Mango-cr#3-TEAM-08 - Change request log

# Concept Location

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| Step # | Description | Rationale |
| 1 | *We ran the system* | *To assess the behavior of the system and identify any potential issues.* |
| 2 | *We interacted with the system: after logging in, we navigated to the Mango HomePage, users page, and admin page.* | *To familiarize ourselves with the system's workflow and identify relevant areas for investigation.* |
| 3 | *We attempted to change the password for an admin user, resulting in an error popup.* | *To reproduce the reported issue and verify its occurrence.* |
| 4 | *We inspected the webpage and examined the network section to determine which method was triggered.* | *To gather more information about the error and narrow down the search for the relevant code snippet.* |
| 5 | *The method name identified in the network tab was "UsersDwr.saveUserAdmin()".* | *To pinpoint the specific method that handles user password changes.* |
| 6 | *We initiated a search for the UsersDwr class within IntelliJ IDE.* | *To locate the file containing the method identified in step 5 and begin investigating the code further.* |

**Time spent (in minutes):** 90min.

***Classes and methods inspected:***

* *mangoSource/src/com/serotonin/mango/web/dwr/UsersDwr.java*
  + *public DwrResponseI18n saveUserAdmin(int id, String username, String password, String email, String phone,*

*boolean admin, boolean disabled, int receiveAlarmEmails, boolean receiveOwnAuditEvents,*

*List<Integer> dataSourcePermissions, List<DataPointAccess> dataPointPermissions)*

* *public DwrResponseI18n saveUser(int id, String password, String email, String phone, int receiveAlarmEmails,*

*boolean receiveOwnAuditEvents)*

* *mangoSource/src/com/serotonin/mango/db/dao/UserDao.java*
  + *void updateUser(User user)*

# Impact Analysis

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| --- | --- | --- |
| Step # | Description | Rationale |
| 1 | *Identified error: "An attempt was made to get a data value of type ‘VARCHAR’ from a data value of type ‘null’."* | *Understanding the nature of the error and its impact on the system is crucial for effective troubleshooting and resolution.* |
| 2 | *Inspected UsersDwr class.* | *Investigation of the UsersDwr class is essential to pinpoint the code responsible for handling password changes and identify potential causes of the error.* |
| 3 | *Inspected the saveUserAdmin() and saveUser() methods from the UsersDwr class.* | *Examination of these methods is necessary to understand how user information is saved and to identify any issues related to password change functionality.* |
| 4 | *Inspected the UserDao class.* | *Analysis of the UserDao class is required to understand how user data is retrieved and updated, which is relevant to resolving the identified error.* |
| 5 | *Inspected and debugged the saveUser() and updateUser() methods from the UserDao class.* | *Debugging these methods is crucial for identifying the root cause of the error and implementing necessary changes to ensure proper handling of password changes.* |
| 6 | *Modified the UPDATE\_USER SQL query and updateUser() method in the UserDao class.* | *Implementation of changes in the SQL query and method logic is necessary to address the root cause of the error and ensure proper handling of password changes.* |

**Time spent (in minutes):** 40

*Classes and methods inspected:*

* *mangoSource/src/com/serotonin/mango/web/dwr/UsersDwr.java*
  + *public DwrResponseI18n saveUserAdmin(int id, String username, String password, String email, String phone,*

*boolean admin, boolean disabled, int receiveAlarmEmails, boolean receiveOwnAuditEvents,*

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* *public DwrResponseI18n saveUser(int id, String password, String email, String phone, int receiveAlarmEmails,*

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* *mangoSource/src/com/serotonin/mango/db/dao/UserDao.java*
  + *void updateUser(User user)*

# PreFactoring

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| --- | --- | --- |
| **Step #** | ***Description*** | ***Rationale*** |
| **1** | *We performed initial inspection in the files to check if Prefactoring can be performed.* |  |
| **2** | *No explicit Pre-factoring was performed.* |  |

# Actualization

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| Step # | Description | Rationale |
| 1 | *Searched for UsersDwr class in IntelliJ IDE.* | *Locating the UsersDwr class is essential as the error was related to the method within this class.* |
| 2 | *Identified that the UsersDwr.saveUserAdmin() method validates and updates user information.* | *Understanding the functionality of the method helps in diagnosing and resolving the error effectively.* |
| 3 | *Discovered that the method interacts with the UserDao class to retrieve and manipulate user data.* | *Understanding the interaction between classes is crucial for identifying the root cause of the error and implementing the necessary changes.* |
| 4 | *Identified the updateUser method in the UserDao class as the source of the error.* | *Investigating the UserDao class and its methods helps in pinpointing the specific attribute causing the error and devising a solution to address it.* |
| 5 | *Found that a SQL query in the updateUser method was passing a NULL value for the homeURL attribute.* | *Identifying the specific SQL query causing the error is crucial for understanding the data flow and identifying where the correction needs to be applied.* |
| 6 | |  |  | | --- | --- | |  | *Removed the homeURL column from the SQL query and updateUser method to resolve the error.* | | *Modifying the SQL query and method logic ensures that NULL values are not passed for the homeURL attribute, addressing the root cause of the error.* |
| 7 | *Tested the system to verify if the changes were successful.* | *Testing the system after making changes ensures that the error has been resolved and that the system functions correctly without encountering the same issue.* |
| 8 | *Confirmed successful resolution of the error by changing the admin password and logging in.* | *Verifying that the password change functionality works correctly confirms that the error has been successfully resolved and the system is functioning as expected.* |

**Time spent (in minutes):** 75

*Classes and methods inspected:*

* *mangoSource/src/com/serotonin/mango/web/dwr/UsersDwr.java*
  + *public DwrResponseI18n saveUserAdmin(int id, String username, String password, String email, String phone,*

*boolean admin, boolean disabled, int receiveAlarmEmails, boolean receiveOwnAuditEvents,*

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* *mangoSource/src/com/serotonin/mango/db/dao/UserDao.java*
  + *void updateUser(User user)*

# Validation

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| --- | --- | --- |
| Step # | Description | Rationale |
| 1 | *Testcase: Change password.*  ***Inputs:***  *Username: admin.*  *New Password: new*  ***Expected output:***  *User saved* | *This is the regular expected behavior.*  *The test passed.* |
| 2 | *Testcase : login with new password.*  ***Inputs:***  *Username: admin*  *Password: new*  *Expected output:*  *Open mango homepage* | *This is the regular expected behavior.*  *The test passed.* |
| 3 | *Testcase : login with old password.*  ***Inputs:***  *Username: admin*  *Password: admin*  *Expected output:*  *Invalid Login* | *This is the regular expected behavior.*  *The test passed.* |

**Time spent (in minutes):** 25

# Summary of the change request

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| --- | --- | --- | --- | --- | --- |
| Phase | Time  (minutes) | No. of classes inspected | No. of classes changed | No. of methods inspected | No. of methods changes |
| Concept location | 90 | 2 | 0 | 6 | 0 |
| Impact Analysis | 40 | 2 | 0 | 6 | 4 |
| PreFactoring | 15 | 2 | 0 | 0 | 0 |
| Actualization | 75 | 2 | 0 | 6 | 2 |
| PostFactoring | - | - | - | - | - |
| Verification | 25 | 2 | 0 | 6 | 0 |
| Total | 245 |  |  |  |  |

# Conclusions

*For this modification, identifying the relevant code areas was straightforward since its structure isn't complex. We conducted impact analysis and change propagation through the codebase, and then updated the necessary parts accordingly. Testing was carried out manually.*