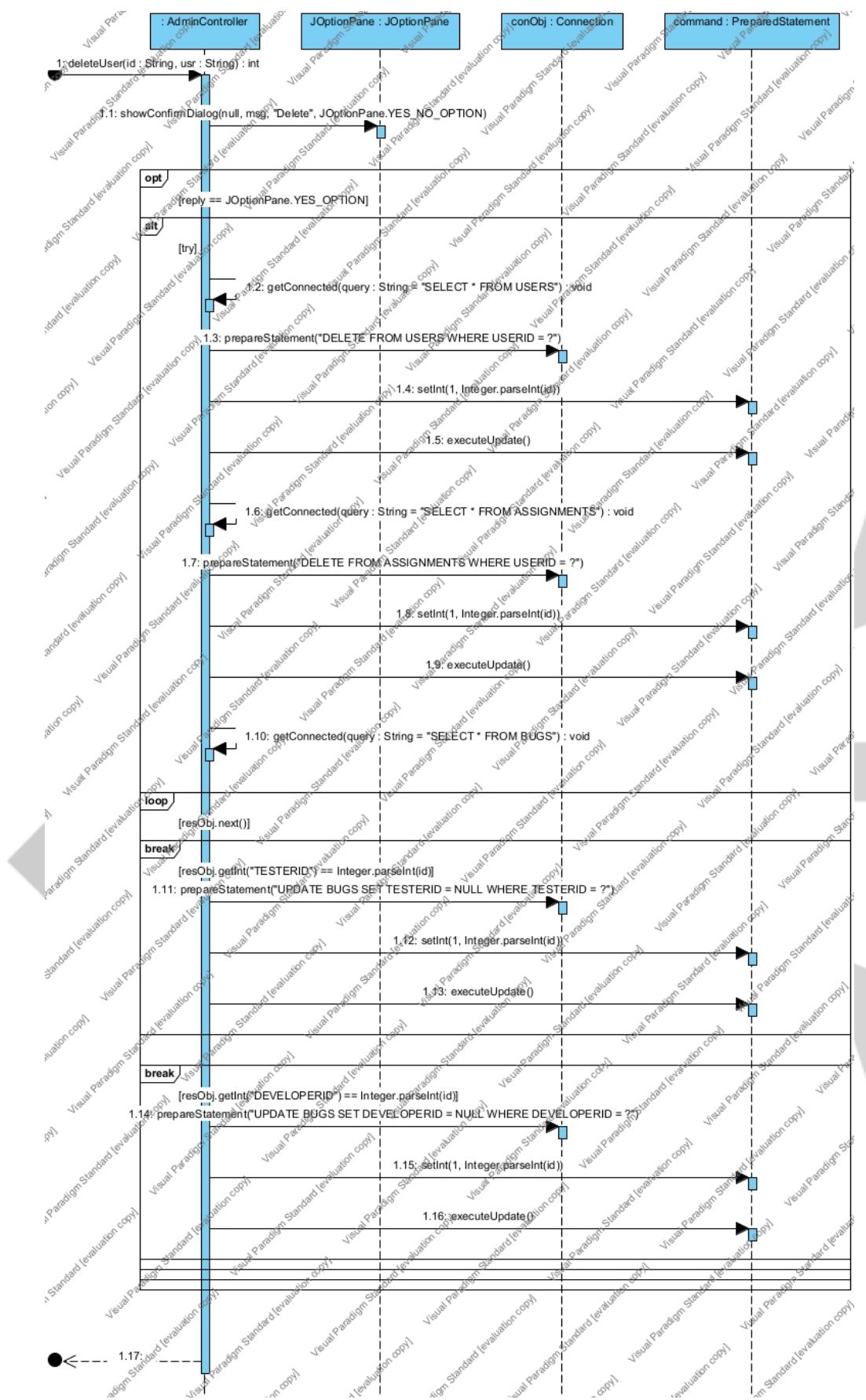
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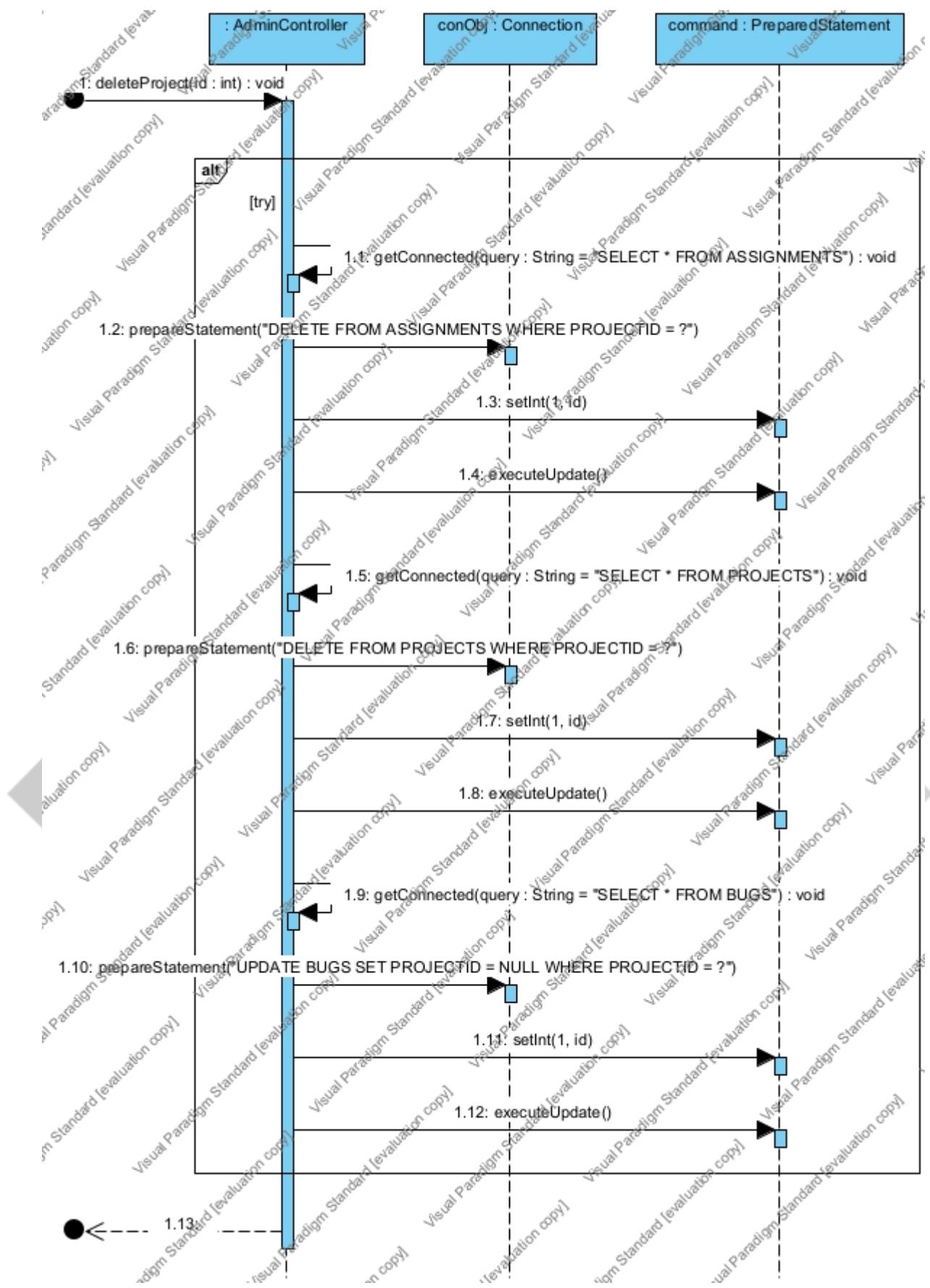
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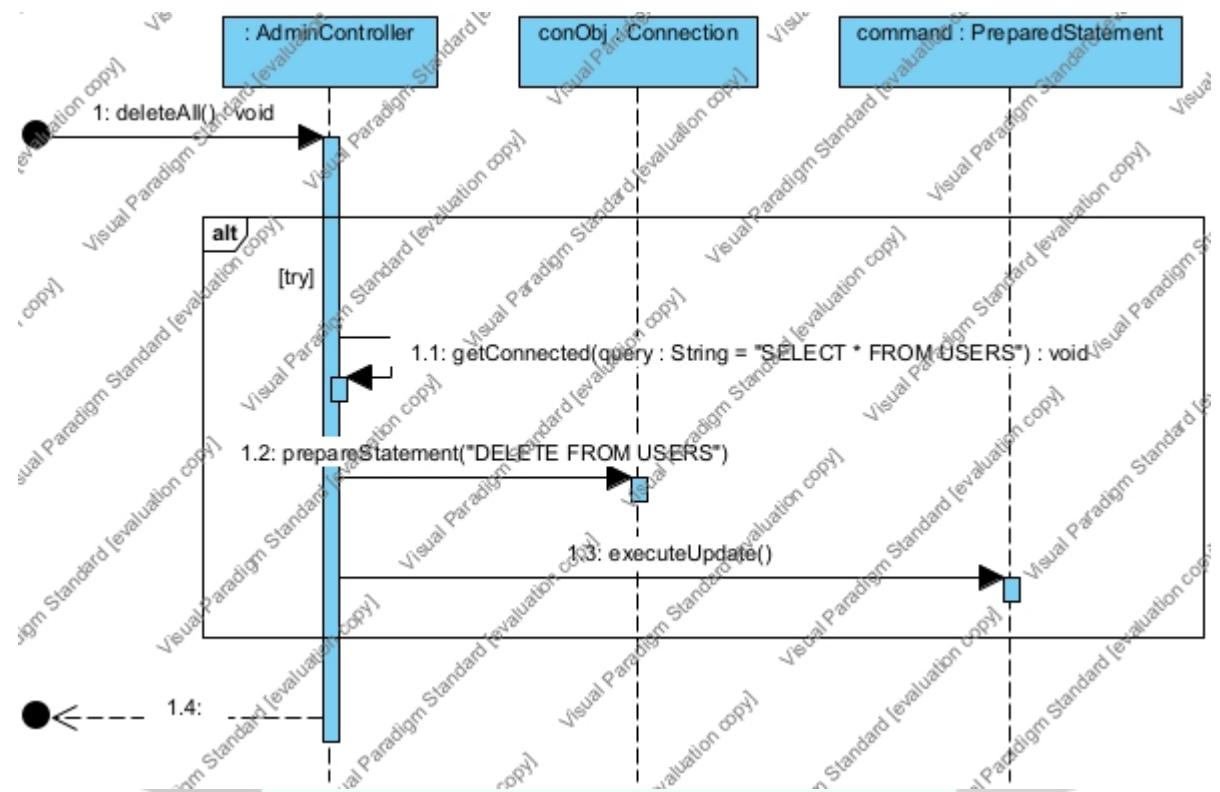
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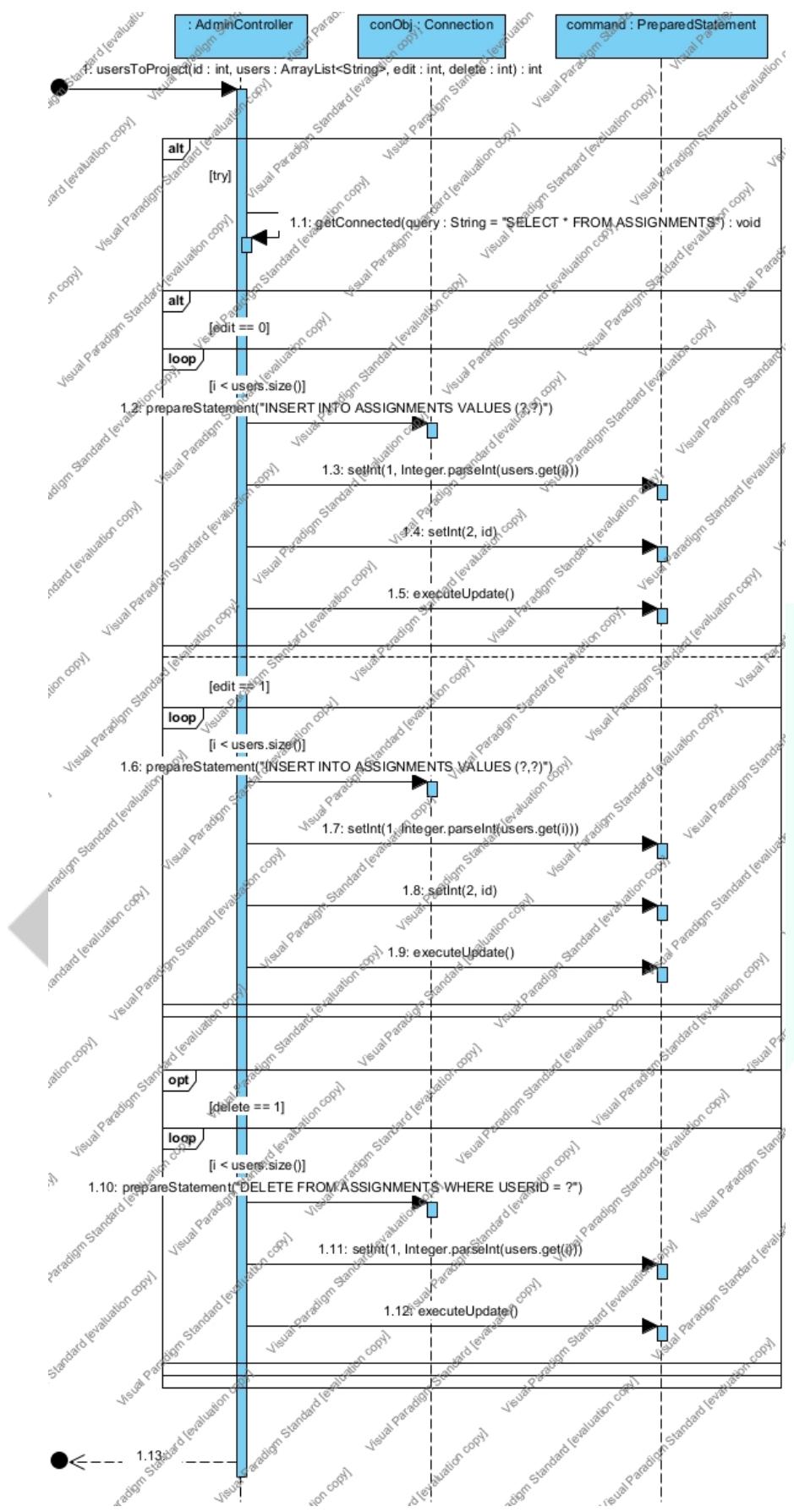
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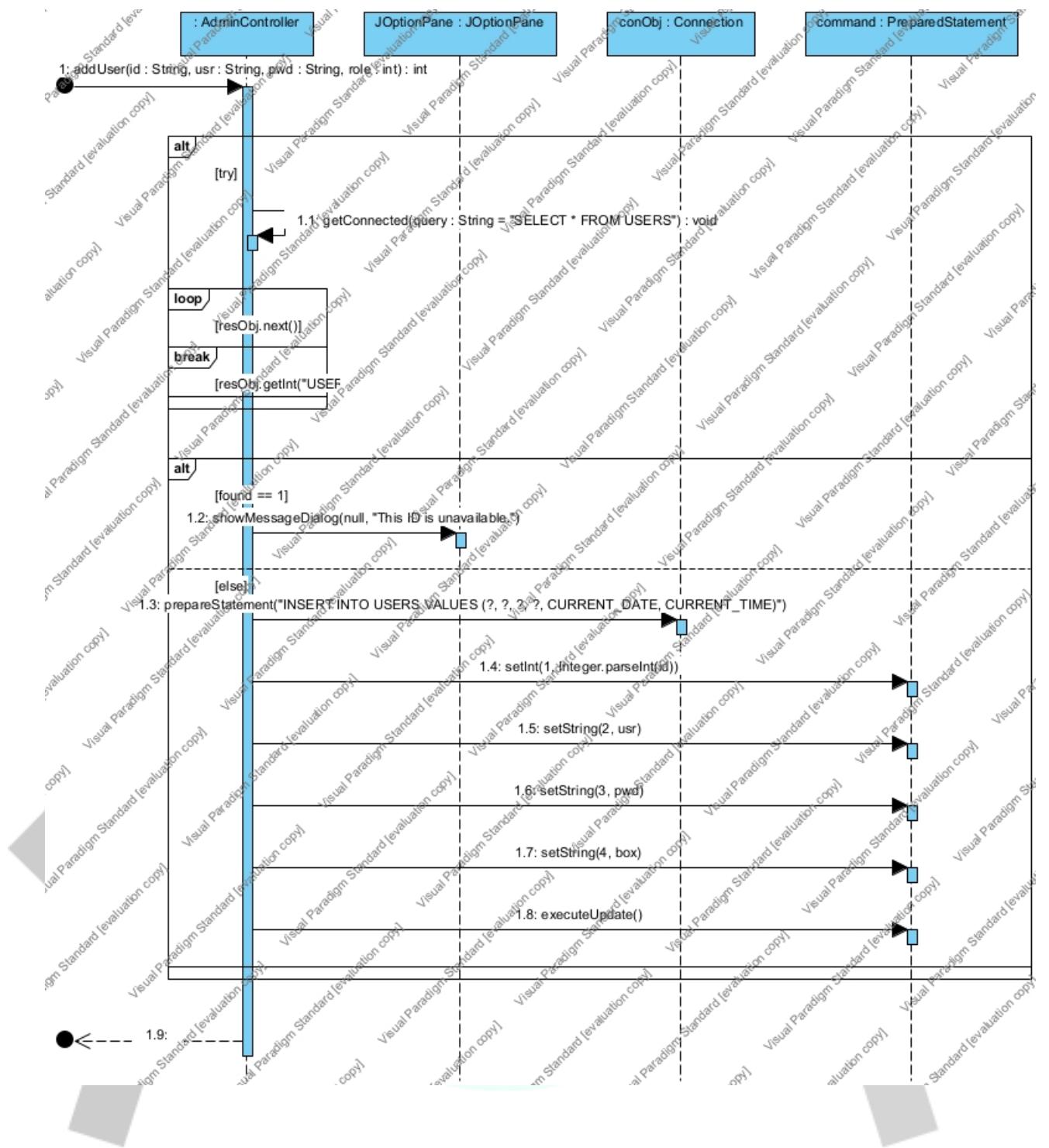
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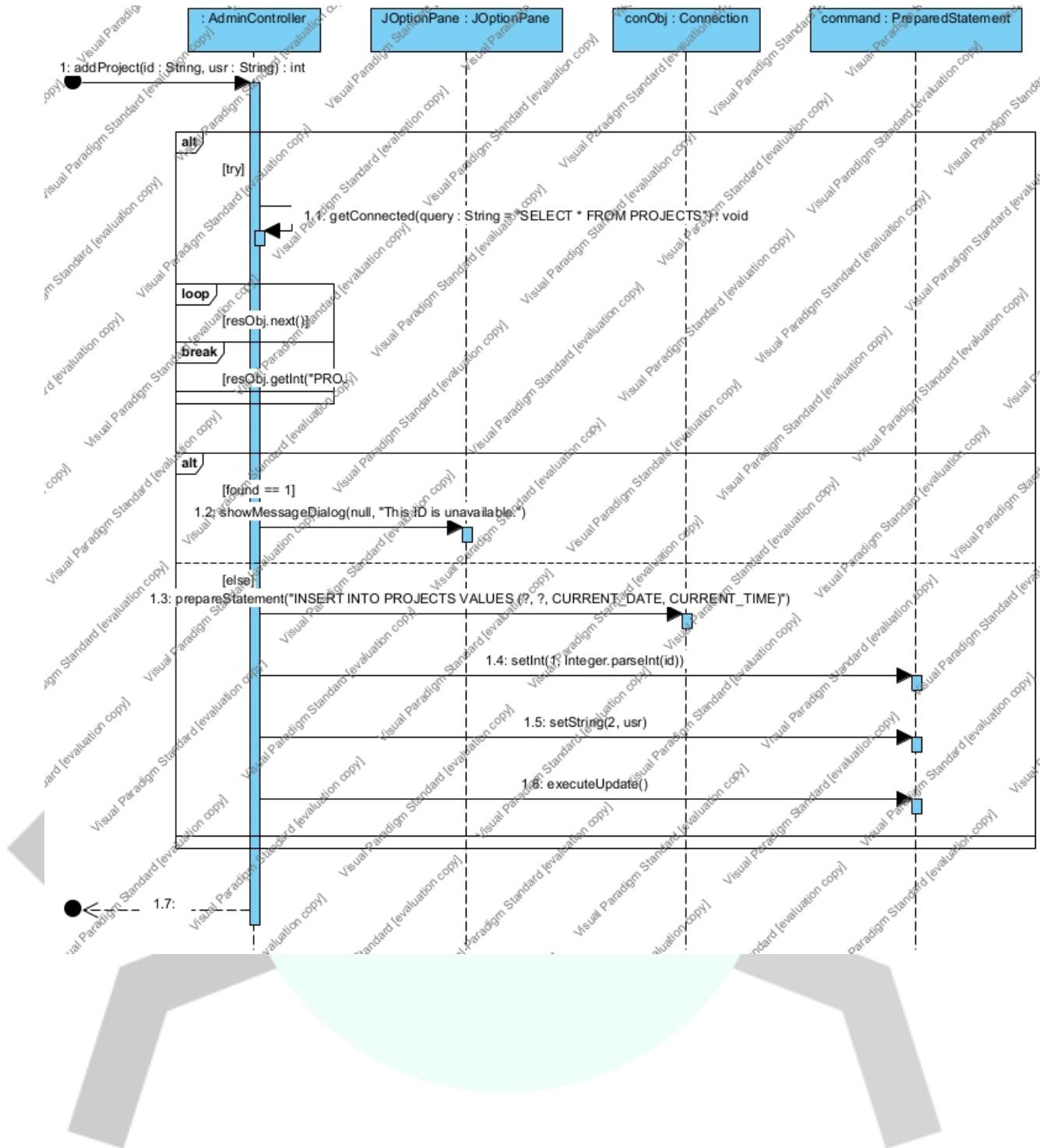
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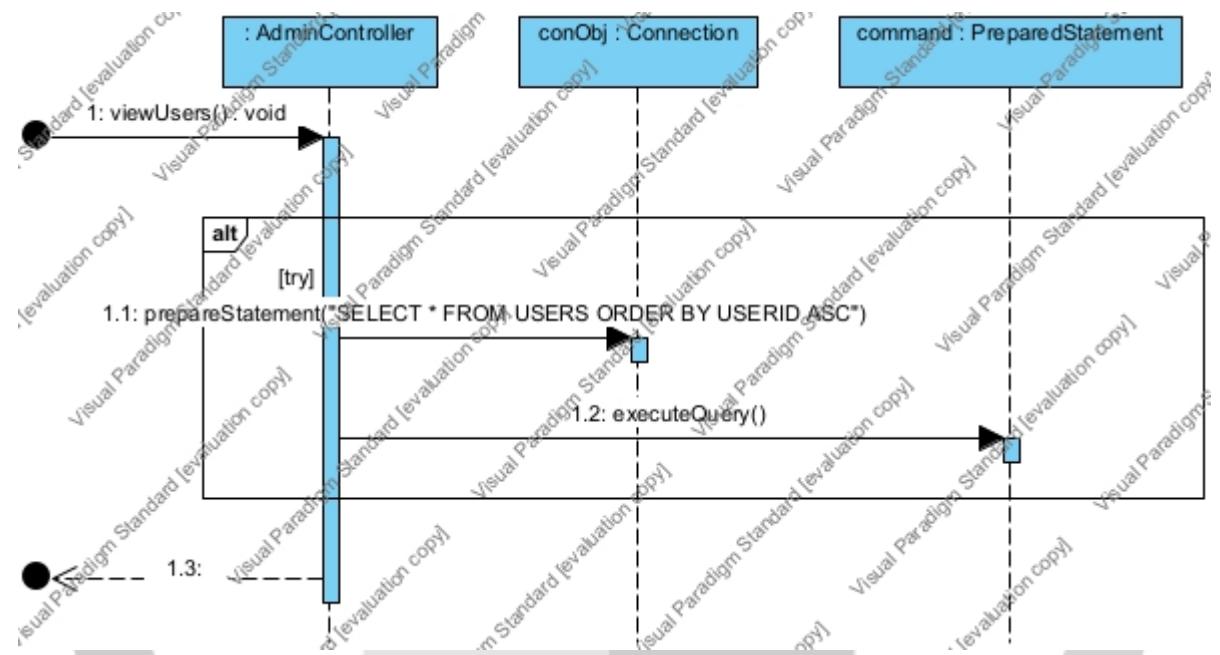


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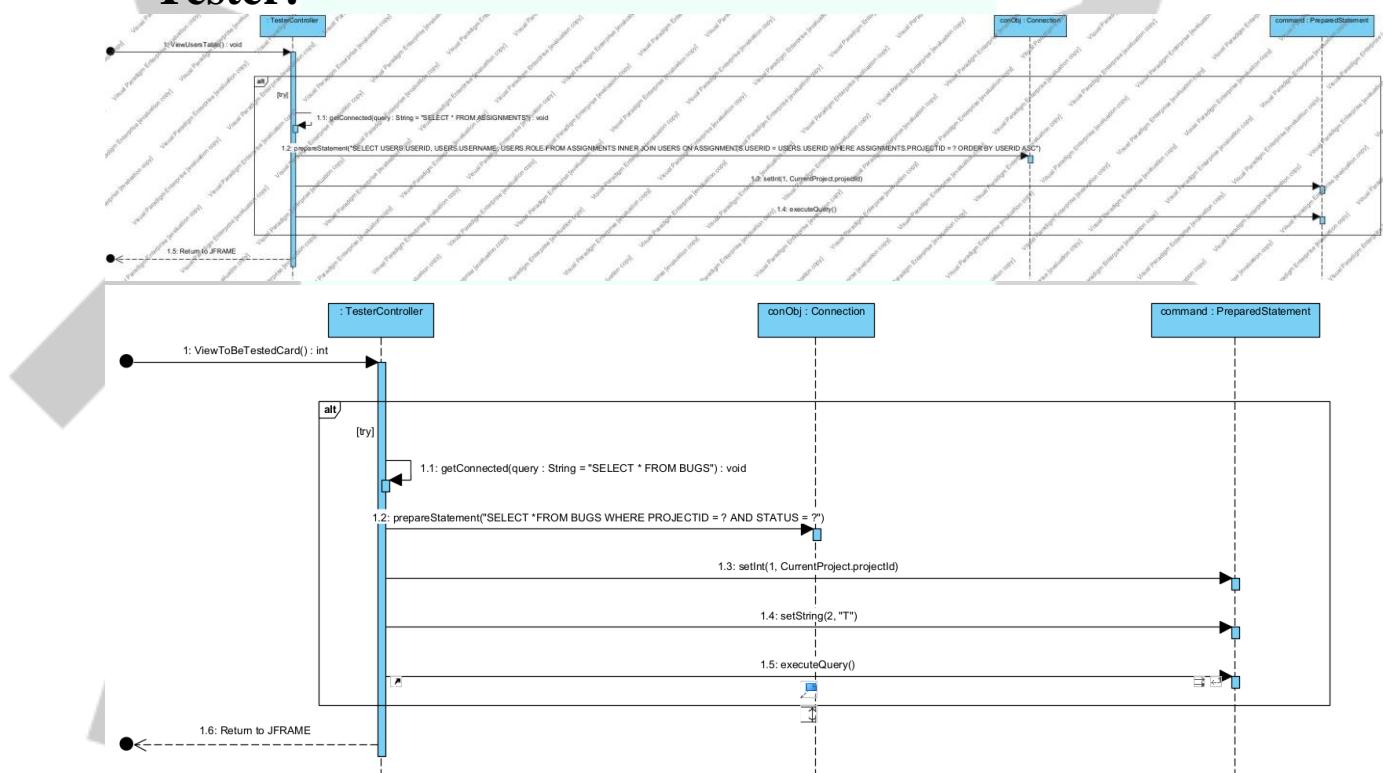


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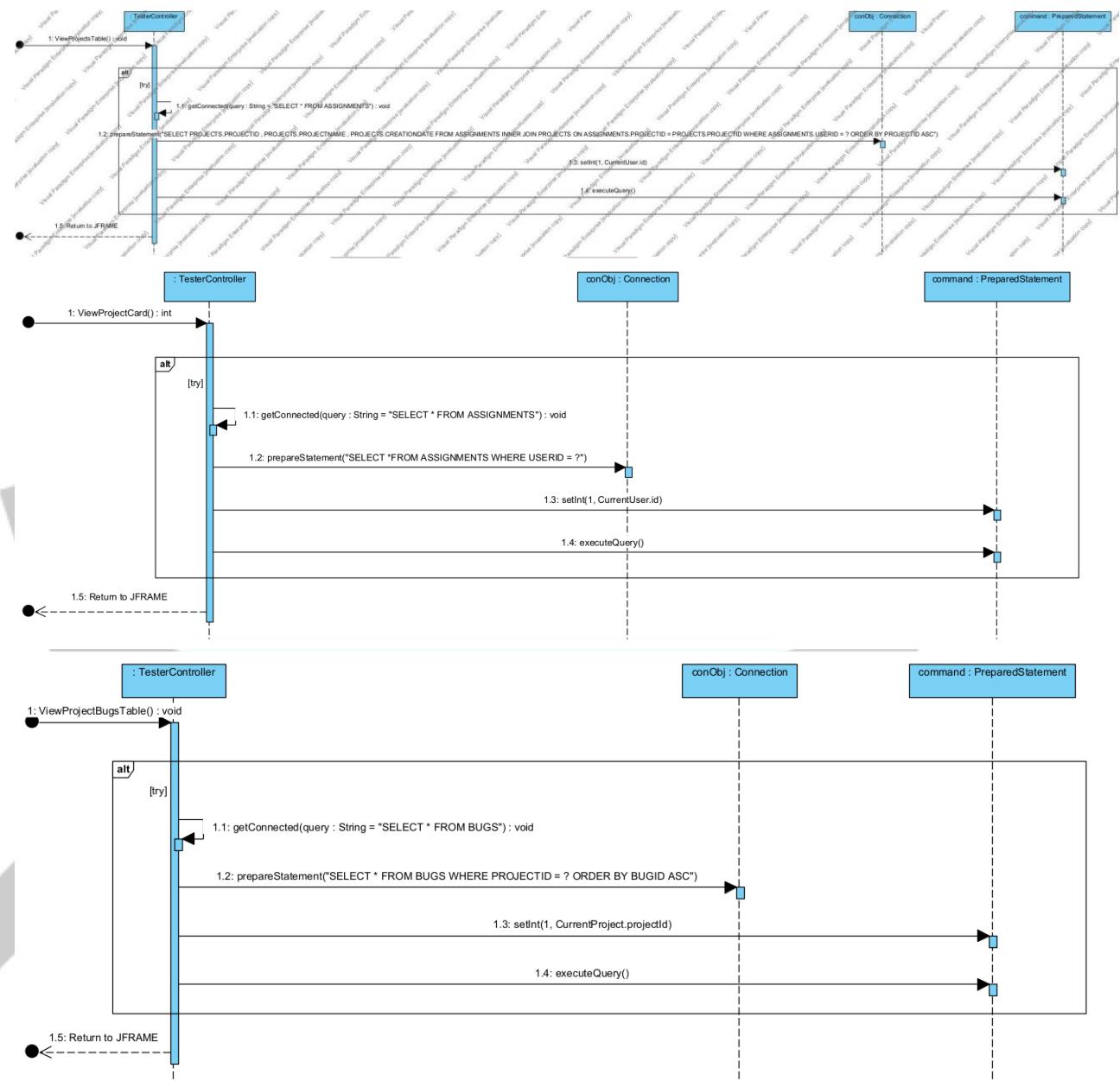




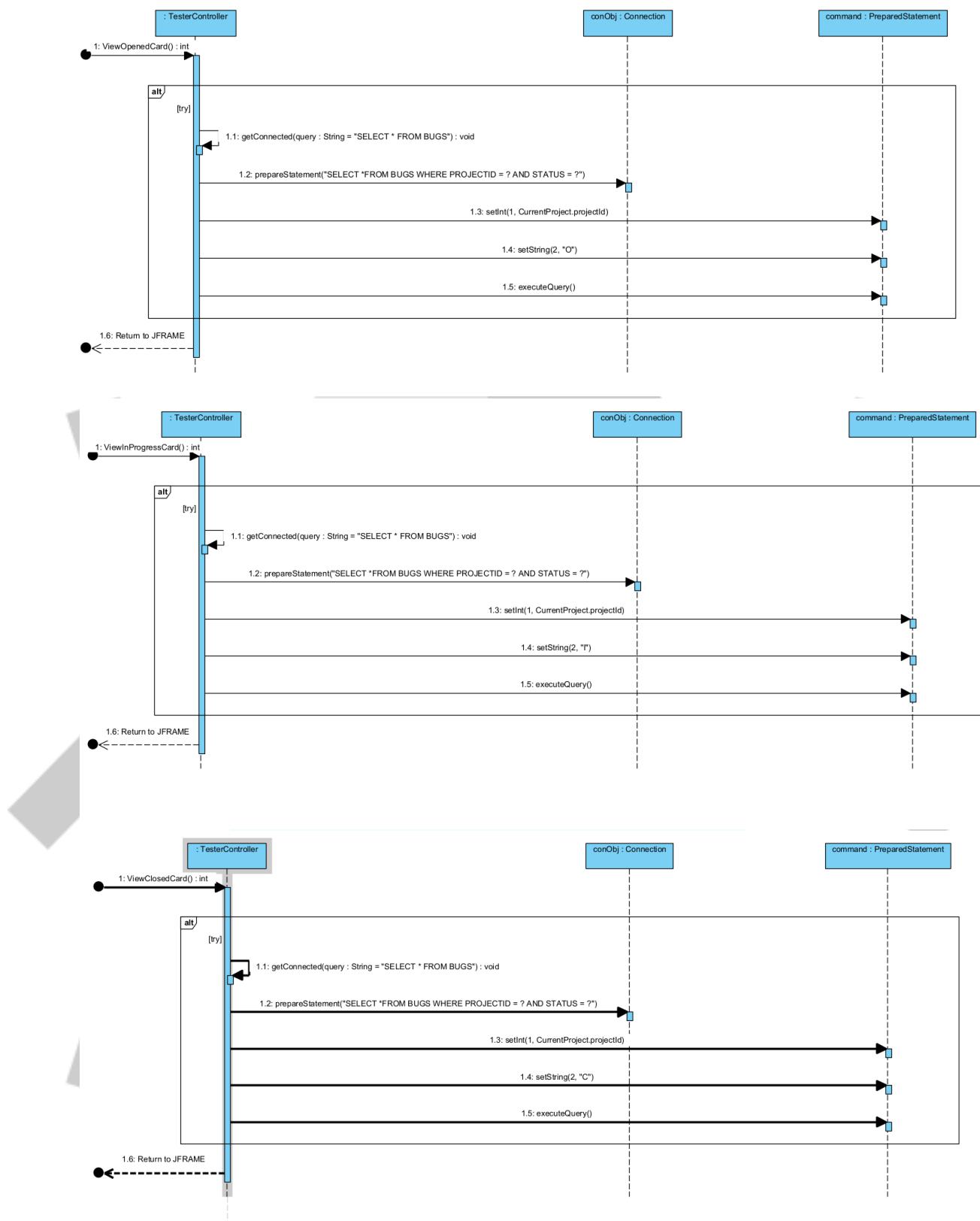
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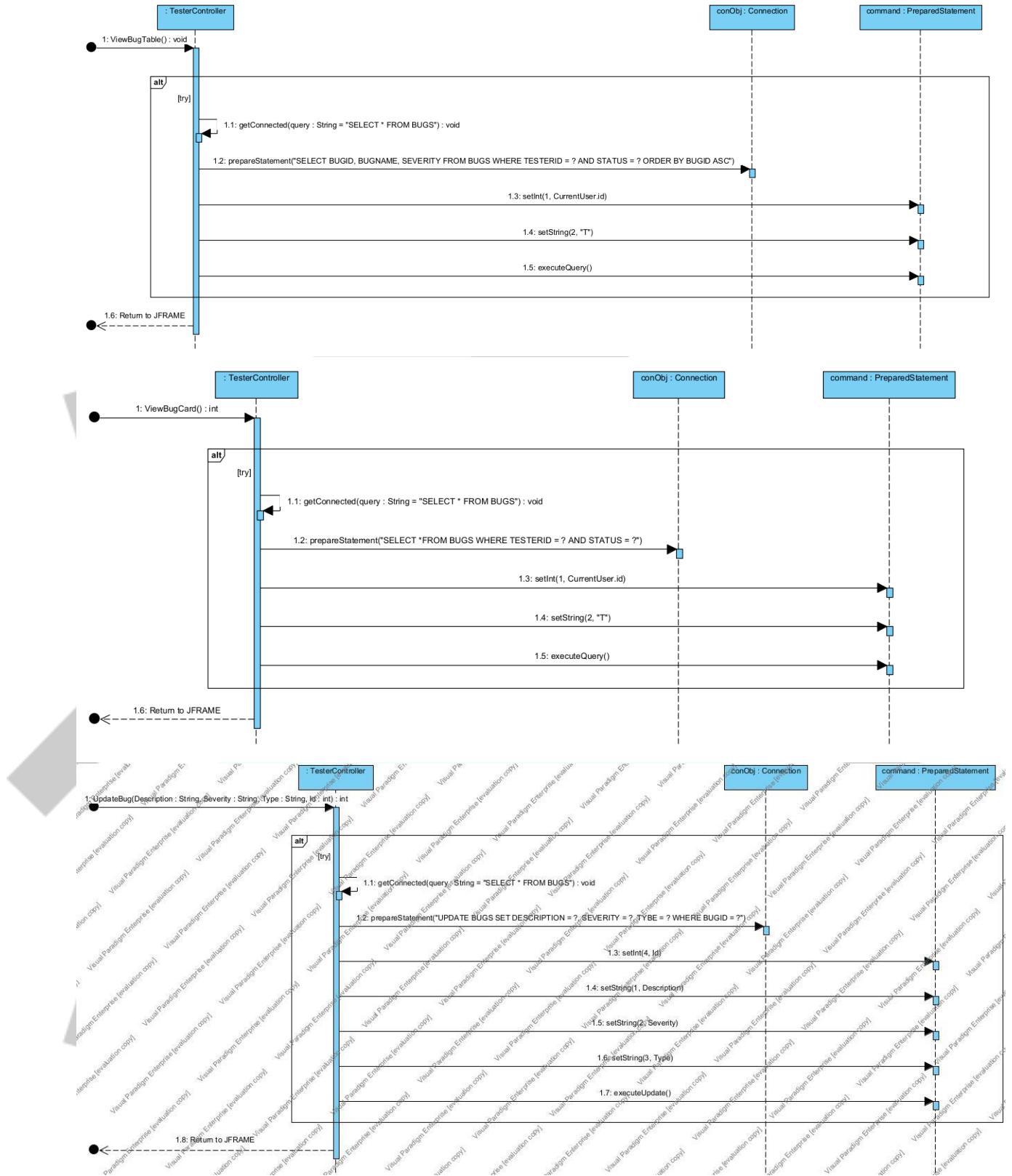
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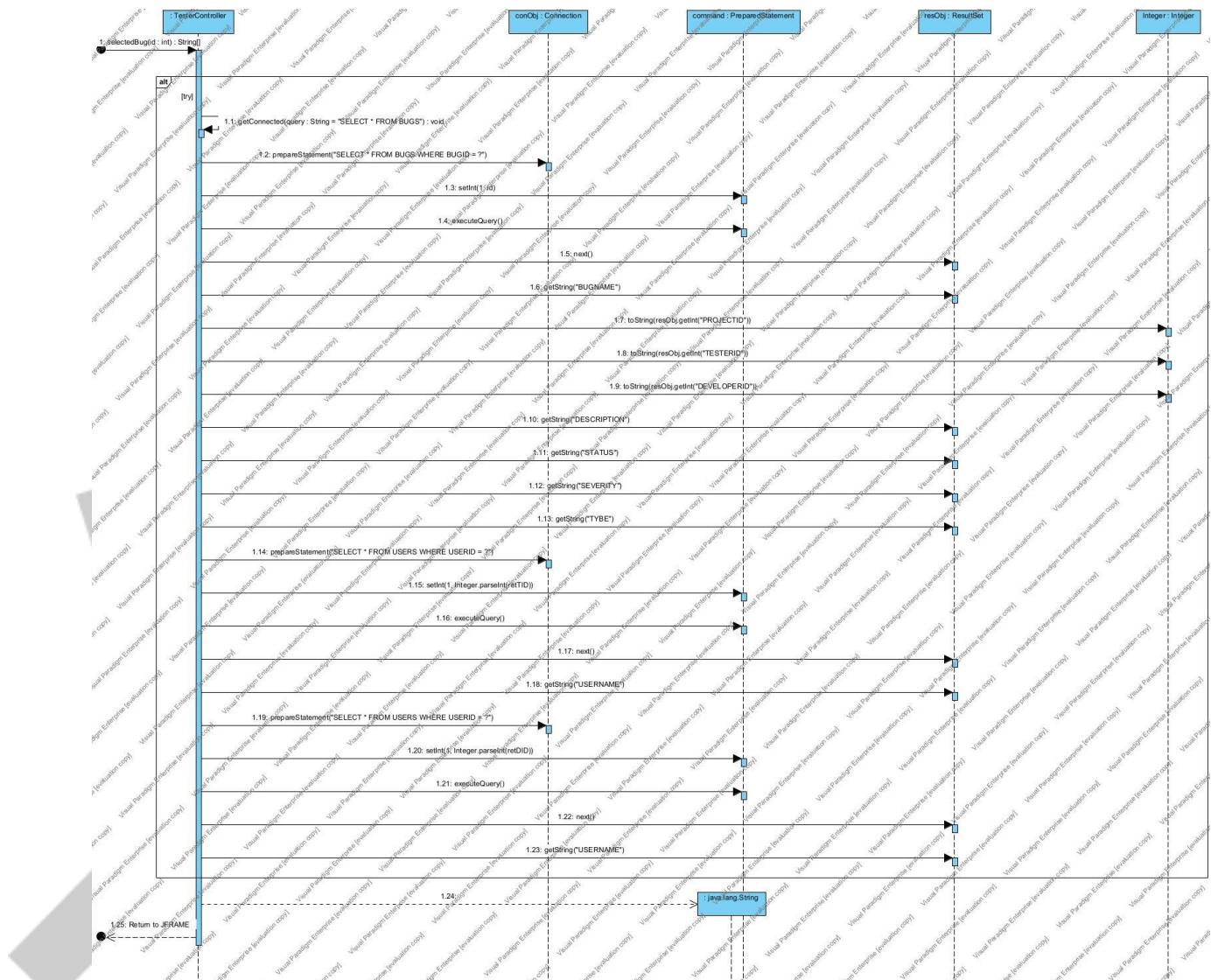
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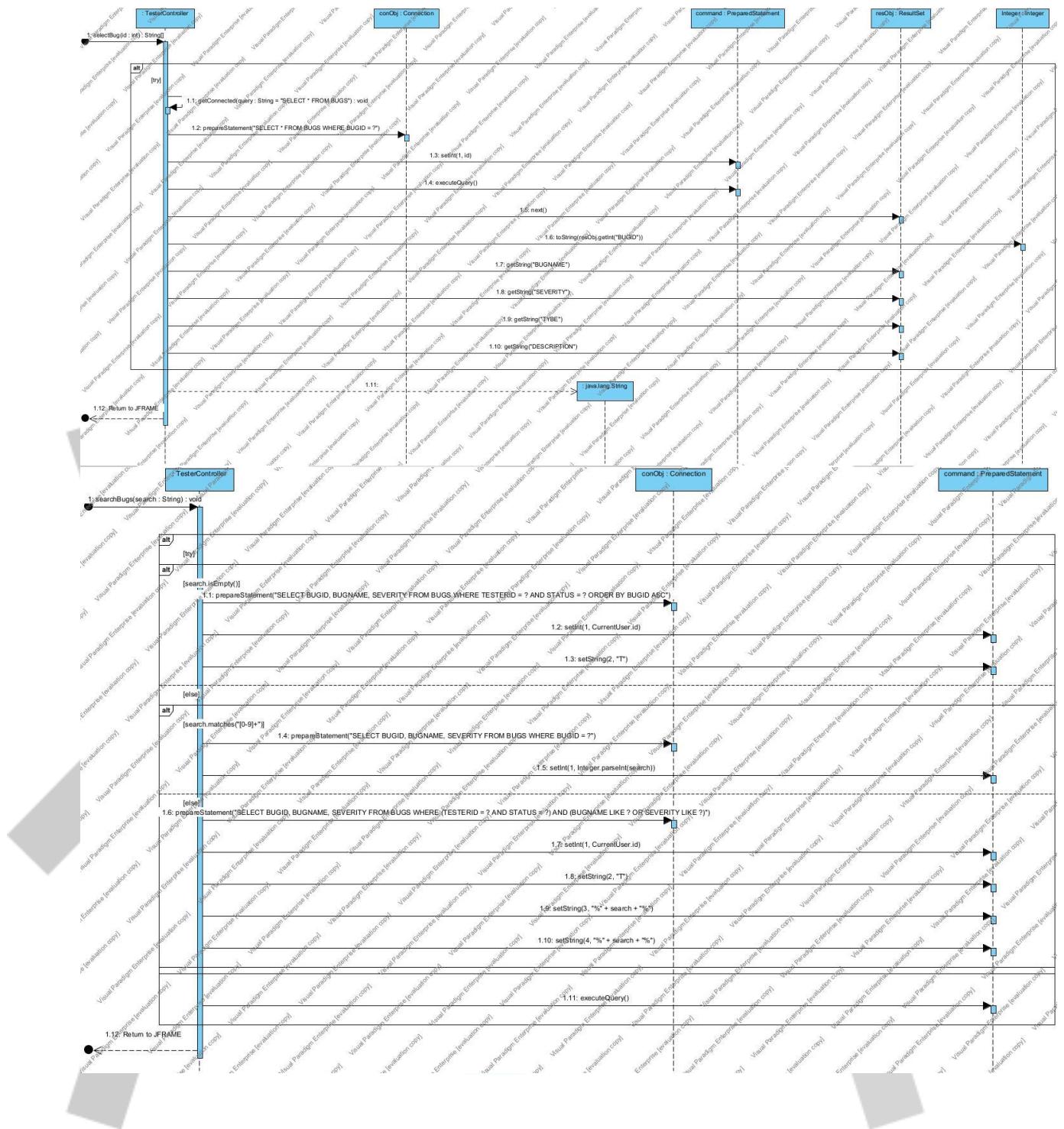
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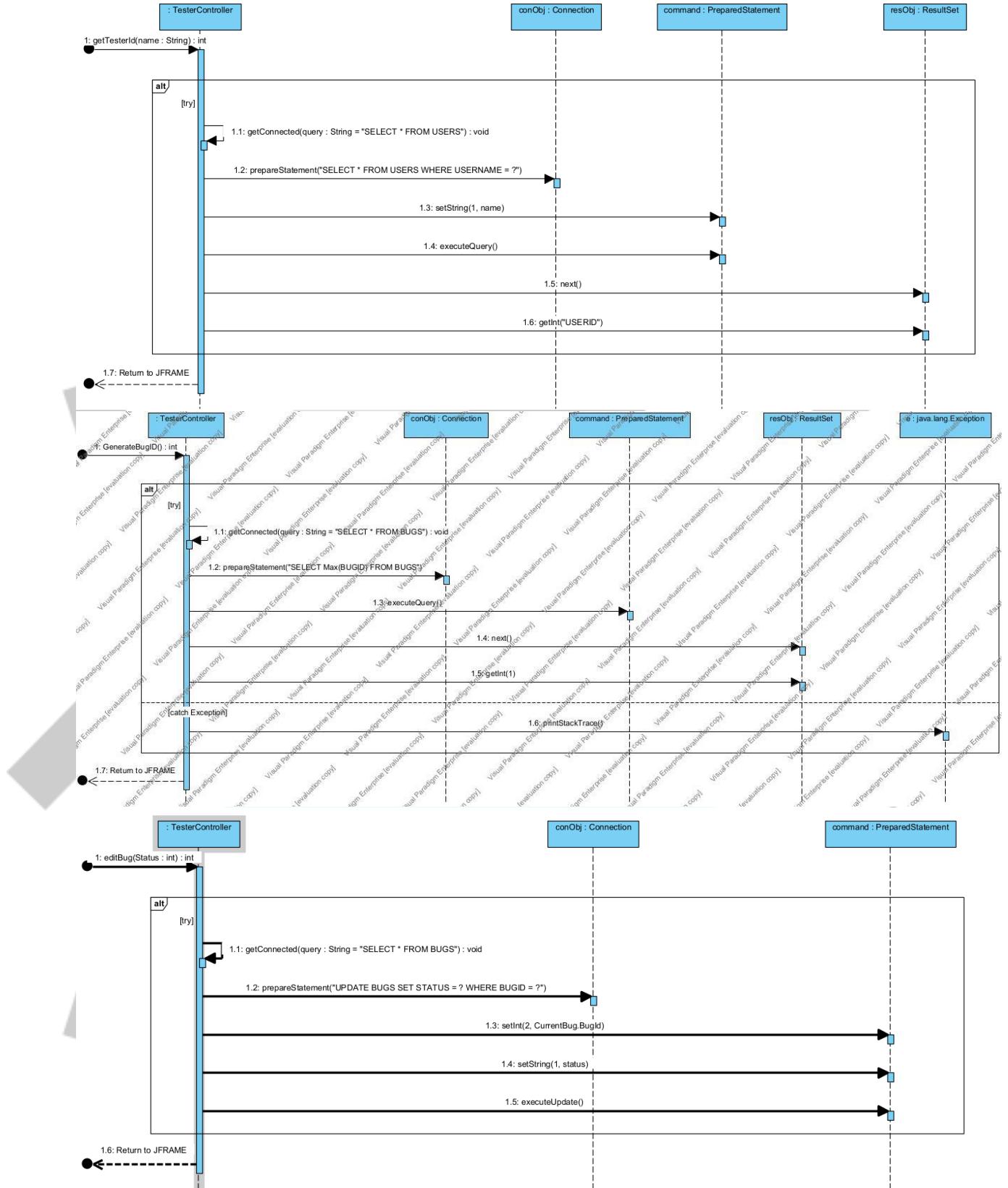
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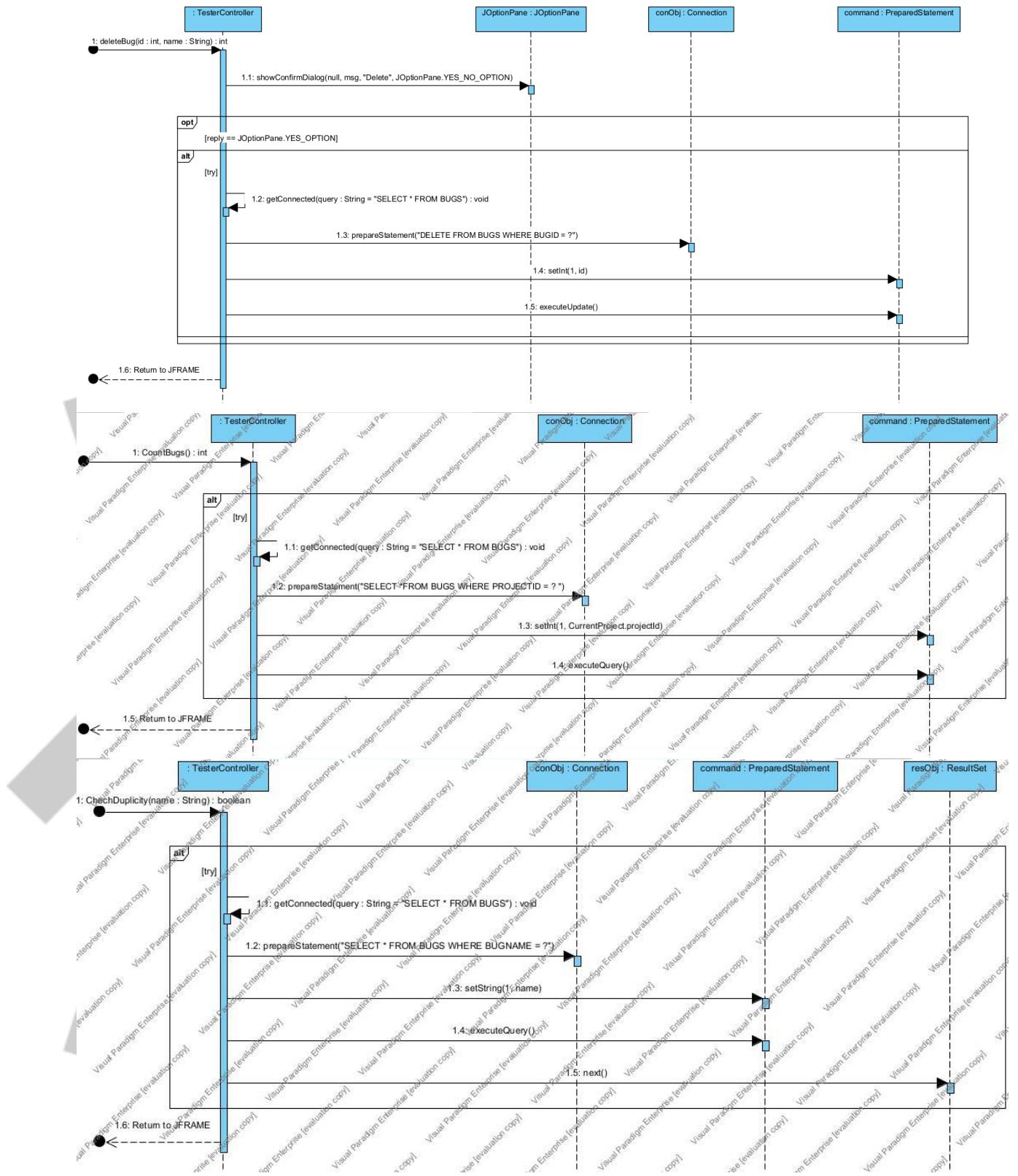
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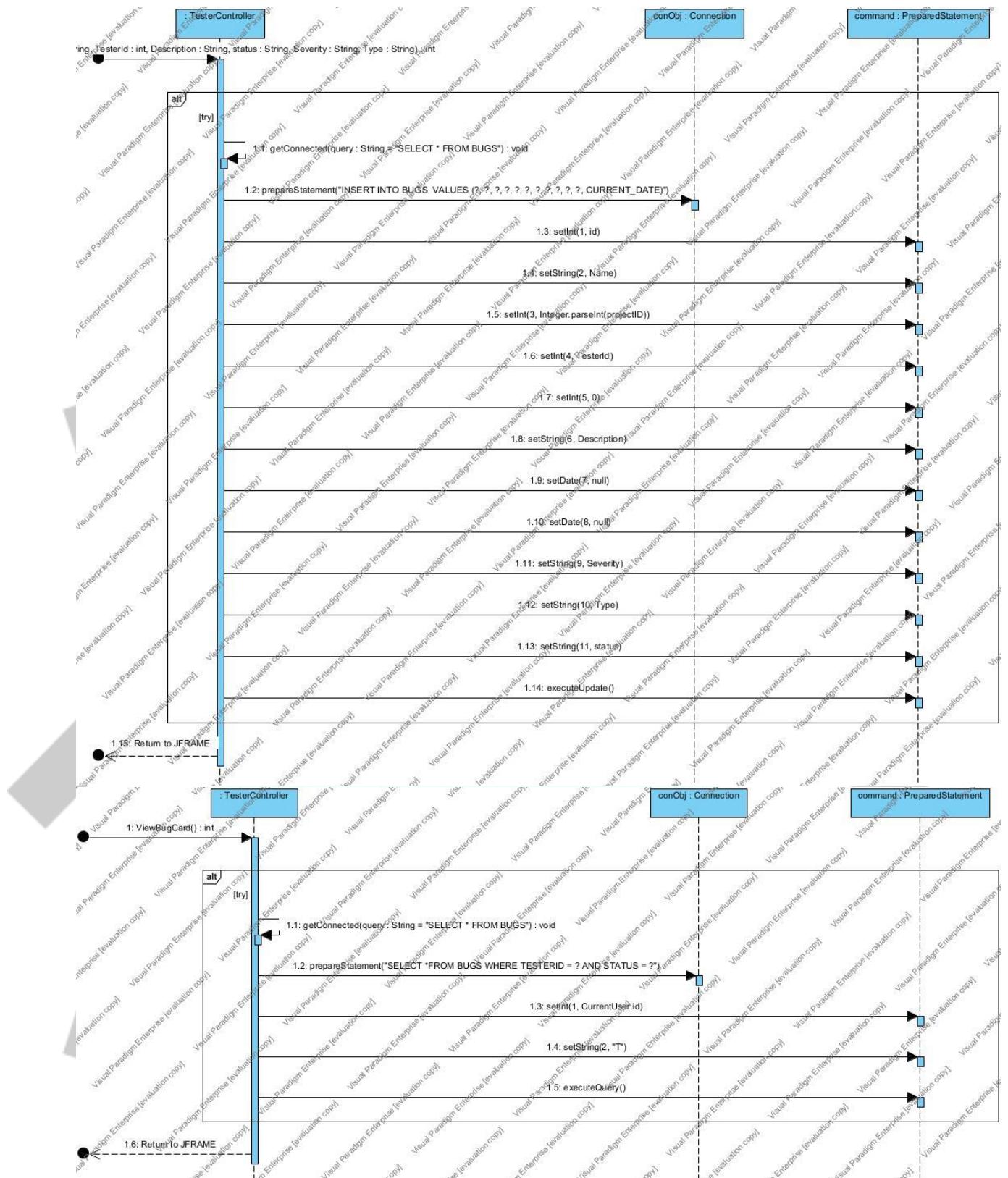
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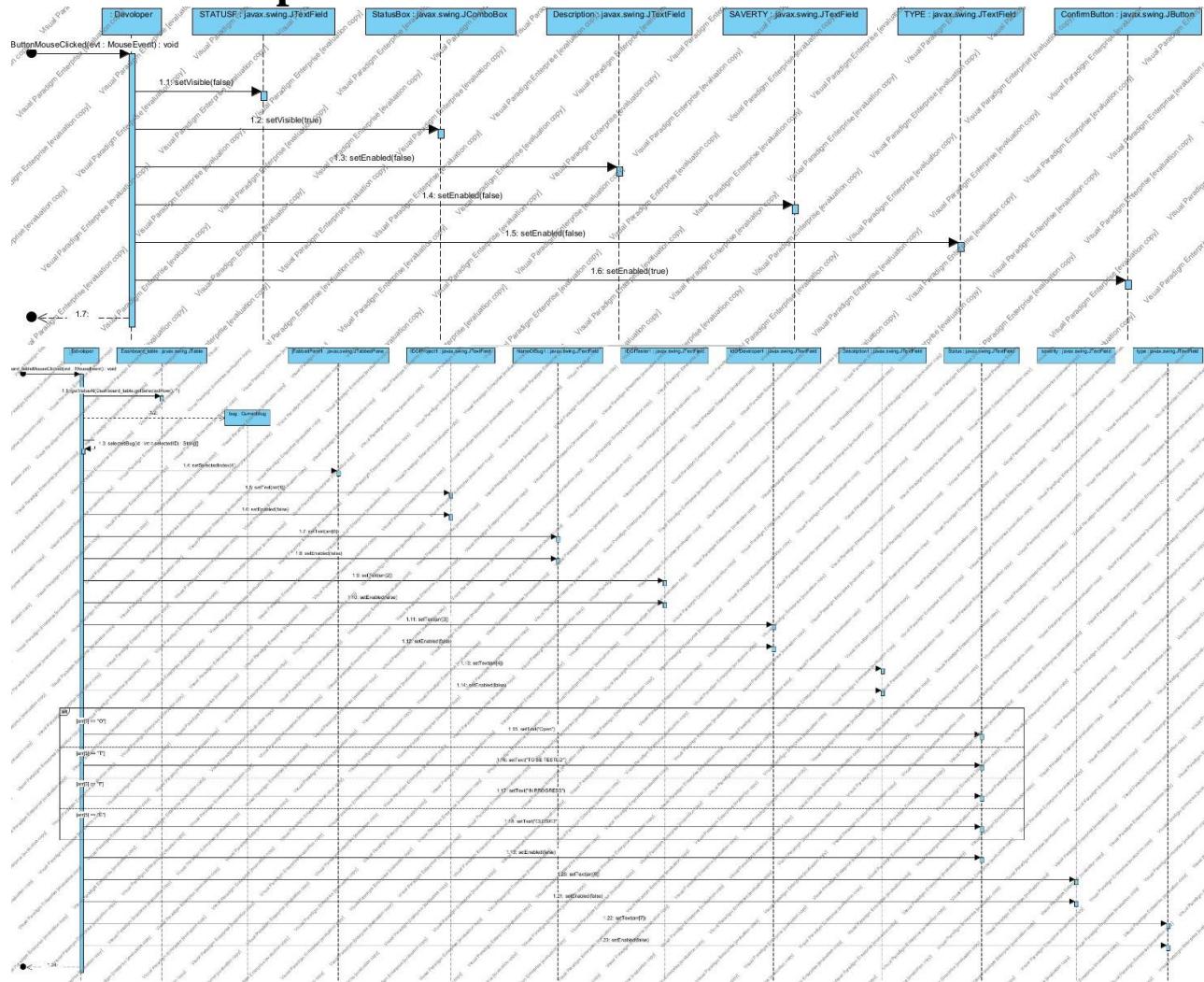
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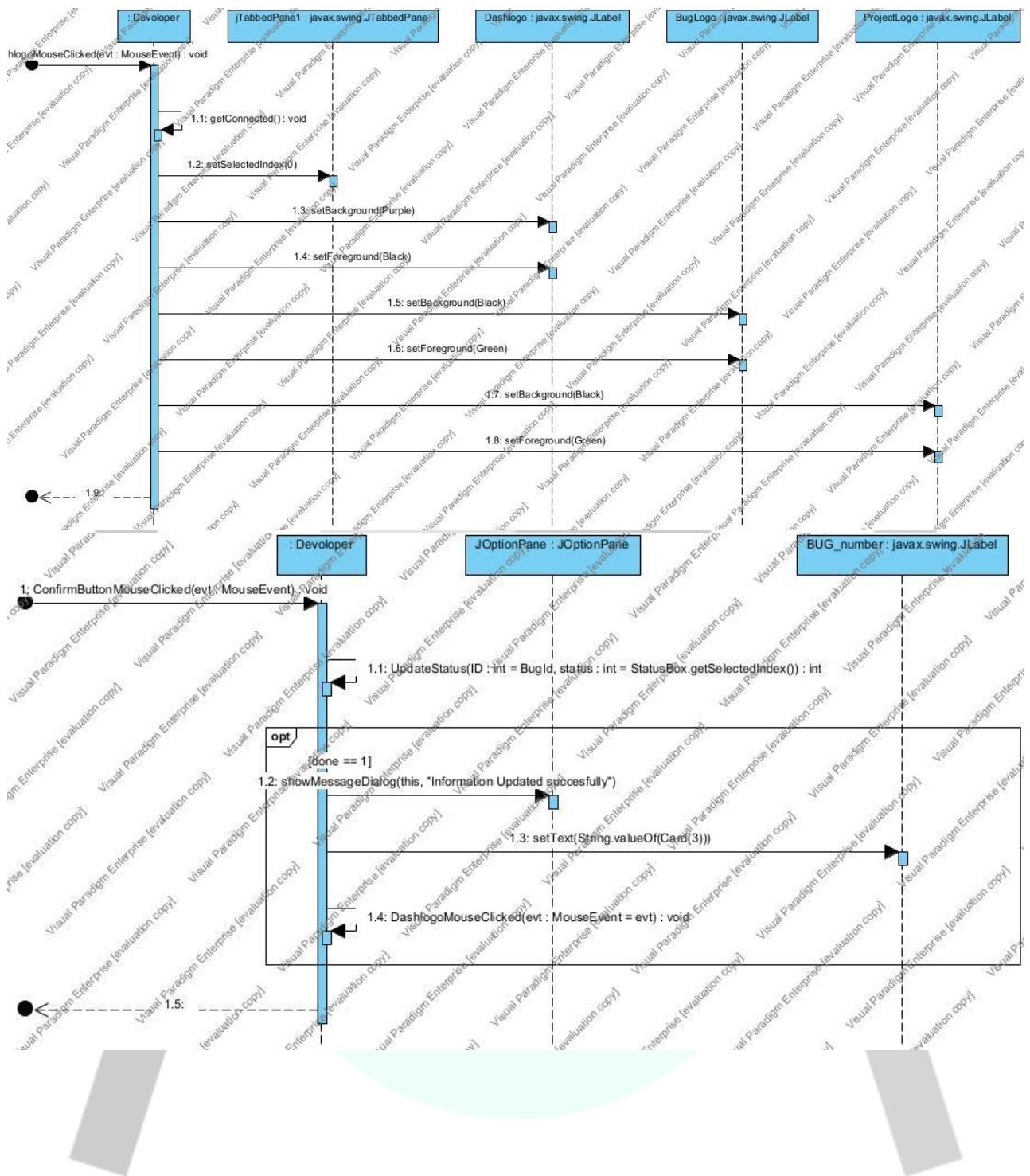
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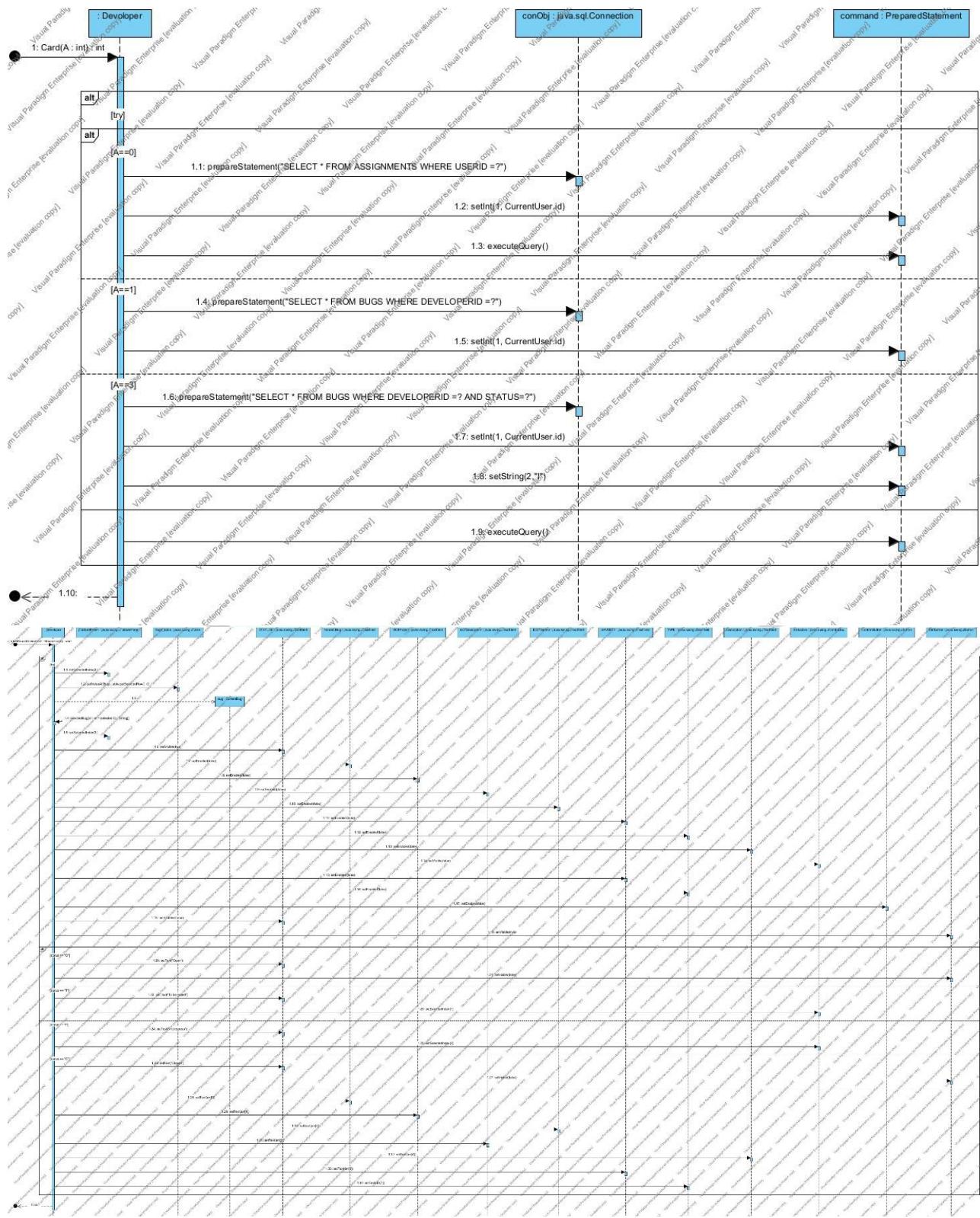
• Developer:



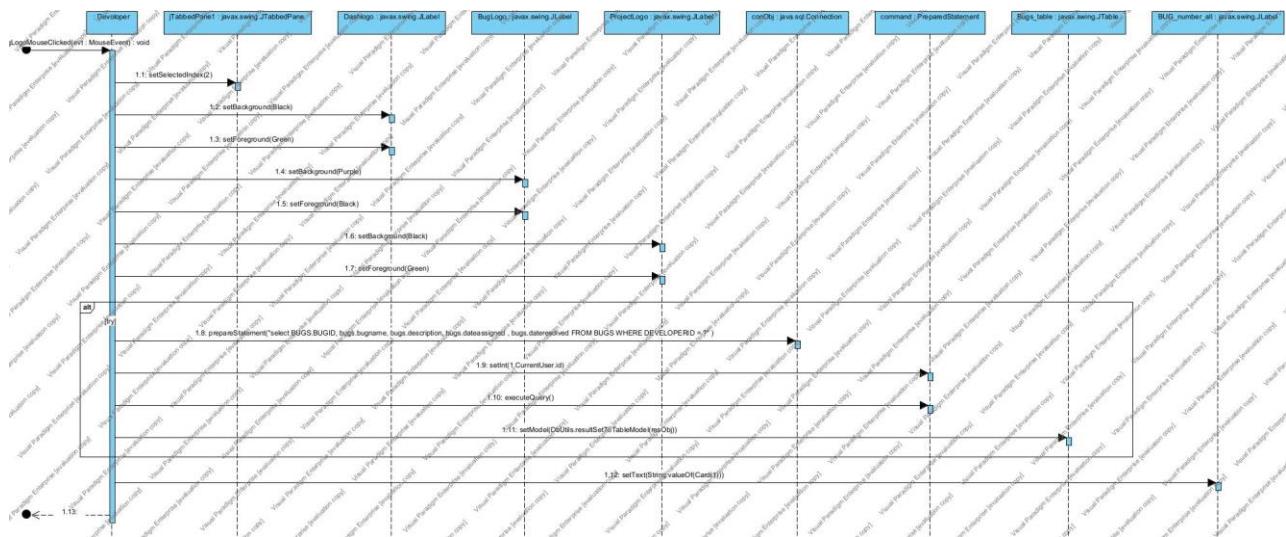
Software Requirements and Specifications for BTS



Software Requirements and Specifications for BTS

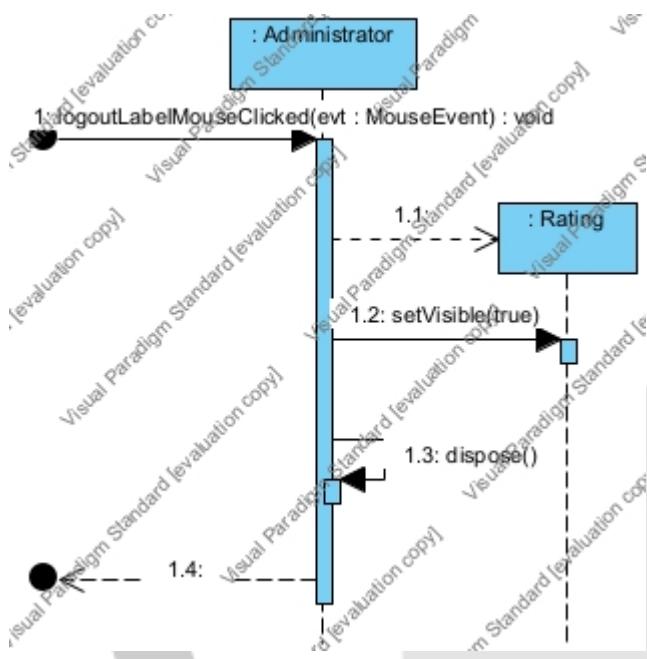


Software Requirements and Specifications for BTS

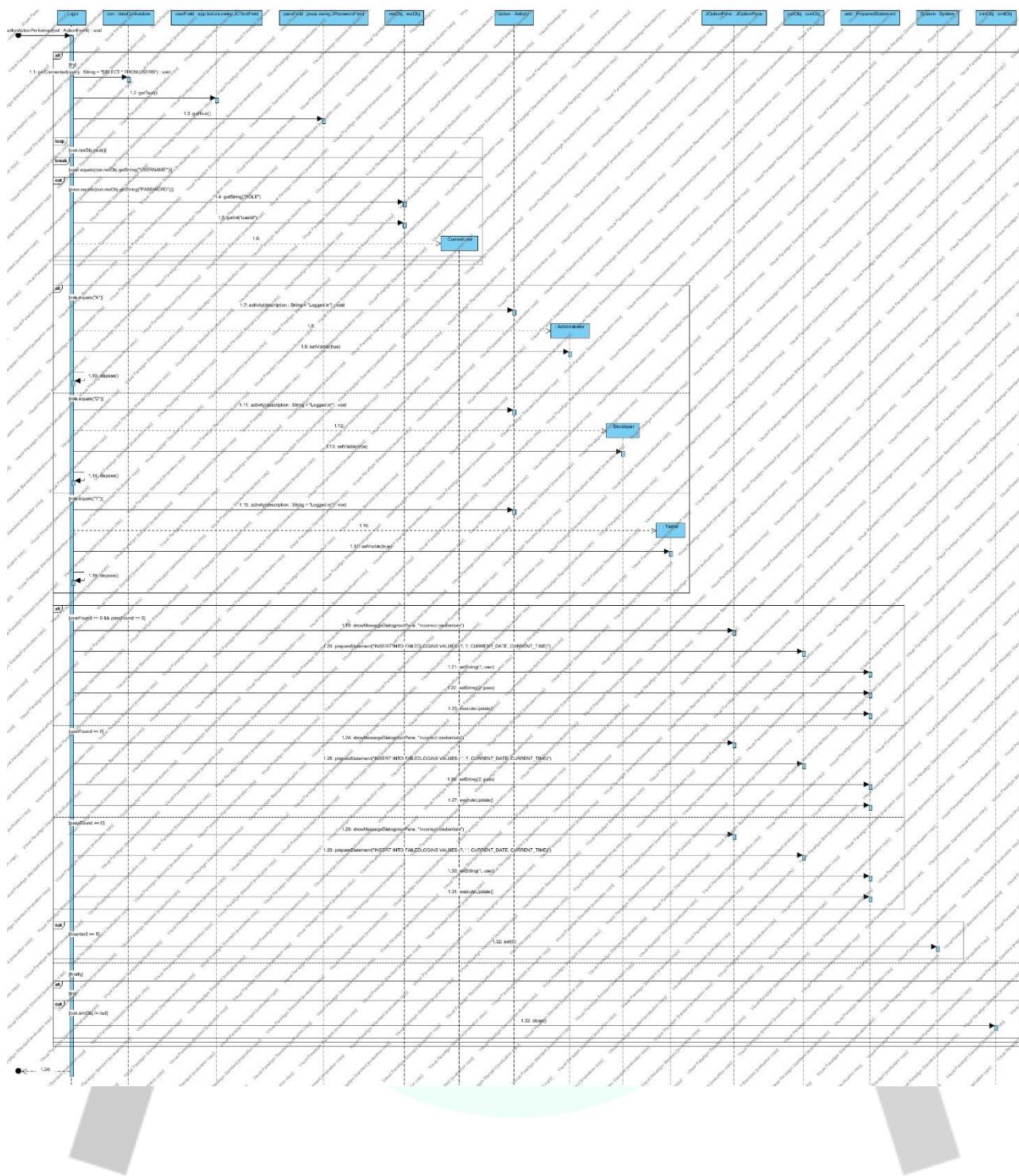


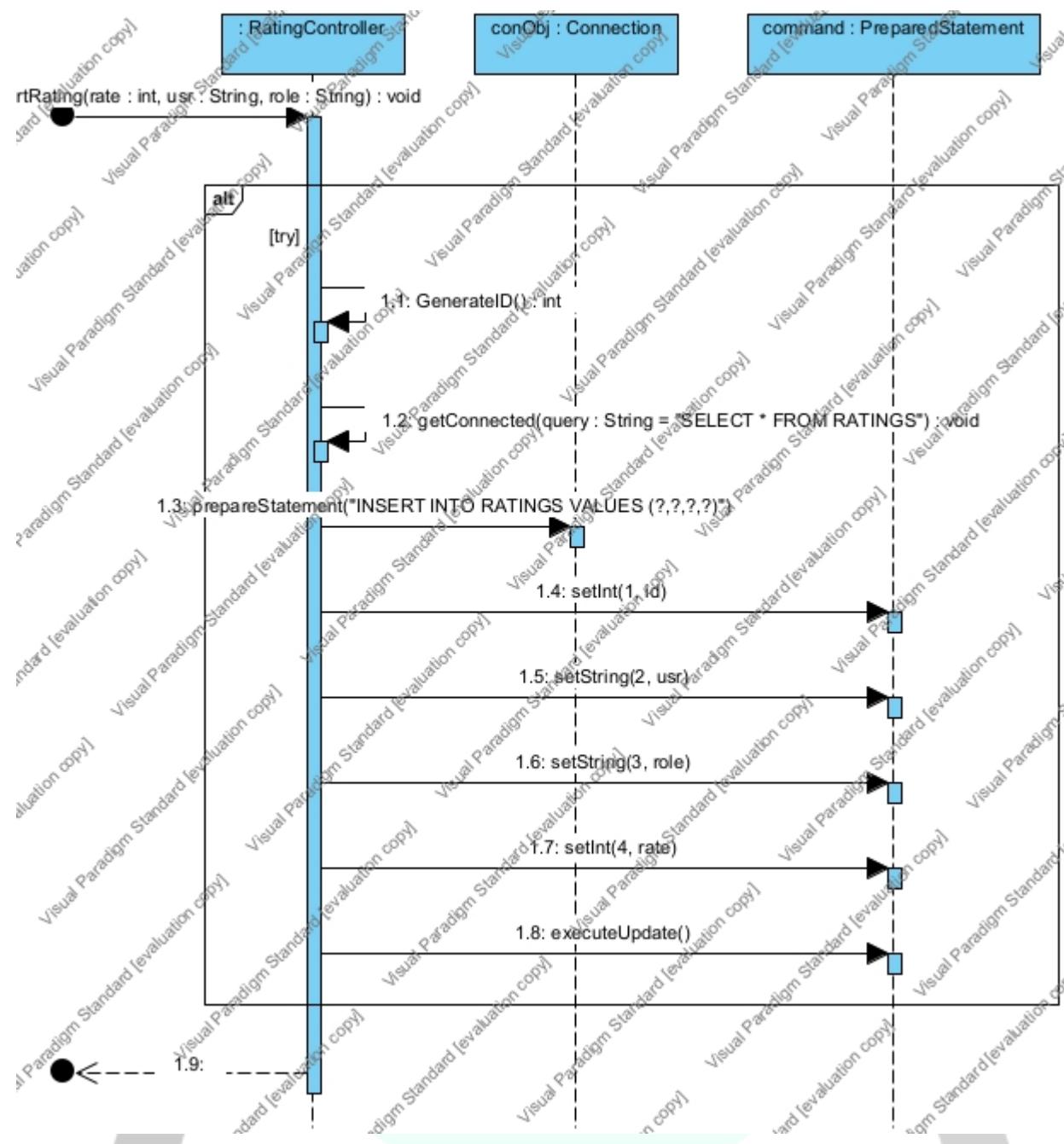
- System diagrams:

Software Requirements and Specifications for BTS



Software Requirements and Specifications for BTS





11. System Evolution:

- The system should be able to work on different operating systems.
- It should work properly on devices with low specifications. Only the server on which it's installed will be powerful.

12. Future Work:

- Turn the project from a specific use for bugs tracking into general use for project tracking.
- Administrator:
 - Print users data in a table.

- Print entire project's bug information.
- Print information about each bug in the project individually.
- Tester:
 - Print information about each bug in the project individually.
 - Enhance the communication between testers and developers by adding comments in each project.
- Developer:
 - Add errors and request assistance.
 - Print information about each bug in the project individually.
 - Enhance the communication between testers and developers by adding comments in each project.

13. Time Plan:

13.1 Work Breakdown Structure:

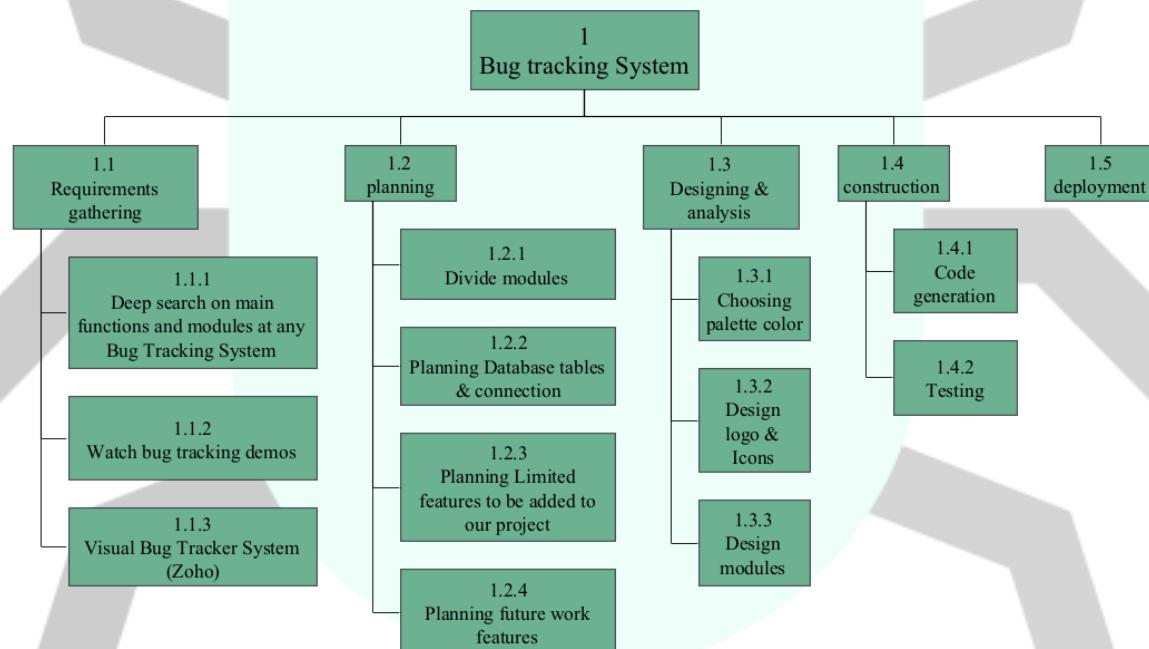


Figure 31 : Work Break Down Structure

13.2 Gantt chart:

Software Requirements and Specifications for BTS

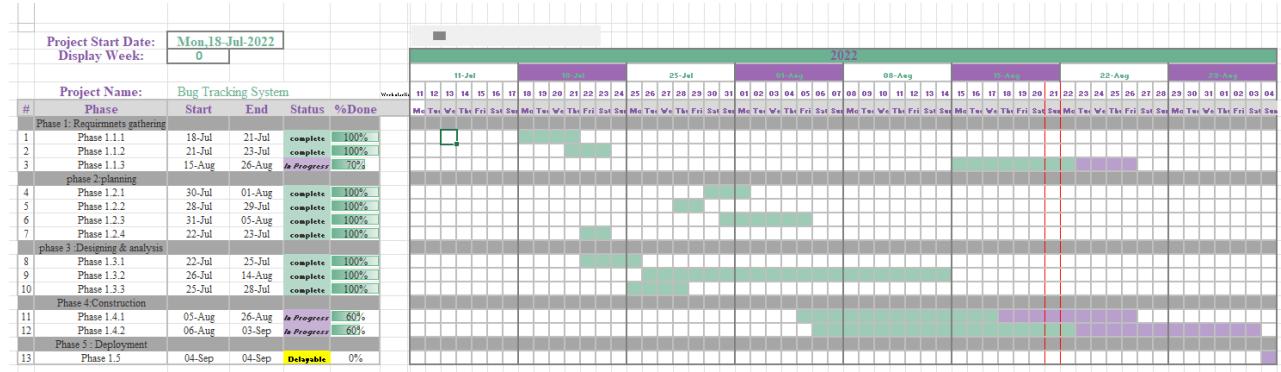


Figure 32 : Gantt chart

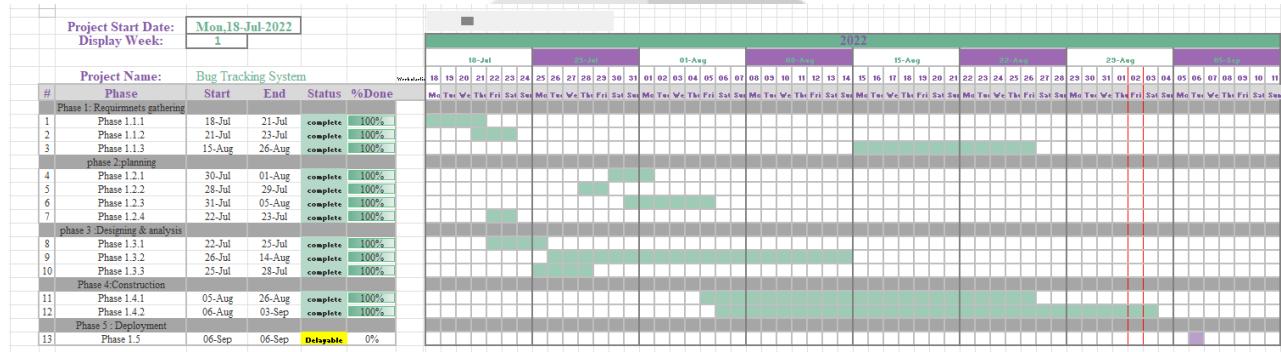


Figure 33 : Updated Gantt Chart

14. References:

- <https://projectsgeek.com/2016/02/bug-tracking-system-java-project.html>

