

Sri Lanka Institute of Information Technology



Information Technology Project (IT2080)
Year 2, Semester 2, 2025

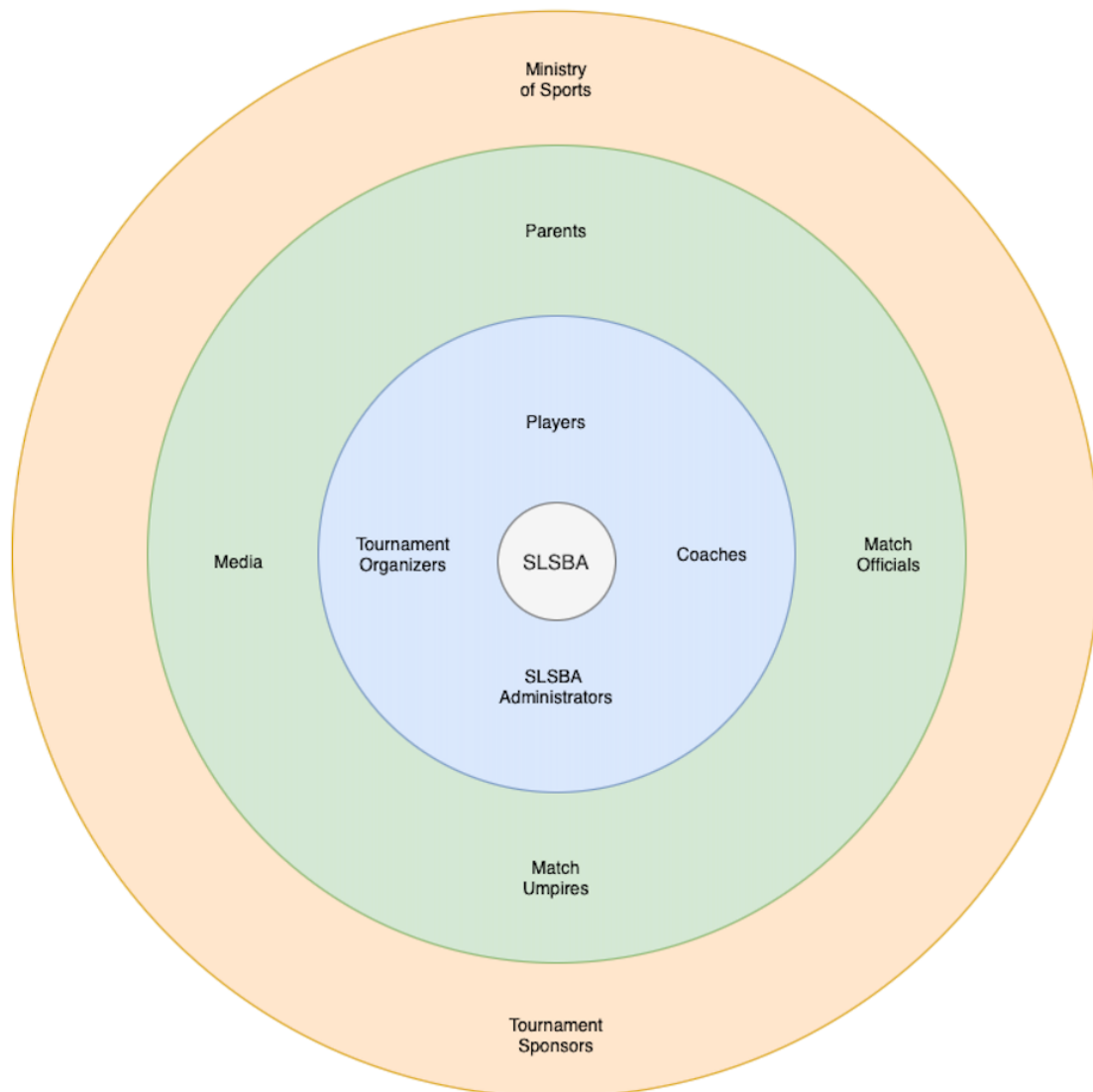
Activity 2 - Requirements Engineering Activity

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1. Onion Diagram Representation

Identifying the stakeholders of the slsba system using an onion diagram



2. Functional Requirements

Functional Requirements of the direct system users.

Players, Coaches

- Register to the tournaments
- View match schedules and updates
- Track records and performances

Tournament Organizers

- Create, Update, Delete tournaments records
- Schedule matches and update max fixture reports
- Assign referees to the matches

SLSBA Administrators

- Approve tournament registration
- Manage system users
- Handle financial transactions

3.Non-Functional Requirements

These are non-functional Requirements of the system user wise.

1. Performance

- The system should handle multiple users without slowdowns.
- Page loading time should be fast (under 3 seconds).

2. Security

- User login must be secure (encrypted passwords, HTTPS).
- Only authorized users can access or modify sensitive data.

3. Usability

- The interface should be easy to use and work on all devices (mobile, tablet, desktop).
- Users should be able to register and navigate easily.

4. Availability

- The system should be accessible 24/7 with minimal downtime.
- Data should be backed up to prevent loss.

4. Technical Requirements

These are the technical requirements of the system will be used for the development process of the system.

Frontend - React.js for a responsive UI

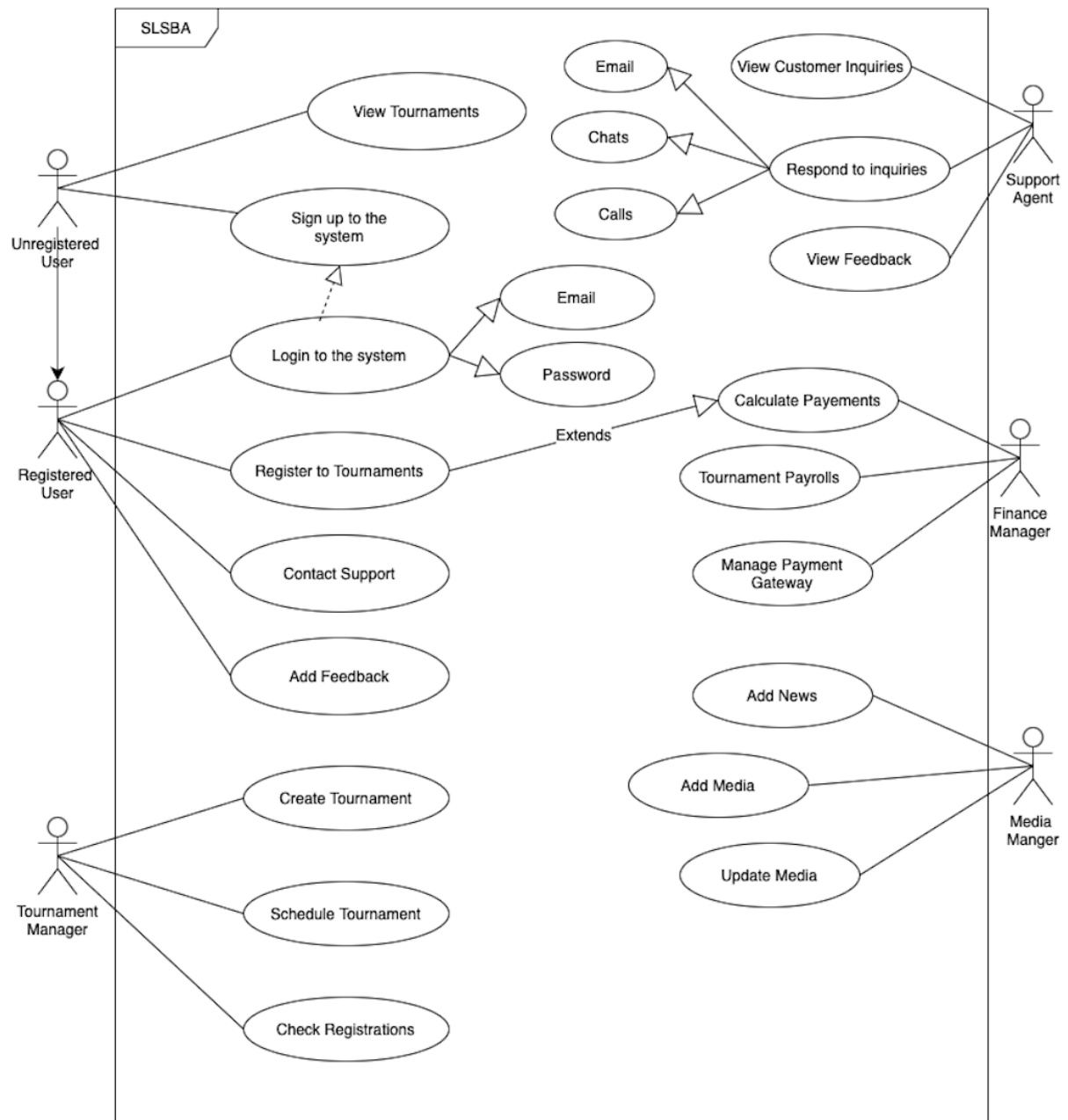
Backend - Node.js with Express.js for API services.

Database - MongoDB for dynamic data.

APIs: Google Maps API for venue locations, Firebase Cloud Messaging for notifications.

5. Use Case Diagram

This is the use case diagram representing the requirements of the system.



6.Use Case Stories

Tournament Registration

Number	1	
Name	Team Registration	
Summary	Team registering to the tournaments	
Priority	1	
Preconditions	User login to the SLSBA Web	
Postconditions	Payment complete and generate registration report	
Primary actor	User	
Secondary actor	Tournament Manager	
Trigger		
Main scenario	Step	Action
	1	User sign up or sign in to the web using his credentials
	2	Users navigate to the tournament section of the web
	3	Selects the tournament for registration
	4	Navigates to the Tournament registration page
	5	Select the tournament and fills the form
	6	Upload the payment slip or Online payment
	7	Click register button in the end
	8	Submit the registration information
	9	Download the registration pdf
	10	User will receive an email after tournament management confirms it.
Extensions	Step	Branching Action
	1a	If user enters invalid details, user must re-enter the login details to register to the tournaments

	<i>5a</i>	Form required information must pass the validation to process with registration process (schoolD)
	<i>6a</i>	Payment slip must be under 5mb and after the process of checking it must be a valid receipt
	<i>10a</i>	After the checking process of tournament manager user will receive an email confirming the registration

Respond to Queries

Number	2	
Name	Respond to Queries	
Summary	The support agent reviews queries and responds	
Priority	5	
Preconditions	Support agent login to the SLSBA Web	
Postconditions	The customer receives a response, and the query status is updated	
Primary actor	Support Agent	
Secondary actor	None	
Trigger	A new customer query is submitted, or an existing unresolved query is selected by the support agent.	
Main scenario	Step	Action
	1	Support Agent logs into the system.
	2	Support Agent navigates to the "Customer Support Dashboard."
	3	Support Agent selects a pending customer query.
	4	The system retrieves and displays query details.
	5	Support Agent reviews the query and decides on the best response method
	6	Support Agent types or speaks the response and submits it through the system
	7	The system logs the response and updates the query status to "In Progress" or "Resolved."
	8	If the issue is resolved, the system sends a request for customer feedback.
	9	Support Agent moves to the next query.
Extensions	Step	Branching Action
	3a	If no queries are available, the system notifies the Support Agent and returns to the dashboard.

	<i>5a</i>	If additional information is needed, the Support Agent requests more details from the customer.
	<i>7a</i>	If the issue cannot be resolved, the Support Agent escalates the query to a senior agent or technical team.

Financial Payroll

Number	3	
Name	Tournament Staff Payroll System	
Summary	The admin manages staff payroll system, payment submissions and generate invoice	
Priority	2	
Preconditions	Admin log in to the system	
Postconditions	Salaries for all officials are correctly calculated, processed and disbursed	
Primary actor	Financial Admin	
Secondary actor	Staff members	
Trigger	A staff member is registered in the system for a specific tournament	
Main scenario	Step	Branching Action
	1	Admin log in to the system using their credentials.
	2	Admin navigates to the staff member's dashboard.
	3	The system matter officials to their respective events and assigns their roles.
	4	Enter the salary details.
	5	Calculate the salary details.
	6	Observe salary details.
	7	Payment processing.
	8	The System generate an invoice.

	9	The invoice to generate is sent to the staff members.
	10	Generate financial reports for all staff members.
<i>Extensions</i>	<i>Step</i>	<i>Branching Action</i>
	<i>1a</i>	If the admin enters invalid credentials, display an error message and re-enter their credentials.
	4a	If any details missing, display an error message.
	5a	If the calculation fails, notify the entered details are not valid.
	6a	If the admin finds any issue, it is corrected properly.
	7a	If the submission fails, notify the admin

Player Enrollment in Training

Number	4	
Name	Player Enrollment in training	
Summary	Players register for available training sessions.	
Priority	2	
Precondition	Player log into the system.	
Postcondition	The player is successfully enrolled in a session.	
Primary actor	Player	
Secondary actor	Coach	
Trigger		
Main scenario	Step	Action
	1	Player logs into the system.
	2	Player navigates to available training session.
	3	Select a session to enroll in.
	4	System checks seat availability.
	5	If available, player confirms enrollment.
	6	System updates player's enrollment status.
	7	Player receives a confirmation notification.
Extensions	Step	Branching Action
	1a	If login fails, prompt user to retry.
	4a	If the session is full, display a waitlist option.
	6a	If enrollment fails, notify admin.

Training Session Management

Number	5	
Name	Training session management	
Summary	Admin/coach creates, edits or deletes training sessions	
Priority		
Precondition	Admin/coach logs into system.	
Postcondition	Training session is successfully updated in the system.	
Primary actor	Admin, Coach	
Secondary actor	Player	
Trigger		
Main scenario	Step	Action
	1	Admin/coach logs into the system.
	2	Admin/coach navigates to the training session dashboard.
	3	Select “create New Session” or choose an existing one to edit/delete.
	4	Enter session details.
	5	Assign a coach and set participant limits.
	6	Save or updates the session.
	7	The system notifies players about the session update.
Extensions	Step	Branching Action
	1a	If login fails, display an error message.
	4a	If details are missing prompt the user to fill them
	6a	If scheduling conflicts exist, prompt for resolution.
	7a	If notification fails, logs the error for admin review

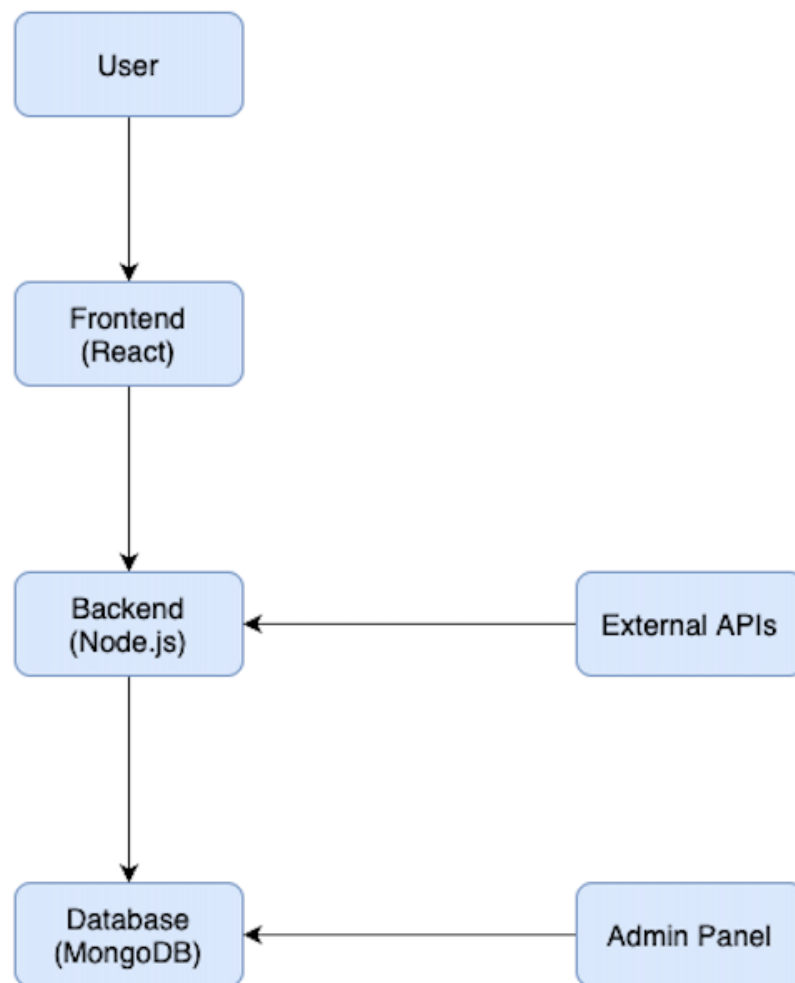
News Posting Management

Number	6	
Name	Post News Articles	
Summary	The admin or editor creates and publishes a news article related to badminton tournaments, training programs, or general updates.	
Priority	1	
Preconditions	Admin or Editor must be logged in	
Postconditions	The news article is published and visible to users.	
Primary actor	Media Admin	
Secondary actor	Users	
Trigger	The admin/editor clicks on "Create News" and fills in the required fields.	
Main scenario	Step	Action
	1	The user logs in as an Admin/Editor.
	2	The user navigates to the "News & Media" section.
	3	The user clicks on "Create News".
	4	The user enters the Title, Content, Images, and Category .
	5	The user selects "Publish" to make it live.
	6	If the user selects "Save as Draft", the article remains unpublished until further action.
Extensions	Step	Branching Action
	1a	If user enters invalid details, user must re-enter the login details to register to the tournaments
	4a	If there are missing required fields, an error message prompts the user to complete them.

7.Data Flow Diagram

This is visual representation of data flow of the system

System Data Flow Diagram (DFD)



8. Development Plan

1. **Project Panning**

- What project are we going to work on?
- What problem does it solve?
- Set clear project goals and deadlines

2. **Requirement Gathering**

- Identify the functional and non- functional requirements
- Identify the stakeholders of the systems and their requirements

3. **System Design**

- Decide the technologies that are going to use
(programming language, frontend technologies, backend technologies, database)
- Create database schema and system architecture
- Design user interfaces

4. **Implementation**

- Break the project into Small Task
- Assign roles and responsibilities
- Set deadlines to each task
- Implement frontend, backend, database and security measures

5. **Testing**

- Test individual modules and overall system (unit and integration testing)

6. **monitoring and maintenance**

- get feedback from the team and client
- fix the issues and feature requests
- monitor the performance