# Use Cases

## Assumptions & Scope Limitations

* The implementation of the project should focus on a desktop version of the web UI
* There will only be one Kanban board supported

## Actors

* User
* Project Manager
* System Administrator

## Use Case Definitions

1. As a User, I want to view the tickets that are assigned to me so that I can stay up to date on my work
2. As a User, I want to update the status of my tickets so that they reflect the work I have done on them
3. As a User, I want to send a notification so that I can alert the Project Manager that I have fully completed a ticket
4. As a User, I want to expand the details of a ticket so that I can view its detailed description and know what I need to implement and test for
5. As a User, I want to input my estimated and actual work hours for a ticket so that the Project Manager can better estimate effort
6. As a User, I want to leave comments on tickets so that I can provide and receive additional information about a ticket
7. As a Project Manager, I want to filter the kanban board by status so that I can view what tickets are in work and complete
8. As a Project Manager, I want to filter the kanban board by user so that I can check what each user is working on
9. As a Project Manager, I want to create new tickets so that I can document work to be completed
10. As a Project Manager, I want to create a new status column so that I can create a new status.
11. As a Project Manager, I want to assign/reassign tickets to users so that I can delegate work
12. As a Project Manager, I want to view a burndown chart so that I can understand how much work is left to be completed
13. As a Project Manager, I want to be able to edit tickets so that I can add or update information about the ticket
14. As a Project Manager, I want to be able to delete tickets so that I can remove outdated or unneeded tickets
15. As a Project Manager, I want to be able to initialize a Kanban Board
16. As a System Administrator, I want to be able to perform system maintenance so that I can keep the system running properly
17. As a System Administrator, I want to be able to manage user accounts so that Project Managers can effectively run their project teams
18. As a System Administrator, I want to be able to archive a board or delete a board so that the system does not become cluttered and disorganized with past or canceled projects
19. As a Project Manager, I want to receive notifications from Users when they complete tickets

# Abuse Cases

Actors

* Nefarious user
* Nefarious attacker

Diagram

Description automatically generated

Clarification of terms for the diagram

“Nefarious User”

Definition – A person who uses his/her account to tamper or add / delete information of ticket on the board.

Resources - His / Her account

Skills - No specific technical skill

Objectives - Nefarious User may want to mess up the project management

“Nefarious Attacker”

Definition – A person who uses web skill

Resources - Nefarious attackers operate on behalf of a group or person that accomplishes some form of harm. They use some technical skill to hijack another user's cookie session, and then steal or tamper with the user's information in order to get benefit.

Skills - Nefarious attackers  have senior web technical skills. They can use the tool to scan the information in other user's computers  and send it to them. They merge knowledge of network agreement, cloud, penetration and cryptography to their attack skill.

Objectives - Nefarious attackers primarily enjoy the attacking process or get benefit by attacking.

Critical Abuse Cases

Name: Session Hijacking

Actors:  Nefarious Attacker

Trigger: Nefarious Attacker has access to the Attacked User’s account

Preconditions: Nefarious attacker hijack cookie session from attacked user’s browser

Postconditions:

Success postconditions: Nefarious attacker fails to gain access to the attacked user’s account

Failure postconditions: Nefarious attacker gets access to attacked user’s account and even  changes password.

Basic Flow:

1. Nefarious attackers try to send malicious files or links to attacked users.

2. Attacked user try to open the files or click the links

3. The login session has expired or there is no login session stored in the browser.

4. Nefarious Attackers give up and end the session.

Exception Flow:

3.a The virus sends out the cookie session back to nefarious attackers.

3.b Nefarious attackers hijack cookie session of attacked user.

3.c Nefarious attackers use the session to get access to the attacked user account.

3.d Nefarious attackers browse user's information or even tamper with it.

Diagram

Description automatically generated

Differently colored dashed lines mark different security scenarios

Green marks the basic flow (scenario)

Red marks an exception flow (scenario)

Security Scenario – Session Hijacking

|  |  |
| --- | --- |
| Source | Nefarious Attacker |
| Stimulus | Try to get some benefit from account hacking |
| Articact | Client browser |
| Environment | Normal operation |
| Response | Logs data change activity |
| Response Measure | Forced the attacker sign out when admin or system receive attacked user report |

Name: Unauthorized Privilege Elevation

Actors: Nefarious User

Trigger: Nefarious User has access to ShiftChange and wishes to gain Project Manager privileges to control projects.

Preconditions: Nefarious User opens ShiftChange

Postconditions:

Success postconditions: Nefarious User fails to gain Project Manager privileges.

Failure postconditions: Nefarious User obtains Project Manager privileges.

Basic Flow:

1. Nefarious User, within ShiftChange, attempts to change their privilege level to that of a Project Manager.
2. ShiftChange asks Nefarious User for authentication
3. Nefarious User chooses a form of authentication
4. ShiftChange rejects the elevation request due to incorrect authentication
5. Nefarious User gives up, closes authentication window

Alternative Flow:

3a. Nefarious User requests elevation from System Administrator

3b. System Administrator rejects request from Nefarious User

Exception Flow:

3a. Nefarious User utilizes credentials obtained from Project Manager

3b. Nefarious User access Project Manager privileges in ShiftChange

Diagram

Description automatically generated

Green marks the basic flow (scenario)

Blue marks an alternate flow (scenario)

Red marks an exception flow (scenario)

Security Scenario – Unauthorized Privilege Elevation

|  |  |
| --- | --- |
| Source | Nefarious User |
| Stimulus | Want to add / delete / modify / browser the upper level information |
| Artifact | Client browser |
| Environment | Normal operation |
| Response | Ask suspicious user for authentication |
| Response Measure | System automatically rejects suspicious authentication first and reports to the admin |

# Quality Attribute Scenarios

Priority Quality Scenarios

SEI Descriptions

|  |  |  |  |
| --- | --- | --- | --- |
| **Highest Priority Quality Scenarios** | **Handle unexpected input** | **Warn users before executing irreversible behaviors** | **Ease of Finding Tickets** |
| **Source** | ShiftChange user | ShiftChange User | ShiftChange User |
| **Stimulus** | Tries to input unexpected text into a ticket field | Attempts to execute an irreversible task | Tries to locate tickets |
| **Artifact** | Ticket | ShiftChange System | Ticket list |
| **Environment** | Normal Operation | Normal Operation | Normal Operation |
| **Response** | Denies use of the unexpected text | Send warning to user for confirmation | Filters tickets |
| **Response Measure** | Error message displays | Warning displays with confirmation button | New list of tickets displayed, sorted by filter query |