

Baseball League Registration System Documentation

by

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INFO-C451 System Implementation

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Customer Problem Statement and System Requirements

Problem Statement

Almost all signup programs today involve some kind of electronic signup system to keep track of those who register for an event, and that's exactly what is needed for Innovative Solutions Corporation's Summer Baseball League. A good signup system includes a login, ensuring only those affiliated with the host of the event can get involved. It also enables users to sign up for a position within the event. In this case, each user is allowed to sign up for one position on a baseball team within the league. Finally, it is also helpful to see who has already signed up, especially when each person signing up is given one unique position that, once occupied, cannot be taken. An overview of the teams and available positions will be available for users to view once they pass the login page.

Glossary

- **Username:** A username will be defined by an existing employee username within the company.
 - **Password:** Passwords will be defined by the password assigned to the company employees.
 - **Team-Sign Up:** The user will select the desired position and team. This information will be recorded and entered into the database. If the position and team are full, the user will be notified.
 - **Baseball Teams:** The company will have multiple baseball teams for employees to join.
-

System Requirements

No.	Priority Weight	Description
REQ-1 Signup for the desired team	High	The user will be able to select the team that they would like to join.
REQ-2 Signup for the desired	High	The user will be able to select the team position

position		that they would like to have.
REQ-3 Notify the team if full	High	The system will send a notification if the team is full.
REQ-4 Notify position filled	High	The system will send a notification to the user if the desired position has already been taken.
REQ-5 View Team and Players	High	The system will allow users to view the teams, the players, and their positions.
REQ-6 Login	High	The login will allow only an employee/owner of the company to login to the sign-up system.
REQ-7 Edit	Low	The option of being able to edit team info.

Nonfunctional Requirements

Type	Priority Weight	Description
Functionality	High	Provide accurate data at real-time to ensure users can sign up for positions that are truly available.
Usability	High	Ensure the system is easy to use and that the given information is not hard to

		read. Proper documentation included.
Reliability	High	Ensure the server running the signup system remains stable so signup is always available.
Performance	Medium	Guarantee only needed resources are used to support the signup system.
Supportability	Medium	Release continuous updates that support the scalability of the signup system, allowing it to meet the increased/decreased number of participants/teams in future leagues.

User Interface Requirements

1. Login Page

- **Priority:** High
- **Description:** Screen that displays a big, easy-to-read box where users can enter their username and password to log into the system. The company logo is at the top of the page.
- **Sketch:**

Innovative Solution Corporation
Baseball League Registration

Login

Username

Password

2. Home/Baseball Team Signup Page

- **Priority:** High
- **Description:** Home page split into multiple sections. One section is dedicated to position and team selection/signup; the other is an overview of the current teams and their players.
- **Sketch:**

Innovative Solutions Corp. Tech Tourney Baseball Signup

https://innosol.com/baseball

Innovative Solutions Corp
Annual Baseball Tech Tourney Signup Sheet

First Name

Last Name

Team Selection and desired position

☐ Team 1 ☐ Left Field

☐ Team 2 ☐ Right Field

☐ Team 3 ☐ Center Field

☐ Team 4 ☐ Short Stop

☐ Second Place

☐ Third base

☐ Pitcher

☐ First Base

☐ Catcher

Current Roster

Team One Team Two Team Three Team Four

First Name	Last Name	Position
Rhett	Godwin	Short Stop
Sam	Smith	Pitcher
test	test	test
test	test	test
test	test	test
test	test	test
test	test	test
test	test	test
test	test	test
test	test	test

Plan of Work

Weeks 1- 2: Setup the development environment and become familiar with project requirements. Establish the framework and architecture of the system, construct databases, and wireframe an initial UI design for the page.

Weeks 3-6: Development of the system. Code and implement a login system. Code and implement the Home page. Code and implement the backend.

Weeks 7-8: Test and Deployment: Rigorous testing, debugging and final testing.

Weeks 9-11: Review and improve any implemented features based on customers' feedback.

Functional Requirement Specification

Stakeholders:

- Company CEO
- Company owners
- Company president
- Company managers
- Company employees

Actors and Goals:

Primary:

- Staff, Owners, Managers and Subordinates will be able to login to the Baseball Registration system and sign-up to be a position of a team.

Secondary:

- Admin - Will be able to login to the Baseball Registration system and edit team information. Remove players from the team.
- System - Will give details on available teams and positions, also displaying when a team, or the league itself, is full.

Use Cases:

(2 points indicates one engineer day's workload, like in assignment prompt)

Admin (total: 32)

- Edit team information: Change info about the team, like team name, etc. (4)
- Edit player information: Change info about player, like name, position, etc. (4)
- Remove player: Remove player from a team/the league. (4)
- Login: Login to admin account. (2)
- Logout: Logout of admin account. (2)
- View registered players: Look at players registered for different teams. (2)
- View current teams: Look at teams currently available for signup. (2)
- View team details: Look at details of team, like number of open positions, etc. (4)
- Search for players: Search the system for currently registered players. (4)
- View player details: View details of player, like name, etc. (4)

Staff (Owners, Managers, Subordinates) (total: 28)

- Login: Login to league signup system. (2)
- Logout: Logout of league signup system. (2)
- Sign-up for team: Initiate signup sequence. (2)
- Select position and team: Select the desired position to play, and desired team to play on. (2)
- Drop out: Drop out of team/league. (4)
- Search for players: Search the system for currently registered players. (4)

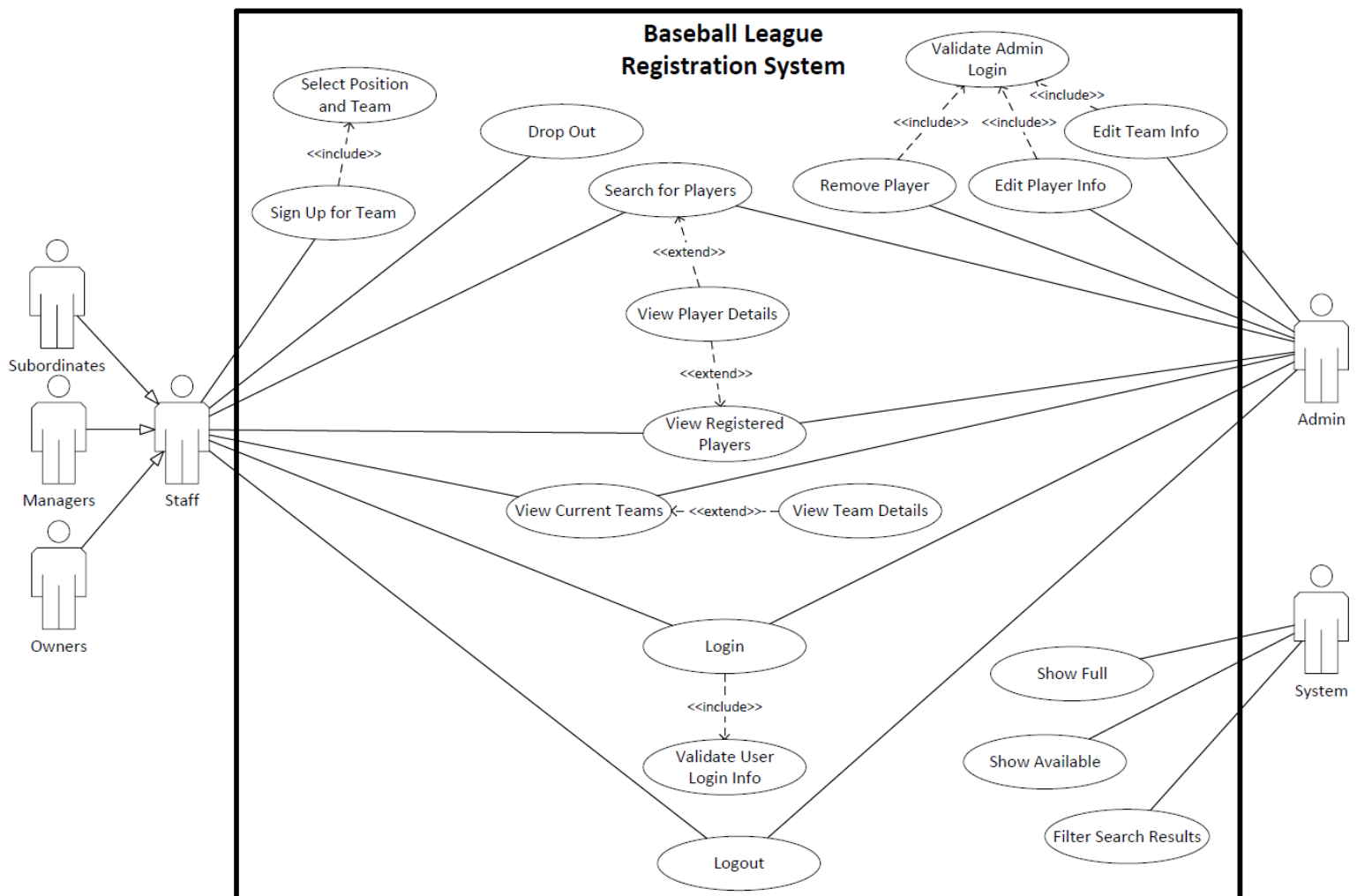
- View player details: View details of player, like name, etc. (4)
- View registered players: Look at players registered for different teams. (2)
- View current teams: Look at teams currently available for signup. (2)
- View team details: Look at details of said team, like number of open positions, etc. (4)

System (total: 10)

- Show full: Show when all teams are full and no open positions remain (4)
- Show available: Show available positions on teams (2)
- Filter search results: Filter database to return search results wanted by user (4)

Use Case Diagram:

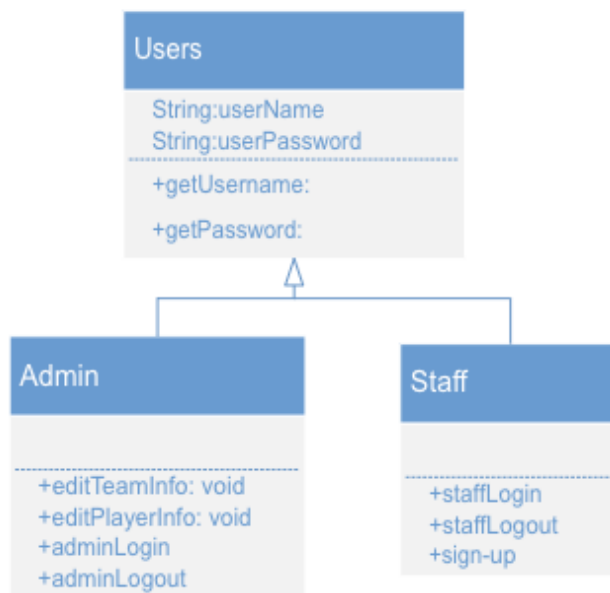
<<extend>> shows what a user can do after a use case if they choose to, while <<include>> shows what absolutely will be done after a use case, regardless of whether the user wants it to be done or not.



Class Diagram:

Users:

Based on the requirements we have two types of users, Admin and Staff. Admin and Staff extends Users. They Inert the Users class



Teams and Players Class

Based on system requirements this is the Team class. The players class is a part of the Team class.



The Class Diagram is below

The relationship between classes consist of:

Composition:

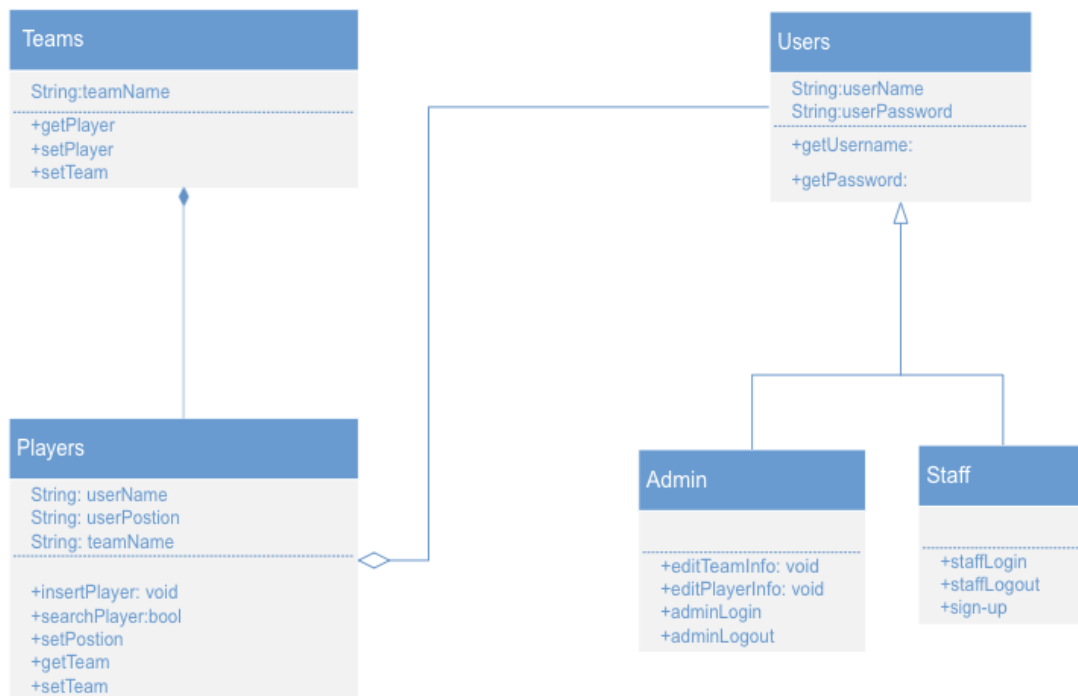
The Team class shares a composition relationship with the Players class. The team is made up of players, and the players cannot exist separately from the team. If a player doesn't have a team to play for, they are just a regular user, not a player.

Aggregation:

The User class shares an aggregation relationship with the Players class. Users can exist outside of Players, however a user is part of the Player class.

Inheritance:

The Staff class and Admin class share an inheritance relationship with the User class. Both Staff and Admin are a type of User.



Sequence Diagrams

Use Case: Sign up

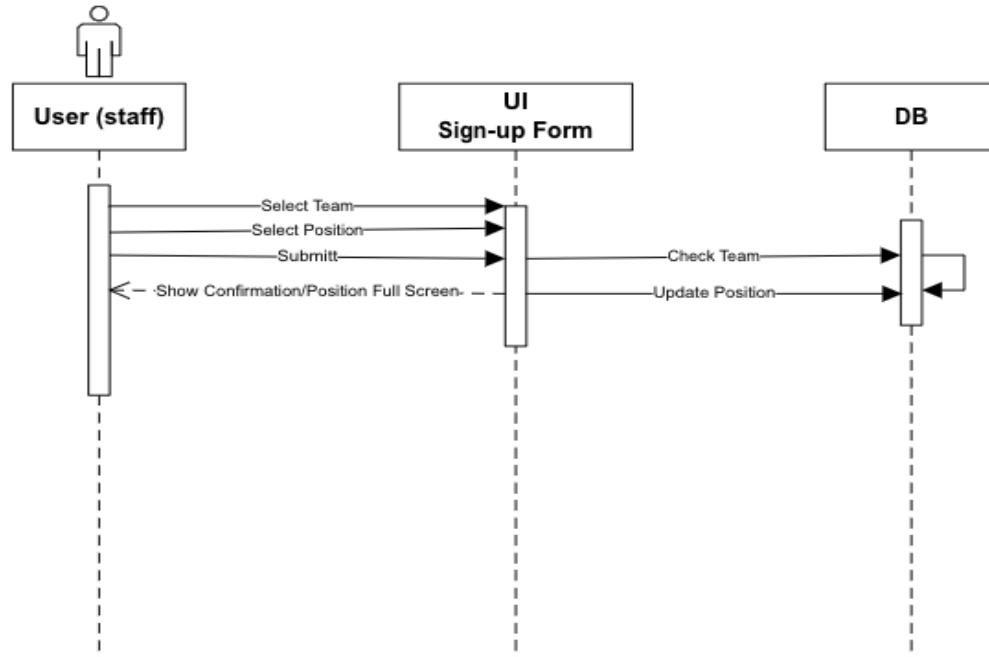
Actor: User (Staff)

Objects: UI Sign-up Form, Database

Steps:

1. User selects the team
2. User selects the position
3. User Submits
4. UI passes data to validate in the Database
5. Upon validation the Database updates
6. UI shows confirmation screen or position full.

Sign-up



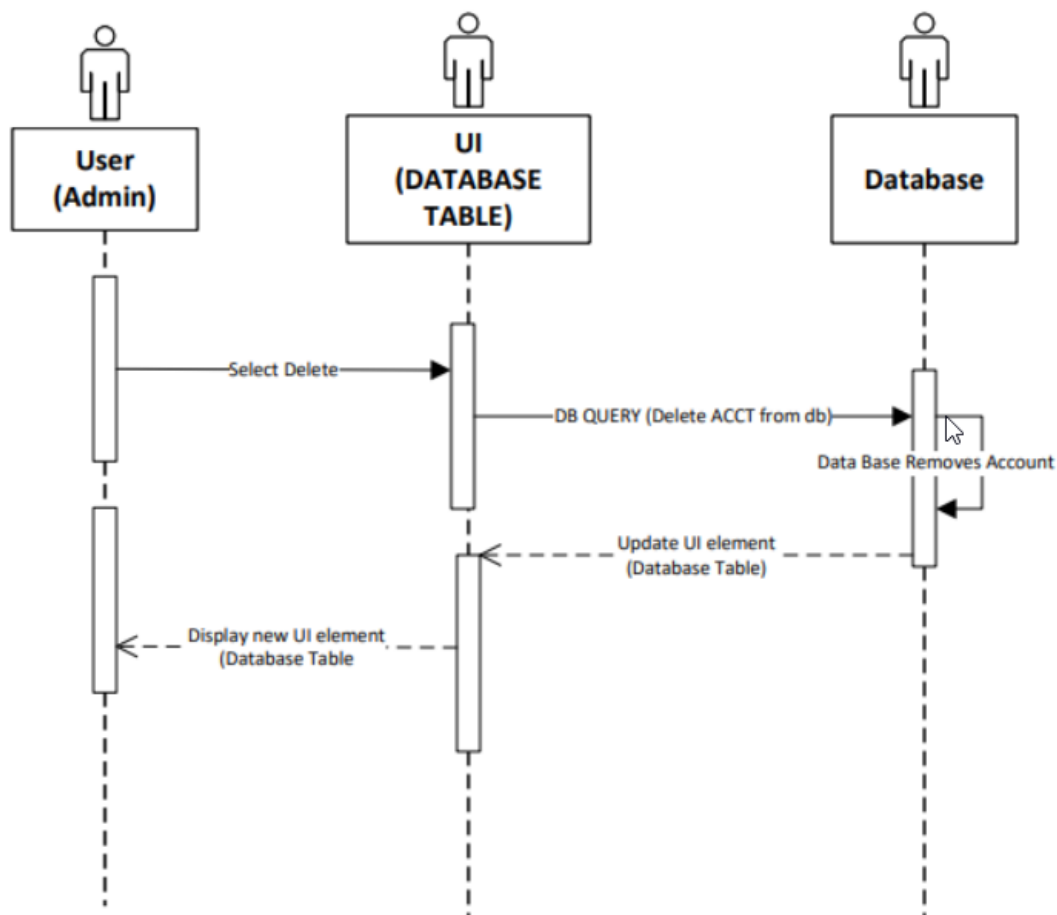
Use Case: Remove Player

Actor: Admin

Objects: UI (Database Table), Database

Steps:

1. User clicks the delete action(link)
2. UI action queries the database to remove account
3. Database Removes the account
4. Updates UI (Database Table)
5. Display new Database Table



Activity Diagrams

Use Case: Login

States

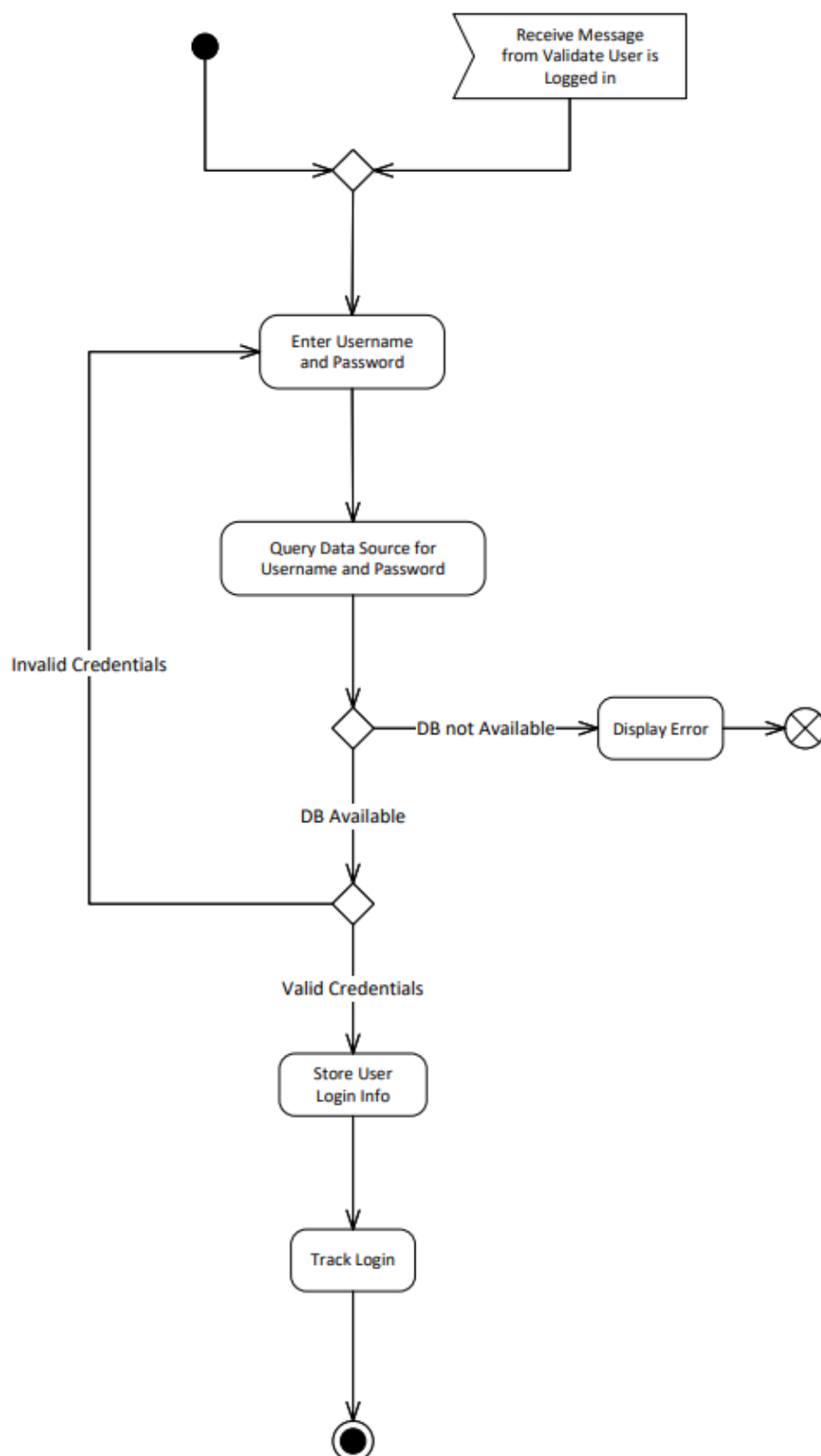
- Initial State: The user begins the login process.
- Final State: 1. The user's credentials are approved by the database and the user is let into the baseball signup system. 2. The user's credentials are denied and the user is not let into the system. 3. Database isn't available and the user can't login.

Actions

The user enters their company given username and password into the login page of the system. The system compares what the user enters with the login information recorded in the database. The system either approves the user's login and lets them into the registration system, or it denies the login and the user isn't let in.

(Diagram on following page)

Log In



Use Case: Sign up

States

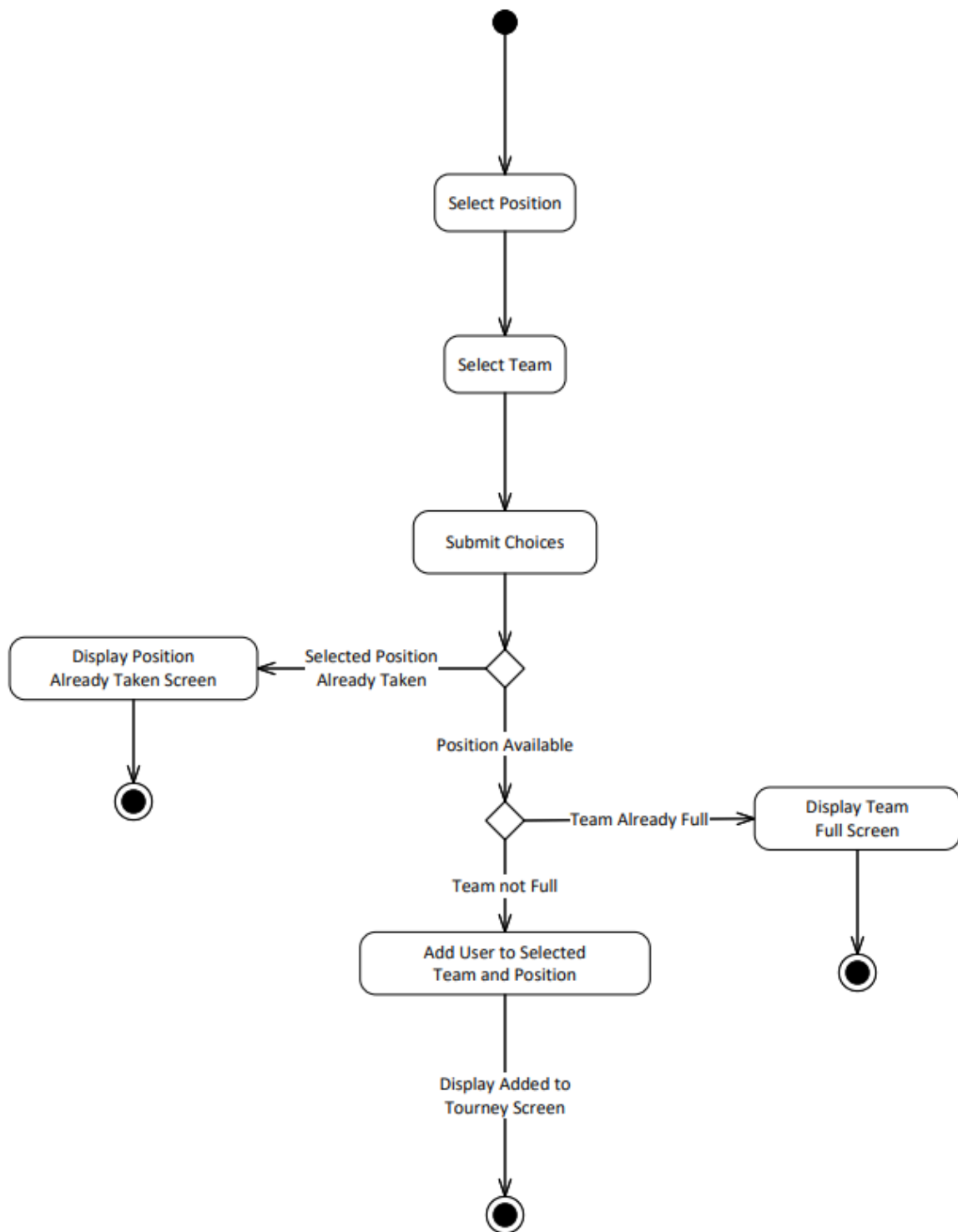
- Initial State: The customer wants to join a team.
- Final State: 1. User submits the desired position and team to the database and is placed on said team in said position. 2. User submits the desired position and team to the database but the position is already taken. 3. User submits the desired position and team to the database but the team is already full.

Actions

The user selects their desired position. The user then selects their desired team. The user clicks the signup button to sign up for the desired position and team they selected. The system approves the selection and sets them in their desired position and team if it is available, or the system declines because the selected position/team is already taken/full.

(Diagram on following page)

Sign Up

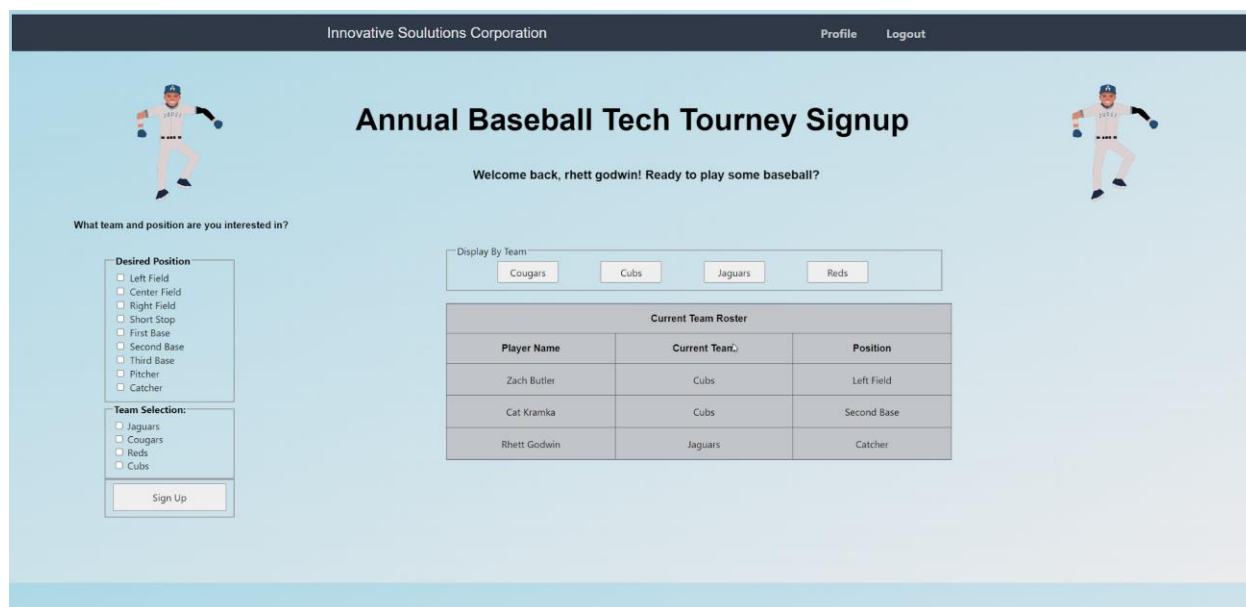


User Interface Specifications

Preliminary Design

Use Case: Sign up

Click Desired Position, Team & Sign Up button



Innovative Solutions Corporation Profile Logout

Annual Baseball Tech Tourney Signup

Welcome back, rhett godwin! Ready to play some baseball?

What team and position are you interested in?

Desired Position

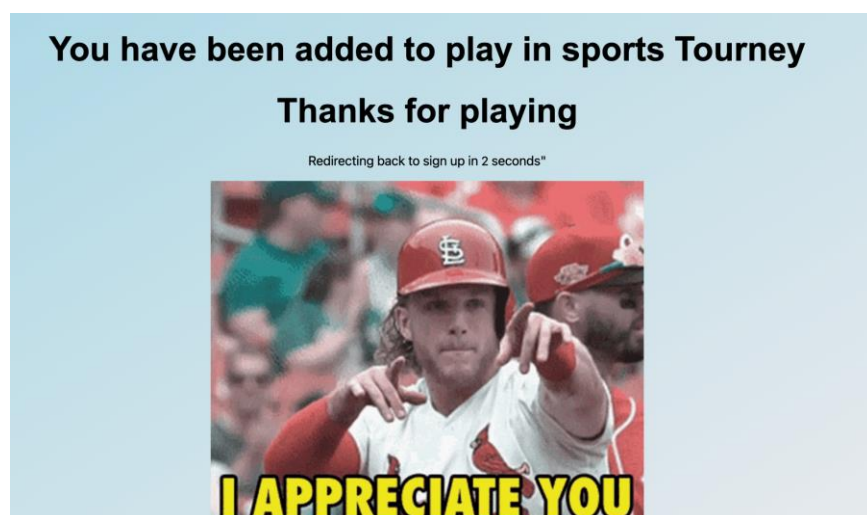
- ☐ Left Field
- ☐ Center Field
- ☐ Right Field
- ☐ Short Stop
- ☐ First Base
- ☐ Second Base
- ☐ Third Base
- ☐ Pitcher
- ☐ Catcher

Team Selection:

- ☐ Jaguars
- ☐ Cougars
- ☐ Reds
- ☐ Cubs

Display By Team:

Current Team Roster		
Player Name	Current Team	Position
Zach Butler	Cubs	Left Field
Cat Kramka	Cubs	Second Base
Rhett Godwin	Jaguars	Catcher



View the confirmation page (see next page)



What team and position are you interested in?

Desired Position

- ☐ Left Field
- ☐ Center Field
- ☐ Right Field
- ☐ Short Stop
- ☐ First Base
- ☐ Second Base
- ☐ Third Base
- ☐ Pitcher
- ☐ Catcher

Team Selection:

- ☐ Jaguars
- ☐ Cougars
- ☐ Reds
- ☐ Cubs

Sign Up

Display By Team

Cougars Cubs Jaguars Reds

Current Team Roster		
Player Name	Current Team	Position
Zach Butler	Cubs	Left Field
Cat Kramka	Cubs	Second Base
Rhett Godwin	Jaguars	Catcher

Auto Return to Sign Up page. User views table with their added name, position and team.

Use Case: Remove Player

Database Admin Page			
Add New Data Logout			
Players/Teams DataBase			
Name	Team	Position	Action
Zach Butler	Cougars	Left Field	Edit Delete
Cat Kramka	Cubs	Second Base	Edit Delete
Rhett Godwin	Cougars	Short Stop	Edit Delete
Rhett godwin	Jaguars	Left Field	Edit Delete
Cat Kramka	Cougars	Third Base	Edit Delete
Cat Kramka	Reds	Left Field	Edit Delete
Employee Accounts Database			
Add New Data			
Name	Password	Email	Action
Rhett Godwin	test	Rhett@test.com	Edit Delete
Zach Butler	test	zach@test.com	Edit Delete
Cat Kramka	test	Cat@test.com	Edit Delete
admin	admin	admin@test.com	Edit Delete

Admin clicks the delete action link



localhost:8888/S/admin.php

Database Admin Page

[Add New Data](#) [Logout](#)

Players/Teams DataBase

Name	Team	Position	Action
Zach Butler	Cougars	Left Field	Edit Delete
Cat Kramka	Cubs	Second Base	Edit Delete
Rhett Godwin	Cougars	Short Stop	Edit Delete
Rhett godwin	Jaguars	Left Field	Edit Delete
Cat Kramka	Cougars	Third Base	Edit Delete
Cat Kramka	Reds	Left Field	Edit Delete

Employee Accounts Database

[Add New Data](#)

Name	Password	Email	Action
Rhett Godwin	test	Rhett@test.com	Edit Delete
Zach Butler	test	zach@test.com	Edit Delete
Cat Kramka	test	Cat@test.com	Edit Delete
admin	admin	admin@test.com	Edit Delete

Database sends a popup window to confirm Admin choice. Admin clicks to confirm or cancel.



Database Admin Page

[Add New Data](#) [Logout](#)

Players/Teams DataBase

Name	Team	Position	Action
Zach Butler	Cougars	Left Field	Edit Delete
Cat Kramka	Cubs	Second Base	Edit Delete
Rhett Godwin	Cougars	Short Stop	Edit Delete
Rhett godwin	Jaguars	Left Field	Edit Delete
Cat Kramka	Cougars	Third Base	Edit Delete

Employee Accounts Database

[Add New Data](#)

Name	Password	Email	Action
Rhett Godwin	test	Rhett@test.com	Edit Delete
Zach Butler	test	zach@test.com	Edit Delete
Cat Kramka	test	Cat@test.com	Edit Delete
admin	admin	admin@test.com	Edit Delete

Admin Page is updated with the player removed.

Use Case: Add New Data

Database Admin Page

[Add New Data](#)
[Logout](#)

Players/Teams DataBase

Name	Team	Position	Action
Zach Butler	Cougars	Left Field	Edit Delete
Cat Kramka	Cubs	Second Base	Edit Delete
Rhett Godwin	Cougars	Short Stop	Edit Delete
Rhett godwin	Jaguars	Left Field	Edit Delete
Cat Kramka	Cougars	Third Base	Edit Delete
Cat Kramka	Reds	Left Field	Edit Delete

Employee Accounts Database

[Add New Data](#)

Name	Password	Email	Action
Rhett Godwin	test	Rhett@test.com	Edit Delete
Zach Butler	test	zach@test.com	Edit Delete
Cat Kramka	test	Cat@test.com	Edit Delete
admin	admin	admin@test.com	Edit Delete

Admin clicks Add New Data link



Add Data

MUST UPDATE ALL FIELDS

[Home](#)

Player Name	<input type="text"/>
Team	<input type="text"/>
Position	<input type="text"/>
	<input type="button" value="Add"/>

Admin enters data into each field and clicks add.



Data added successfully!

[View Result](#)

Confirmation page is shown and admin clicks View Result.




Database Admin Page			
Add New Data Logout			
Players/Teams DataBase			
Name	Team	Position	Action
Zach Butler	Cougars	Left Field	Edit Delete
Cat Kramka	Cubs	Second Base	Edit Delete
Rhett Godwin	Cougars	Short Stop	Edit Delete
Rhett godwin	Jaguars	Left Field	Edit Delete
Cat Kramka	Cougars	Third Base	Edit Delete
Cat Kramka	Reds	Short Stop	Edit Delete
Employee Accounts Database			
Add New Data			
Name	Password	Email	Action
Rhett Godwin	test	Rhett@test.com	Edit Delete
Zach Butler	test	zach@test.com	Edit Delete
Cat Kramka	test	Cat@test.com	Edit Delete
admin	admin	admin@test.com	Edit Delete

Navigates back to Admin Page, with updated table.

Use Case: Display Teams

Innovative Solutions Corporation
Profile
Logout



Annual Baseball Tech Tourney Signup

Welcome back, rhett godwin! Ready to play some baseball?

What team and position are you interested in?

Desired Position

- ☐ Left Field
- ☐ Center Field
- ☐ Right Field
- ☐ Short Stop
- ☐ First Base
- ☐ Second Base
- ☐ Third Base
- ☐ Pitcher
- ☐ Catcher

Team Selection:

- ☐ Jaguars
- ☐ Cougars
- ☐ Reds
- ☐ Cubs

Sign Up

Display By Team

Cougars
Cubs
Jaguars
Reds

Current Team Roster		
Player Name	Current Team	Position
Zach Butler	Cubs	Left Field
Cat Kramka	Cubs	Second Base
Rhett Godwin	Jaguars	Catcher

User clicks on the team button.




Current Team Roster		
Player Name	Current Team	Position
Zach Butler	Cougars	Left Field
Rhett Godwin	Cougars	Short Stop
Cat Kramka	Cougars	Third Base

Current Team Roster Window opens.

Use Case: View Player Details

Innovative Souolutions Corporation
Profile
Logout



Annual Baseball Tech Tourney Signup

ach butler! Ready to play some baseball?

What team and position are you interested in?

Desired Position

- ☐ Left Field
- ☐ Center Field
- ☐ Right Field
- ☐ Short Stop
- ☐ First Base
- ☐ Second Base
- ☐ Third Base
- ☐ Pitcher
- ☐ Catcher

Team Selection:

- ☐ Jaguars
- ☐ Cougars
- ☐ Reds
- ☐ Cubs

Sign Up

Display By Team

Cougars Cubs Jaguars Reds

Current Team Roster		
Player Name	Current Team	Position
Zach Butler	Cougars	Left Field
Cat Kramka	Cubs	Second Base
Rhett Godwin	Cougars	Short Stop
Rhett godwin	Jaguars	Left Field
zach butler	Reds	Short Stop

User clicks on the profile button at the top right of the page.



Innovative Souolutions Corporation
Profile
Logout

Profile Page

Your account details are below:

Username:	zach butler
Email:	zach@test.com

[Return Home](#)

Profile/player details page opens.

User Effort Estimation

Usage Scenario	Navigation	Clicks	Keystrokes
User signs-up for a position	Sign-up page, Confirmation page	3	0
Remove Player	Admin Page	2	0
Add New Data	Admin Page, Add Data Fields Page, Confirmation page	3	0-100
View Teams	Sign-up page, Team Roster page	1	0
View Player Details	Profile Page	1	0

Additional Information

All of the screens shown above are accessible to the user after they have already logged in. The screen below is what a user who is not yet logged in would see. When the user enters their username and password and hits submit, the data will be verified with the database and then the user will be able to see the sign-up welcome page.

Innovative Solutions Corporation Employee Login

Login

Login

New Employee? Click here

Project Plan

Weeks 1- 2: Setup the development environment and become familiar with project requirements. Establish the framework and architecture of the system, construct databases, and wireframe an initial UI design for the page.

(COMPLETE)

Weeks 3-6: Development of the system. Code and implement a login system. Code and implement the Home page. Code and implement the backend.**(COMPLETE)**

Weeks 7-8: Test and Deployment: Rigorous testing, debugging and final testing.
(COMPLETE)

Weeks 9-11: Review and improve any implemented features based on customers' feedback. **(IN PROGRESS)**