

# LinkedIn Design: Class Diagram & Code

Special class

# LinkedIn Design

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# Introduction

1. **Platform Overview:** LinkedIn is an employment-oriented social networking platform designed for managing professional identities and facilitating career development.
2. **Key Functions:**
  1. Enables professional networking and career growth.
  2. Allows users to find and connect with trusted professionals.
  3. Employers can post job listings, and job seekers can post resumes.
3. **User Profiles and Interaction:**
  1. Users can create detailed profiles showcasing education, experience, skills, achievements, and endorsements.
  2. Interactive features include posting content, commenting, sending direct messages, and forming groups.
4. **Personalised Experience:**
  1. Generates a personalised feed based on users' connections, job history, educational background, group memberships, and content interactions.



# LinkedIn Platform Requirements Overview

This document delineates the essential requirements for the LinkedIn platform, ensuring a clear guideline for functionalities aimed at enhancing professional networking and career development.

1. **Profile Customization:** Users can enrich their profiles with educational background, work experiences, achievements, and skills, offering a comprehensive professional summary.
2. **Search and Exploration:** Users have the capability to search for and view other users' profiles, pages, and groups, fostering networking and community engagement.
3. **Connection Management:** Users can send, cancel, accept, or ignore connection requests, enabling them to curate their professional network.
4. **Following Users:** The platform allows users to follow others without needing to connect, expanding their access to diverse professional insights and updates.
5. **Insights and Analytics:** Users can view analytics related to their connections, profile views, post impressions, and search appearances, offering valuable feedback on their professional visibility.
6. **Recommendations:** Users can request and provide professional recommendations, enhancing the credibility and value of their professional network.
7. **Content Creation:** Users have the ability to create and share new posts, contributing to the professional discourse within their network.
8. **Engagement with Content:** Users can interact with posts through reactions, shares, and comments, and also engage with comments on posts, fostering a vibrant professional community.
9. **Messaging:** Direct communication is facilitated through messaging, allowing users to send and receive messages with other professionals.
10. **Notifications:** The system will notify users about new messages, connection requests, and interactions with their content, keeping them informed and engaged.
11. **Company Pages:** Users can create pages for companies and follow other company pages, connecting them with corporate entities and professional opportunities.
12. **Job Listings:** Company pages can feature job openings, enabling users to explore and apply for career opportunities.
13. **Groups:** Users have the option to create and join professional groups, encouraging the exchange of ideas and networking within specific interest areas or industries.



# Use-case Diagram

1. System: LinkedIn

2. Actors

1. Primary

## **1. User**

1. Create a profile with professional information.
2. Generate content through posts.
3. Apply for job opportunities.
4. Follow relevant pages and join groups for networking.
5. Engage with other users by sending connection invitations, messaging, and commenting on posts.

## **2. Admin**

1. Blocking or unblocking users.
2. Enabling or disabling pages.
3. Deleting existing groups.
4. Overseeing various other operational tasks.

# Use-case Diagram

## 1. Secondary Actors

### 1. **System**

1. Sends notifications for new connection requests.
2. Alerts users to incoming messages.
3. Notifies about comments on posts.
4. Provides updates on posts.
5. Delivers recommendations and other alerts.



# Use-cases of User

1. Add/Update Profile: Add details like education, experience, skills, and achievements or update an existing profile.
2. Follow/Unfollow User: Follow or unfollow other users.
3. Send Message: Send messages to other users.
4. Send Connection Invitation: Send a connection request to other users.
5. Accept/Ignore Connection Invitation: Accept or ignore connection requests from other users.
6. Create/Follow/Unfollow Page: Create a new page or update, delete, follow, or unfollow an existing page.
7. Create/Join/Leave Group: Create a new group, or join or leave an existing group.
8. Add/Share Post: Add a new post or share an existing one.
9. Update/Delete/React to Post: Update, delete, or react to a post.
10. Comment on Post/Comment: Comment on a post or on an existing comment.
11. Update/Delete/React to Comment: Update, delete, or react to a comment.
12. Search Users/Groups/Pages/Jobs: Search for users, groups, pages, or job listings.
13. Post a Job: Post job listings on the page.
14. View Analytics: View analytics such as the number of connections, post impressions, profile views, and search appearances.
15. Request Recommendation: Send a recommendation request to other users.
16. Accept Recommendation: Accept a recommendation request from another user.
17. Delete Recommendation: Delete a recommendation request from another user.

# Use-cases of Admin

1. Block/Unblock User: Block or unblock a user.
2. Enable/Disable Page: Enable or disable a page.
3. Delete Group: Remove an existing group.



# Use-cases of System

1. New Post Notification: Send notifications when new posts are published.
2. New Comment Notification: Notify users when another user comments on their posts or comments.
3. Connection Invitation Notification: Alert users to new connection invitations.
4. Message Notification: Inform users of new messages.
5. Recommendation Notification: Notify users when a recommendation is requested.
6. Add Recommendation: Add recommendation to the profile.

# Relationships: Generalisation

-In this section, we outline the connections and interactions between actors and their respective use cases.

1. The user has the ability to add or update their profile by incorporating changes to their education, experience, skills, or achievements.
2. This indicates that the "Add/Update Profile" use case is a generalisation of the "Add/Update Education," "Add/Update Experience," "Add/Update Skill," and "Add/Update Achievement" use cases.



# Relationships: Associations

User	Admin	System
Add/update profile	Block/unblock user	New post notification
Follow/unfollow user	Enable/disable page	New comment notification
Send message	Delete group	Connection invitation notification
Send connection invitation		Message notification
Accept/ignore connection invitation		Recommendation notification
Create/follow/unfollow page		Add recommendation
Create/join/leave a group		
Add/share post		
Update/delete/react post		
Comment on post/comment		
Update/delete/react comment		
Search users/groups/pages/jobs		
Post a job		
View analytics		
Request recommendation		
Accept recommendation		
Delete recommendation		

# Relationships: Include

- A. The "Send message" use case includes the "Message notification" use case because users are notified whenever they receive a message.
- B. The "Send connection invitation" use case includes the "Connection invitation notification" use case, as the system notifies users upon receiving a connection invitation.
- C. The "Accept recommendation" use case includes the "Add recommendation" use case because when a user accepts a recommendation request, the system automatically adds that recommendation to the user's profile.
- D. The "Add/share post" use case includes the "New post notification" use case; whenever a user creates or shares a post, the system notifies connected users.
- E. The "Comment on post/comment" use case includes the "New comment notification" use case, which triggers a notification to the user whenever a new comment is made on their post or a followed post.
- F. The "Request recommendation" use case includes the "Recommendation notification" use case, alerting users whenever they receive a recommendation request.



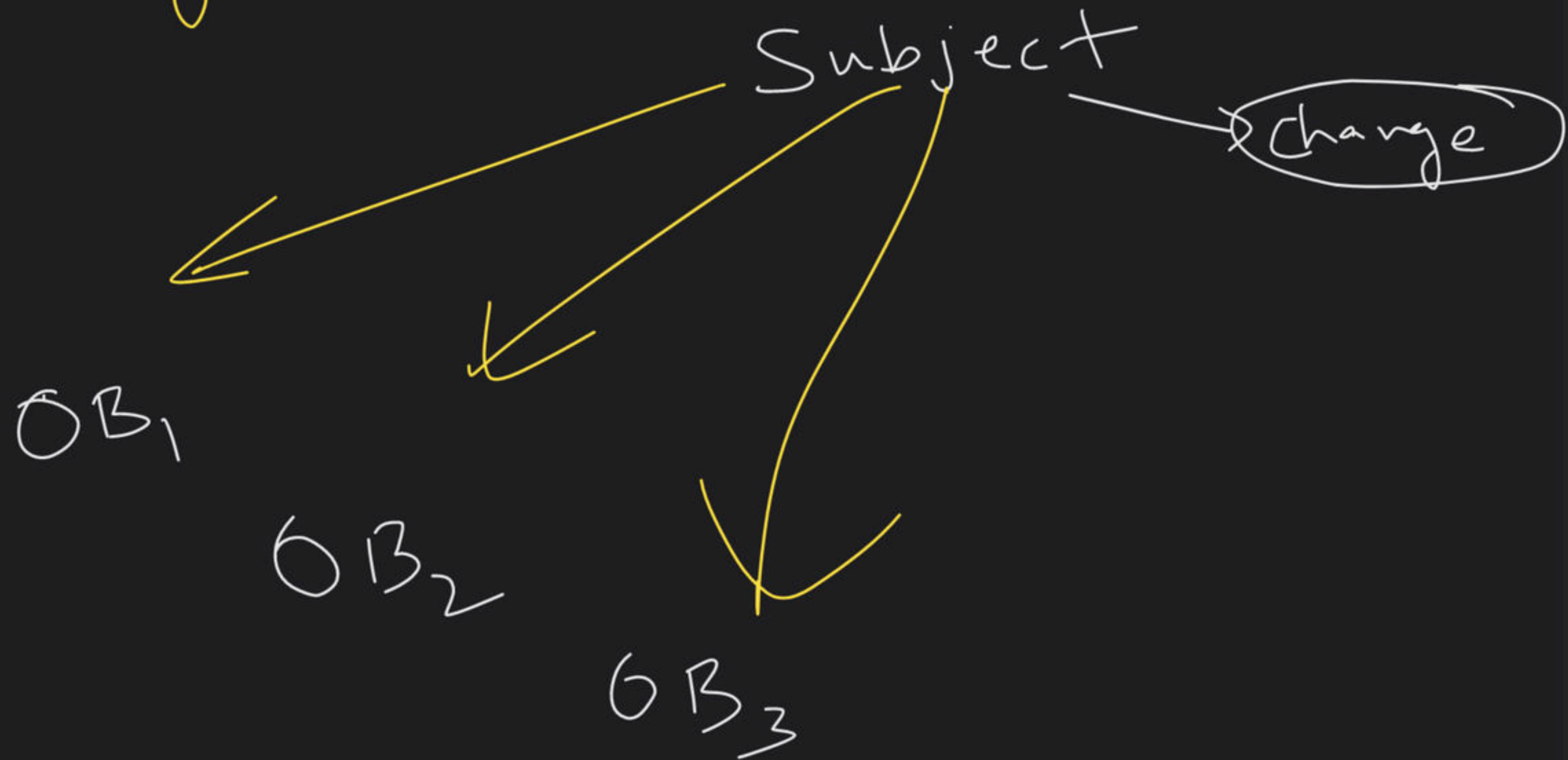
# Relationships: Extend

- When users receive a recommendation request, they have the option to either accept or delete it. As a result, the "Request recommendation" use case extends both the "Accept recommendation" and "Delete recommendation" use cases.
- When users receive a connection invitation, they can choose to either accept or ignore it. Thus, the "Send connection invitation" use case extends the "Accept/ignore connection invitation" use case.

# Final UCD



# Class Diagram [Observer Pattern]



① LinkedIn user  $\xrightarrow{\text{Join}}$  Group

② Group Posts something  $\rightarrow$  get Notifica

↓  
Page

Group  
List < User >



<<Observer>>

<<Subject>>

User

Group

Pages

