Club Personnel Manager

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# Introduction

This document contains the architectural details for “Club Personnel Manager” (referred to henceforth as ‘The Application’).

# High Level Architecture

Section 2.1 denotes the Use Case Descriptions associated with the application, while Section 2.2 denotes the Detailed Activity Diagrams associated with same.

## Use Case Descriptions

Sections 2.1.1 through 2.1.9 outlines the Use Case Descriptions for Figure 1 and Figure 2.

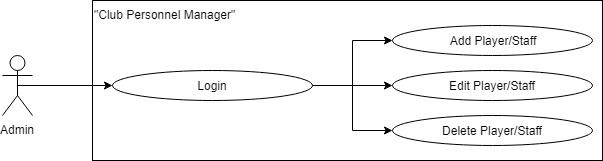


Figure Admin Specific Use Case Diagram

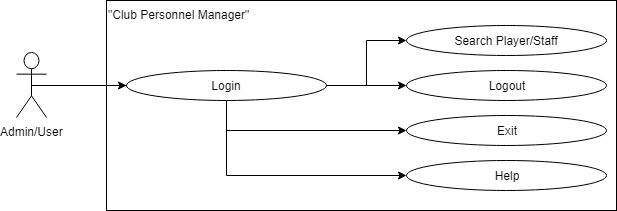


Figure All Users Use Case Diagram

## Login Command

### Figure 1/Figure 2: Log A User In

|  |  |
| --- | --- |
| **Use Case** | Log a user in |
| **Objective** | To log a user in |
| **Pre-Condition** | 1. User CSV file exists 2. No user currently logged in |
| **Main Flow** | 1. Type “login” 2. Enter username when prompted 3. Enter password when prompted 4. Username displayed on input line (i.e. ‘Foo> ’ ) |
| **Alt Flow** | 1. Syntax Error 🡪 Error Displayed |
| **Post Condition** | User logged in |

Table 1: Log a valid user into the application

## Add Command

### Figure 1: Add A Player

|  |  |
| --- | --- |
| **Use Case** | Add a player |
| **Objective** | To add a player to the players csv file |
| **Pre-Condition** | 1. Players CSV file exists 2. User has logged in 3. User has admin privileges |
| **Main Flow** | 1. Type “add [F.]L -p P S”    1. F 🡪 First Name(s) is optional, ‘.’ represents a space (ie. Billy.Bob. 🡪 “Billy Bob)    2. L 🡪 Last name(s) is required, ‘.’ represents a space    3. -p 🡪 denotes a player is being added and is required    4. P 🡪 Position is an enum {G(Goalkeeper),D(Defender),M(Midfielder),F(Forward)} and is required 2. S 🡪 Squad number is an int and is required 3. Console Displays “Player Added” |
| **Alt Flow** | 1. Syntax Error 🡪 Error Displayed |
| **Post Condition** | Player data was added to CSV and saved |

Table 2: Add a player’s details to the player csv

### Figure 1: Add A Staff

|  |  |
| --- | --- |
| **Use Case** | Add a staff |
| **Objective** | To add a staff to the staff csv file |
| **Pre-Condition** | 1. Staff CSV file exists 2. User has logged in 3. User has admin privileges |
| **Main Flow** | 1. Type “add [F.]L -s R”    1. F🡪First Name(s) is optional, ‘.’ represents a space    2. L 🡪 Last name(s) is required, ‘.’ represents a space    3. -s🡪 denote a staff is being added and is required    4. R 🡪 Role is an enum {M(Manager),A(Assistant),C(Coach),S(Scout)} and is required 2. Console Displays “Staff Added”. |
| **Alt Flow** | 1. Syntax Error 🡪 Error Displayed |
| **Post Condition** | Staff data was added to CSV and saved |

Table 3: Add a staff’s details to the staff csv

### Figure 1: Add User

|  |  |
| --- | --- |
| **Use Case** | Add a user |
| **Objective** | To add a user to the user csv file |
| **Pre-Condition** | 1. User CSV file exists 2. User has logged in 3. User has admin privileges |
| **Main Flow** | 1. Type “add user” 2. Enter username when prompted 3. Enter password when prompted 4. Enter t if admin or otherwise f 5. Console Displays “User Added”. |
| **Alt Flow** | 1. Syntax Error 🡪 Error Displayed |
| **Post Condition** | Staff data was added to CSV and saved |

## Edit Command

### Figure 1: Edit A Player

|  |  |
| --- | --- |
| **Use Case** | Edit a player’s details |
| **Objective** | To edit a player’s details |
| **Pre-Condition** | 1. Player CSV file exists 2. User has logged in 3. User has admin privileges |
| **Main Flow** | 1. Type “edit -p I N P S”    1. -p 🡪 denotes a player is being edited and is required    2. I 🡪 ID of the player to edit and is required    3. N 🡪 New name of Player and is optional    4. P 🡪 New position of player and is optional    5. S 🡪 new squad number of player and is optional   *Note: At least one option [N,P,S] must be included in command*   1. Console Displays “Player Edited Successfully”. |
| **Alt Flow** | 1. Syntax Error 🡪 Error Displayed 2. Internal Error 🡪 Error Displayed 3. No Player Found for ID 🡪 Feedback Displayed |
| **Post Condition** | Player data edited and saved |

Table 4: Edit a player’s details

### Figure 1: Edit A Staff

|  |  |
| --- | --- |
| **Use Case** | Edit a Staffs details |
| **Objective** | To edit a Staffs details |
| **Pre-Condition** | 1. Staff CSV file exists 2. User has logged in 3. User has admin privileges |
| **Main Flow** | 1. Type “edit -s I N R”    1. -s 🡪 denotes a staff is being edited and is required    2. I 🡪 ID of the staff to edit and is required    3. N 🡪 New name of staff and is optional    4. R 🡪 New role of staff and is optional   *Note: At least one option [N,R] must be included in command*   1. Console Displays “Staff Edited Successfully”. |
| **Alt Flow** | 1. Syntax Error 🡪 Error Displayed 2. Internal Error 🡪 Error Displayed 3. No Staff Found for ID 🡪 Feedback Displayed |
| **Post Condition** | Staff data edited and saved |

Table 5: Edit a staff’s details

## Delete Command

### Figure 1: Delete A Player

|  |  |
| --- | --- |
| **Use Case** | Delete a player’s details |
| **Objective** | To delete a player’s details |
| **Pre-Condition** | 1. Player CSV file exists 2. User has logged in 3. User has admin privileges |
| **Main Flow** | 1. Type “delete -p I”    1. -p 🡪 denotes a player is being deleted and is required    2. I 🡪 ID of the player to deleted and is required 2. User is asked to confirm deletion of [Players Name]    1. Y 🡪 Deletion occurs, Console Displays “Deletion successful”    2. N 🡪 Deletion aborted, feedback displayed    3. Any other response 🡪 ask for permission again |
| **Alt Flow** | 1. Syntax Error 🡪 Error Displayed 2. Internal Error 🡪 Error Displayed |
| **Post Condition** | Player data deleted |

Table 6: Deletes a player’s details from the player csv

### Figure 1: Delete A Staff

|  |  |
| --- | --- |
| **Use Case** | Delete a staffs details |
| **Objective** | To delete a staffs details |
| **Pre-Condition** | 1. Staff CSV file exists 2. User has logged in 3. User has admin privileges |
| **Main Flow** | 1. Type “delete -s I”    1. -s 🡪 denotes a staff is being deleted and is required    2. I 🡪 ID of the taff to deleted and is required 2. User is asked to confirm deletion of [Staffs Name]    1. Y 🡪 Deletion occurs, Console Displays “Deletion successful”    2. N 🡪 Deletion aborted, feedback displayed    3. Any other response 🡪 ask for permission again |
| **Alt Flow** | 1. Syntax Error 🡪 Error Displayed 2. Internal Error 🡪 Error Displayed |
| **Post Condition** | Staff data deleted |

Table 7: Deletes a staff’s details from the staff csv

## Find Command

### Figure 2: Find Player

|  |  |
| --- | --- |
| **Use Case** | Find a player |
| **Objective** | To find and display players details |
| **Pre-Condition** | 1. Player CSV file exists 2. User has logged in |
| **Main Flow** | 1. Type “find -p N”    1. -p 🡪 denotes a player is being searched and is required    2. N 🡪 name of the player to find and is required 2. Display player(s) that match name |
| **Alt Flow** | 1. Syntax Error 🡪 Error Displayed 2. Internal Error 🡪 Error Displayed 3. No player(s) found for name 🡪 feedback displayed |
| **Post Condition** | Player(s) details displayed |

Table 8: Find a player or players by name

### Figure 2: Find Staff

|  |  |
| --- | --- |
| **Use Case** | Find a staff |
| **Objective** | To find and display staff details |
| **Pre-Condition** | 1. Staff CSV file exists 2. User has logged in |
| **Main Flow** | 1. Type “find -s N”    1. -s 🡪 denotes a staff is being searched and is required    2. N 🡪 name of the player to find and is required 2. Display staff that match name |
| **Alt Flow** | 1. Syntax Error 🡪 Error Displayed 2. Internal Error 🡪 Error Displayed 3. No staff found for name 🡪 feedback displayed |
| **Post Condition** | Staff details displayed |

Table 9: Find staff by name

## Logout Command

### Figure 2: Logout

|  |  |
| --- | --- |
| **Use Case** | To log out |
| **Objective** | To log out the current user |
| **Pre-Condition** | 1. User has logged in |
| **Main Flow** | 1. Type “logout e”    1. e 🡪 Exit, logs user out and closes the application |
| **Alt Flow** | 1. Syntax Error 🡪 Error Displayed 2. User not logged in 🡪 Feedback displayed |
| **Post Condition** | User logged out successfully |

Table 10: Log a user out

## Exit Command

### Figure 2: Exit

|  |  |
| --- | --- |
| **Use Case** | To exit the application |
| **Objective** | The application closes |
| **Pre-Condition** | none |
| **Main Flow** | 1. Type “exit” |
| **Alt Flow** | none |
| **Post Condition** | Application closes |

Table 11: Exit the application

## Help Command

### Figure 2: Help

|  |  |
| --- | --- |
| **Use Case** | Display help |
| **Objective** | Provide user with help with specific commands |
| **Pre-Condition** | none |
| **Main Flow** | 1. Type “help C”    1. C 🡪 Command Name for which help is required, optional   NOTE: not declaring C will result in all available commands being displayed |
| **Alt Flow** | 1. Syntax Error 🡪 Error Displayed |
| **Post Condition** | Help displayed |

Table 12: Display help on commands

## Use Case Summary (Activity Diagram)

The following Activity Diagram summarises the steps involved in each Use Case for the application.

A screenshot of a cell phone

Description automatically generated

Figure Activity Diagram (Use Case Description Summary)

## Detailed Activity Diagram

The Activity Diagrams encountered previously in Section 2.1 simply lists the steps involved in each Use Case from the end user’s perspective. No diagram outlined the processing steps to be carried out as part of each Use Case. Figure 4 denotes the Detailed Activity Diagram for the application. User actions are highlighted in Green while processing carried out by the Client is highlighted in Blue.

A close up of a piece of paper

Description automatically generated

Figure Detailed Activity Diagram

# Additional Information

The application does have data validation. This is out of scope for this assignment. I am not checking for duplicate squad numbers of players or more than 1 manager etc.

The device security is to be assumed to be secure (password protected by the operating system), therefore the files are stored in plaintext (bar the passwords).

# Threat Model

## Trust Boundaries

* User Device – This application is designed to work on one device which is not connected to any network.

## Threat Agents

Possible persons or organisations that could manifest a threat to the application:

* Disgruntled administration users

## Assumptions

* The device used by Users will have industry standard antivirus software that is regularly updated and configured to proactively scan all email attachments.
* Users will be adequately trained in the use of the antivirus software.
* Users will have access to suitable secure storage for backup of the application and data and will be adequately trained in its use.
* All users will receive appropriate cyber security training so that they are aware of the threats of using tools such as email, SMS, internet etc.
* Users will not share their laptops / devices with any other users
* Users will utilise MS Windows security, having password-controlled access to their devices and changing passwords regularly
* Recognised, reputable email service providers will be used in the transfer of data files

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ID | Category | Trust Boundary | Threat Description | Action | Threat Description |
| 1 | Spoofing | User Device | Access the User device, generate a false user csv file, or tamper with the user csv file, in order to gain access to the application. | Mitigate | An attacker would need access to the user device, the password for the device, the username and password for logging into the application. The username is retrievable from the file, but the password is encrypted. |
| 2 | Spoofing | User Device | Attacker Getting Login credentials by Shoulder Surfing | Mitigate | An attacker would have to see which keys are being pressed as the password is masked upon input. |
| 3 | Tampering | User Device | Attacker changes the plaintext results  Player, staff or user csv file(s) on the User device. | Transfer | Operating System security on the club User device and file level security on the plaintext files will mitigate. |
| 4 | Repudiation | User Device | User changes a player, staff or user’s details in a csv file and denies doing it. | Accept | Due to the small number of Users expected to use the app, this threat has been accepted. The time the file was last modified can also be check against which user was logged into the devices operating system at that time. |
| 5 | Information Disclosure | User Device | User discloses all or partial information about player(s), staff(s) or user(s). | Accept | Due to the small number of Users expected to use the app, this threat has been accepted. The time the file was last modified can also be check against which user was logged into the devices operating system at that time. |
| 6 | Denial of Service | User Device | User Device is compromised: i.e. by Malware | Transfer | Managed by Antivirus and Operating System |
| 7 | Elevation of Privilege | User Device | Non-administrator user changes the user file to allow them administration privileges | Accept | Due to the small number of Users expected to use the app, this threat has been accepted. The time the file was last modified can also be check against which user was logged into the devices operating system at that time. |