**WIL Report Management System**

Traceability Record

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By

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Table of Contents

[Chapter I | Introduction 4](#_Toc481760166)

[1.1 Purpose 4](#_Toc481760167)

[1.2 Acronyms and Definition 4](#_Toc481760168)

[Chapter II | Traceability Record Table 5](#_Toc481760169)

[2.1 URS-SRS-UC-AD-UI 5](#_Toc481760170)

[2.2 URS-CD-SD 7](#_Toc481760171)

[2.3 URS-UTC-STC 8](#_Toc481760172)

[Chapter III | Appendix 10](#_Toc481760173)

[3.1 User Requirement 10](#_Toc481760174)

[3.2 System Requirement 11](#_Toc481760175)

[3.3 Use Case 13](#_Toc481760176)

[3.4 Activity Diagram 14](#_Toc481760177)

[3.5 Sequence diagram 15](#_Toc481760178)

[3.6 User Interface 15](#_Toc481760179)

# **Chapter I | Introduction**

## **Purpose**

The purpose of this traceability record is to display a connection between the Use Case, requirements, and diagrams. It was created at the very beginning of a project to see the scope of projects and deliverables that will be produced.

## **Acronyms and Definition**

|  |  |
| --- | --- |
| **Acronyms** | **Definition** |
| UC | Use Case |
| URS | User Requirement Specification |
| SRS | System Requirement Specification |
| UI | User Interface |
| AC | Activity Diagram |
| CD | Class Diagram |
| SD | Sequence Diagram |
| UTC | Unit Test Case |
| STC | System Test Case |

**Definition**

|  |  |
| --- | --- |
| Software Design Document | A description of software created to facilitate analysis, planning, implementation, and decision-making. This design description is -used as a medium for communicating software design information and can be considered as a blueprint or model of the system. |
| Sequence diagram | An interaction diagram that shows how objects operate with one another and in what order. It is a construct of a message sequence chart. |
| Class diagram | A type of static structure diagram that describes the structure of a system by showing the system's classes, their attributes, operations (or methods), and the relationships among objects |
| User Interface | The industrial design field of human–computer interaction, is the space where interactions between humans and machines occur |
| Software Requirement Specification | A description of a software system to be developed. It lays out functional and non-functional requirements, and may include a set of use cases that describe user interactions that the software must provide. |

# **Chapter II | Traceability Record Table**

## **URS-SRS-UC-AD-UI**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **No.** | **URS** | **Description** | **Software Requirement Specification** | **Use case** | **Activity diagram** | **User Interface** |
|  |  | Visitor can register to the system by providing the first name, last name, description, company, position, email, password, profile image, signature image, start date, and role of user. | SRS-01 to SRS-09 |  | AD-01 | - |
|  |  | Student, Mentor, and Supervisor can edit their own profile. | SRS-05, SRS-08, SRS-10 to SRS-13 |  | AD-02 | UI-02 |
|  |  | Student, Mentor, and Supervisor can login by providing email and password | SRS-09, SRS-14 to SRS-20 |  | AD-03 | UI-01 |
|  |  | Student, Mentor, and Supervisor can logout from the system | SRS-09, SRS-21 to SRS-22 |  | AD-04 | - |
|  |  | Student can add registration code | SRS-23 to SRS-29 |  | AD-05 | UI-03 |
|  |  | Student, Mentor, and Supervisor can view tasks of a project | SRS-30 to SRS-33 |  | AD-06, AD-07 | UI-05, UI-06, UI-07 |
|  |  | Student, Mentor, and Supervisor can view the statistics of tasks | SRS-34 to SRS-36 |  | AD-08, AD-09 | UI-05 |
|  |  | Student can create a project by providing the name of project, description, and start date | SRS-37 to SRS-42 |  | AD-10 | - |
|  |  | Student can edit a project | SRS-08, SRS-39 to SRS-45 |  | AD-11 | - |
|  |  | Student can delete a project | SRS-40, SRS-43, SRS-46, SRS-47 |  | AD-12 | - |
|  |  | Student can create a task by providing the name of task, description, and start date. | SRS-48 to SRS-55 |  | AD-13 | - |
|  |  | Student can edit a task | SRS-51 , SRS-53, SRS-54, SRS-56 to SRS-59 |  | AD-14 | - |
|  |  | Student can delete a task | SRS-51, SRS 60, SRS-61 |  | AD-15 | - |
|  |  | Student can change a status of task | SRS-51, SRS-62 to SRS-71 |  | AD-16 to AD-18 | - |
|  |  | Student, Mentor, and Supervisor can view comments | SRS-72, SRS-73 |  | AD-19 | UI-09 |
|  |  | Student, Mentor, and Supervisor can create a comment by providing a comment message | SRS-74 to SRS-78 |  | AD-20 | - |
|  |  | Student, Mentor, and Supervisor can delete their own comment | SRS-79 to SRS-84 |  | AD-21 | - |
|  |  | Student, Mentor, and Supervisor can view activities of tasks in a specific project | SRS-85, SRS-86 |  | AD-22 | - |
|  |  | Mentor and Supervisor can view activities of all under guidance students | SRS-87 |  | AD-23 | - |
|  |  | Student can generate a weekly report | SRS-72, SRS-88, SRS-89 |  | AD-24 | UI-10 |
|  |  | Student can print a weekly report | SES-90 to SRS-93 |  | AD-25 | UI-11 |
|  |  | Student, Mentor, and Supervisor can receive an activity notification via Web application | SRS-94 to SRS-97 |  | AD-26 | UI-09 |
|  |  | Student, Mentor, and Supervisor can receive an activity notification via Email | SRS-98, SRS-99 |  | AD-27 | - |

## **URS-CD-SD**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.** | **URS** | **Description** | **Class description** | **Sequence diagram** |
|  |  | Visitor can register to the system by providing the first name, last name, description, company, position, email, password, profile image, signature image, start date, and role of user. | CD-01, CD-07, CD-11 | SD-01 |
|  |  | Student, Mentor, and Supervisor can edit their own profile. | CD-01, CD-07, CD-11 | SD-03 |
|  |  | Student, Mentor, and Supervisor can login by providing email and password | CD-01, CD-07, CD-11, CD-12 | SD-04s |
|  |  | Student, Mentor, and Supervisor can logout from the system | CD-01, CD-07, CD-11 | SD-05 |
|  |  | Student can add registration code | CD-01, CD-07, CD-11 | SD-06 |
|  |  | Student, Mentor, and Supervisor can view tasks of a project | CD-02, CD-03, CD-08, CD-09, CD-13, CD-14 | SD-07 |
|  |  | Student, Mentor, and Supervisor can view the statistics of tasks | CD-02, CD-03, CD-08, CD-09, CD-13, CD-14 | SD-07 |
|  |  | Student can create a project by providing the name of project, description, and start date | CD-02, CD-08, CD-13 | SD-08 |
|  |  | Student can edit a project | CD-02, CD-08, CD-13 | SD-09 |
|  |  | Student can delete a project | CD-02, CD-08, CD-13 | SD-10 |
|  |  | Student can create a task by providing the name of task, description, and start date. | CD-03, CD-09 | SD-12 |
|  |  | Student can edit a task | CD-03, CD-09 | SD-13 |
|  |  | Student can delete a task | CD-03, CD-09 | SD-14 |
|  |  | Student can change a status of task | CD-03, CD-09 | SD-15 |
|  |  | Student, Mentor, and Supervisor can view comments | CD-05, CD-10, CD-15 | SD-17 |
|  |  | Student, Mentor, and Supervisor can create a comment by providing a comment message | CD-05, CD-10, CD-15 | SD-18 |
|  |  | Student, Mentor, and Supervisor can delete their own comment | CD-05, CD-10, CD-15 | SD-19 |
|  |  | Student, Mentor, and Supervisor can view activities of tasks in a specific project | CD-04 | SD-16 |
|  |  | Mentor and Supervisor can view activities of all under guidance students | CD-04 | SD-07 |
|  |  | Student can generate a weekly report | CD-02, CD-03, CD-08, CD-09, CD-13, CD-14 | SD-20 |
|  |  | Student can print a weekly report | - | - |
|  |  | Student, Mentor, and Supervisor can receive an activity notification via Web application | CD-06 | SD-21 |
|  |  | Student, Mentor, and Supervisor can receive an activity notification via Email | CD-06 | SD-22 |

## **URS-UTC-STC**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.** | **URS** | **Description** | **Unit test** | **System test** |
|  |  | Visitor can register to the system by providing the first name, last name, description, company, position, email, password, profile image, signature image, start date, and role of user. | UTC-10 to UTC-13 |  |
|  |  | Student, Mentor, and Supervisor can edit their own profile. | UTC-14 |  |
|  |  | Student, Mentor, and Supervisor can login by providing email and password | - |  |
|  |  | Student, Mentor, and Supervisor can logout from the system | - |  |
|  |  | Student can add registration code | UTC-08 |  |
|  |  | Student, Mentor, and Supervisor can view tasks of a project | UTC-17, UTC-30 to UTC-32 |  |
|  |  | Student, Mentor, and Supervisor can view the statistics of tasks | UTC-04, UTC-05 |  |
|  |  | Student can create a project by providing the name of project, description, and start date | UTC-20 |  |
|  |  | Student can edit a project | UTC-21 |  |
|  |  | Student can delete a project | UTC-22 |  |
|  |  | Student can create a task by providing the name of task, description, and start date. | UTC-25 |  |
|  |  | Student can edit a task | UTC-26 |  |
|  |  | Student can delete a task | - |  |
|  |  | Student can change a status of task | UTC-33 |  |
|  |  | Student, Mentor, and Supervisor can view comments | UTC-35, UTC-36 |  |
|  |  | Student, Mentor, and Supervisor can create a comment by providing a comment message | UTC-34 |  |
|  |  | Student, Mentor, and Supervisor can delete their own comment | UTC-37 |  |
|  |  | Student, Mentor, and Supervisor can view activities of tasks in a specific project | UTC-30 to UTC-32 |  |
|  |  | Mentor and Supervisor can view activities of all under guidance students | UTC-29 |  |
|  |  | Student can generate a weekly report | - |  |
|  |  | Student can print a weekly report | - |  |
|  |  | Student, Mentor, and Supervisor can receive an activity notification via Web application | - |  |
|  |  | Student, Mentor, and Supervisor can receive an activity notification via Email | - |  |

# **Chapter III | Appendix**

## **User Requirement**

1. Visitor can register to the system by providing the first name, last name, description, company, position, email, password, profile image, signature image, start date, and role of user.
2. Student, Mentor, and Supervisor can edit their own profile.
3. Student, Mentor, and Supervisor can login by providing email and password.
4. Student, Mentor, and Supervisor can logout from the system.
5. Student can add registration code.
6. Student, Mentor, and Supervisor can view tasks of a project.
7. Student, Mentor, and Supervisor can view the statistics of tasks.
8. Student can create a project by providing the name of project, description, and start date.
9. Student can edit a project.
10. Student can delete a project.
11. Student can create a task by providing the name of task, description, and start date.
12. Student can edit a task.
13. Student can delete a task.
14. Student can change a status of task.
15. Student, Mentor, and Supervisor can view comments.
16. Student, Mentor, and Supervisor can create a comment.
17. Student, Mentor, and Supervisor can delete their own comment.
18. Student, Mentor, and Supervisor can view activities of tasks in a specific project.
19. Mentor and Supervisor can view activities of all under guidance students.
20. Student can generate a weekly report.
21. Student can print a weekly report
22. Student, Mentor, and Supervisor can receive an activity notification via Web application.
23. Student, Mentor, and Supervisor can receive an activity notification via Email.

## **System Requirement**

1. The system shall provide UI for the visitor to receive first name, last name, description, company, position, email, password, profile image, signature image, start date, and role of user.
2. The system shall validate first name, last name, description, company, position, email, password, start date, and role of user.
3. The system shall display an error message “The email has already been taken”.
4. The system shall display an error message “The email must be a valid email address”.
5. The system shall display an error message “All fields are required”.
6. The system shall redirect to dashboard.
7. The system shall connect to database.
8. The system saves input data into the database.
9. The system shall redirect to Login page.
10. The system shall provide UI for the student to edit first name, last name, description, company, position, email, password, profile image, signature image, and start date.
11. The system shall validate first name, last name, description, company, position, email, password, and start date.
12. The system shall provide UI to display an error message “Invalid Email”.
13. The system shall redirect to profile page.
14. The system shall provide UI to receive Email and password.
15. The system shall validate email and password.
16. The system displays an error message “Invalid credential”.
17. The system displays an error message “The password must be at least 6 characters”.
18. The system shall navigate the student to access the student’s dashboard.
19. The system shall navigate the mentor to access the mentor’s dashboard.
20. The system shall navigate the supervisor to access the supervisor’s dashboard.
21. The system shall provide a button to logout.
22. The system shall be logged out.
23. The system shall provide UI to receive a code
24. The system shall validate a code.
25. The system shall display a confirmation message “Albert Einstein (Supervisor)?” with “Confirm” button and “Cancel” button.
26. The system shall link the mentor/supervisor account to the student account.
27. The system shall redirect to profile page.
28. The system shall update a name of mentor or supervisor on student’s profile page.
29. The system shall lock the button.
30. The system provide UI to display list of projects, a button of creating new project, task statistics, and summary of activities frequency.
31. The system shall provide UI to display the task page which contains task statistics, list of tasks, card of tasks tab, and tasks activity tab.
32. The system shall display a card of task on card board.
33. The system shall display an activity of a task.
34. The system shall provide UI to display a dashboard which contains statistics box, activities box, and a list of projects.
35. The system shall redirect to the dashboard of a selected student
36. The system shall provide UI to display a dashboard which contains statistics box, activities box, and a list of projects.
37. The system shall provide “create new project” button in the dashboard.
38. The system shall provide UI to receive project name, project description, start date, “create” button, and “cancel” button.
39. The system shall validate project name, description, and start date.
40. The system redirects to the dashboard.
41. The system shall display an error message “The project name field is required.”.
42. The system displays an error message “The description field is required.”.
43. The system shall provide UI to display student’s dashboard.
44. The system shall provide UI to receive project name, description, start date, “edit” button, and “Cancel” button.
45. The system shall lock the “Edit” button.
46. The system shall provide UI to display a confirmation message “Are you sure to delete this project?” with “Confirm” and “Cancel” button.
47. The system shall delete a project in database.
48. The system shall provide UI to receive tasks name, task description, start date, “create” button, and “cancel” button.
49. The system shall validate task name, description, and start date.
50. The system shall create a new task object in the database.
51. The system shall redirect to Task page.
52. The system shall lock the “create” button.
53. The system shall display an error message “The task name field is required.”
54. The system shall display an error message “The task description field is required.”
55. The system displays an error message “The start date field is required.”
56. The system shall provide UI which receive tasks name, task description, “update” button, and “cancel” button.
57. The system shall provide UI which receive tasks name, task description, “update” button, and “cancel” button.
58. The system shall validate tasks name and task description.
59. The system shall update a task object in the database
60. The system shall provide UI to display a confirmation message “Are you sure to delete this task?” with “Confirm” and “Cancel” button.
61. The system shall delete the selected task from the database.
62. The system shall provide UI to select the start date with “Confirm” button, and “Cancel” button.
63. The system shall validate the start date.
64. The system shall change the task status.
65. The system shall displays a task in card style.
66. The system shall provide UI to display task detail with the status button
67. The system shall lock the “Confirm” button.
68. The system display forbidden sign as a mouse cursor.
69. The system shall lock for changing the status of a task.
70. The system shall remain a card task in the same column.
71. The system shall discard to change the status of task.
72. The system shall request the task from database.
73. The system shall provide UI to display a task detail, comment field, and status buttons.
74. The system shall provide UI to display task detail, status buttons, and comment field with “comment” button
75. The system shall validate a comment field.
76. The system shall save the comment data into the database.
77. The system shall display a comment.
78. The system shall lock a comment button.
79. The system shall provide a bin icon to delete their own comment.
80. The system shall display a confirmation message “Are you sure to delete this comment?” with “Confirm” button and “Cancel” button.
81. The system shall delete the comment in the database.
82. The system shall display a message “Delete comment success”.
83. The system shall redirect to the task detail page.
84. The system shall discard to delete a comment.
85. The system shall provide UI to display task statistics, List tab, Card tab, and activities tab.
86. The system displays all activities of a selected project.
87. The system provides UI to display dashboard with task all task statistics, and all activities of students.
88. The system shall arrange task details in the report template.
89. The system shall provide UI to display a weekly report which is separated by the project.
90. The system shall provide UI to see a preview of a report with “Print” and “Cancel” button.
91. The system sends a weekly report to a printer
92. The system redirects to the report page.
93. The system shall discard to print a report.
94. The system shall detect a new activity.
95. The system shall send a request to Firebase service.
96. The system shall observe data in Firebase.
97. The system shall display an activity notification pop-up on the website, on “Today” notification tab, and on “All” tab.
98. The system shall detect a new activity.
99. The system shall send a request to EmailSender.

## **Use Case**

UC-01: Register

UC-02: Edit profile

UC-03: Login

UC-04: Logout

UC-05: Add registration code

UC-06: View a task

UC-07: View the statistics of tasks

UC-08: Create a project

UC-09: Edit a project

UC-10: Delete a project

UC-11: Create a task

UC-12: Edit a task

UC-13: Delete a task

UC-14: Change a status of a task

UC-15: View a comment

UC-16: Create a comment

UC-17: Delete a comment

UC-18: View activities in a project

UC-19: View activities of the under guidance students

UC-20: Generate a weekly report

UC-21: Print a weekly report

UC-22: Receive a notification via Web application

UC-23: Receive an activity notification via Email

## **Activity Diagram**

AD-01 Registration

AD-02 Edit profile

AD-03 Login

AD-04 Logout

AD-05 Add Mentor or Supervisor code

AD-06 View a task (Role as a student)

AD-07 View a task (Role as a Mentor or Supervisor)

AD-08 View statistics of tasks (Role as a student)

AD-09 View statistics of tasks (Role as a Mentor or Supervisor)

AD-10 Create a project

AD-11 Edit a project

AD-12 Delete a project

AD-13 Create a task

AD-14 Update a task

AD-15 Delete a task

AD-16 Change a task status (List tab)

AD-17 Change a task status (Card tab)

AD-18 Change a task status (in task detail page)

AD-18 View a comment

AD-19 Create a comment

AD-20 Delete a comment

AD-21 View activities in a project

AD-22 View activities of the under guidance students

AD-23 Generate a weekly report

AD-24 Print a report

AD-25 Web notification

AD-26 Mail notification

## **Sequence diagram**

SD-01 Registration

SD-02 View profile

SD-03 Edit profile

SD-04 Login

SD-05 Logout

SD-06 Add code

SD-07 View project

SD-08 Add project

SD-09 Edit project

SD-10 Delete project

SD-11 View task

SD-12 Add task

SD-13 Edit task

SD-14 Delete task

SD-15 Move a task

SD-16 View TaskLog

SD-17 View Comment

SD-18 Add comment

SD-19 Edit comment

SD-20 Delete comment

SD-21 View weekly report

SD-22 Receive web notification

SD-23 Receive Email notification

## **User Interface**

UI-01 Login

UI-02 Profile

UI-03 Edit profile

UI-04 Student’s dashboard

UI-05 Task page (List)

UI-06 Task page (card)

UI-07 Task page (activity)

UI-08 Task detail page

UI-09 Comment and notification

UI-10 report page

UI-11 Print the weekly report by browser