

# Project Plan – Module B: Group Creation & Discovery

## Module Description

This module enables users to:

- Create and manage study groups.
- Associate groups with courses.
- Set privacy (public/private).
- Search and filter groups based on criteria (course, size, activity).
- View group member lists and join/leave groups.

## 1. Functional Overview

Feature	Description
Create Group	User creates a new study group with name, course, description, and privacy setting.
Search & Filter Groups	Allows users to search groups by course name, size, or activity.
Join/Request Group	Instantly join public groups or request access to private ones.
Group Member List	Displays all members with roles (Admin, Member).

## 2. UML Diagrams

### a) Use Case Diagram

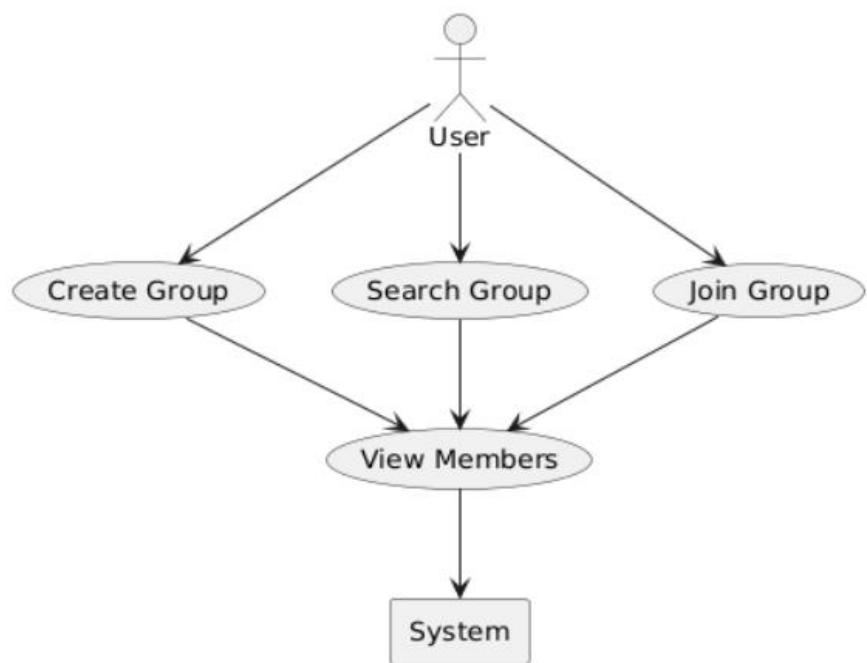
#### Actors:

- User
- System

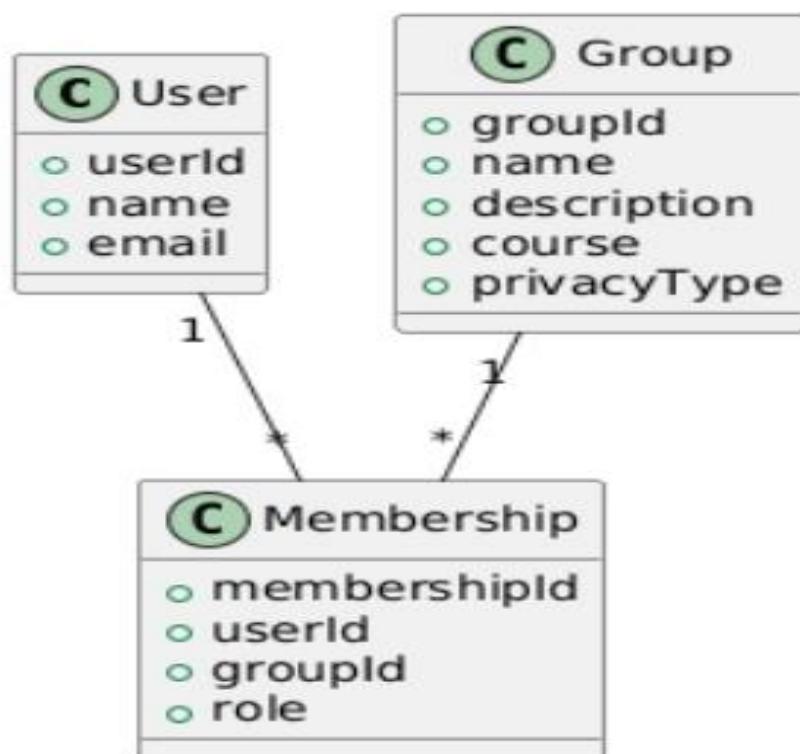
### **Use Cases:**

1. Create Group
2. Search Group
3. Filter Groups
4. Join Group / Request Join
5. View Group Members

### **Diagram:**



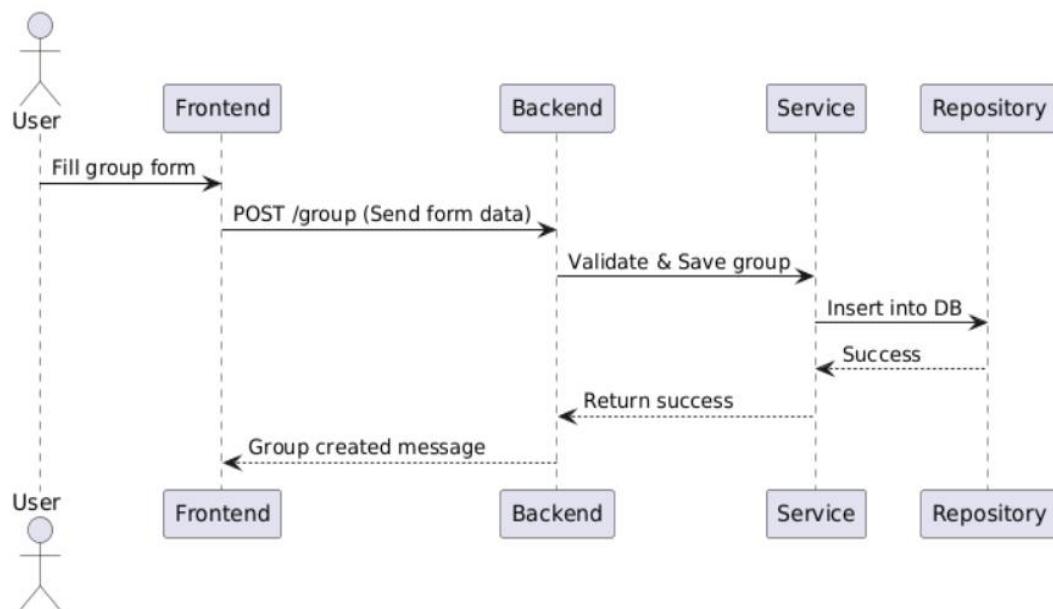
b) Class Diagram



**Relations:**

User 1---\* Membership \*---1 Group

### c) Sequence Diagram (for Group Creation)



### 3. Time Estimation (2 Weeks – 10 Working Days)

Phase	Tasks	Duration	Responsible
<b>1. Requirement Analysis</b>	Finalize UI & API structure	1 day	All Members
<b>2. Database Design</b>	Tables: Group, Membership	1 day	Backend Dev 1
<b>3. API Development</b>	CRUD APIs for groups & filters	3 days	Backend Dev 1 & 2
<b>4. UI Development</b>	Create Group Form, Search UI	3 days	Frontend Dev 1 & 2
<b>5. Integration &amp; Debug</b>	Connect Frontend–Backend	1 day	All Members
<b>6. Documentation</b>	API docs, UML, Setup Guide	1 day	

Total Time: **10 days (2 weeks)**

#### 4. Team & Task Breakdown

Role	Member	Responsibilities
Frontend	Mahita	Group Creation Form (React) + Validation + API Integration
Frontend	Rahul	Search & Filter UI + Group List + Join Button
Backend	Vamsidhar	GroupController + GroupService + JWT Validation
Backend	Santosh	GroupRepository + SQL Queries + Filter Logic + Membership Table

#### 5. Database Schema

Table	Key Fields	Description
users	user_id, name, email	Registered users
groups	group_id, name, description, course, privacy_type	Group metadata
memberships	membership_id, user_id, group_id, role	Links users to groups

#### 6. Deliverables (End of Week 4)

Deliverable	Description
Working “Create Group” Form	Frontend + backend integration complete
Group Search & Filter	Fully functional UI and API
Join/Request Feature	Operational join logic
UML Documentation	Use case, class, and sequence diagrams
Updated README.md	Setup, API endpoints, team roles

## 7. Tools & Technologies

Category	Tools Used
Frontend	React.js, Axios, Bootstrap / Material UI
Backend	Spring Boot, JPA, MySQL
Auth	JWT Token
Version Control	Git
Collaboration	GitHub Projects