

# 202509 - Software Development Basic - Assignment 1

## TeacherShare (Basic Version)

### App Description

A streamlined platform where teachers can easily upload, organize, and share educational resources with colleagues

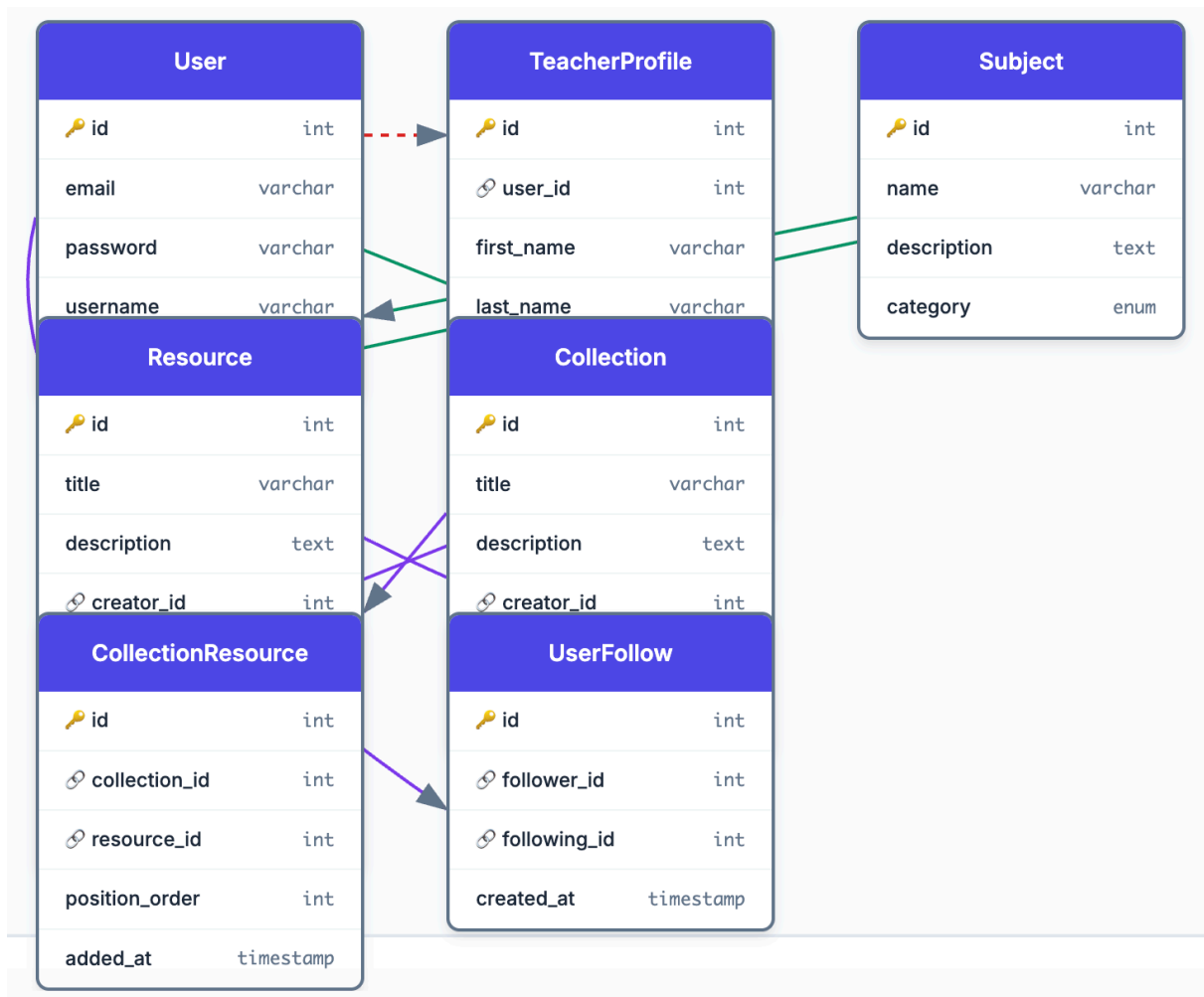
### Core Features:

- Teachers create profiles showcasing their experience and school
- Upload lesson plans, worksheets, and activities by subject and grade level
- Organize resources into themed collections (e.g., "5th Grade Math Unit")
- Follow favorite teachers to see their latest uploads
- Browse and download resources shared by the community
- Simple search by subject, grade level, or teacher

### Target User:

Teachers looking for a simple way to share and discover quality educational materials without the complexity of social media platforms.

### Models and their properties



#### Legend

1:1 Relationship (dashed red)

1:M Relationship (solid green)

M:N Relationship (solid purple)

Primary Key

Foreign Key

## Naming of the relations

### User-TeacherProfile is a 1:1 relationship

- A **User** **hasOne** teacher profile
- A **TeacherProfile** **belongsTo** a user

### User-Resource is a 1:M relationship

- A **User** **hasMany** resources (as creator)

- A **Resource** **belongsTo** a creator (user)

#### **Subject-Resource is a 1:M relationship**

- A **Subject** **hasMany** resources
- A **Resource** **belongsTo** a subject

#### **User-Collection is a 1:M relationship**

- A **User** **hasMany** collections (as creator)
- A **Collection** **belongsTo** a creator (user)

#### **Collection-Resource is a M:N relationship**

- A **Collection** **belongsToMany** resources (through collection\_resources)
- A **Resource** **belongsToMany** collections (through collection\_resources)

#### **User-User is a M:N relationship (Following)**

- A **User** **belongsToMany** following users (through user\_follows as follower\_id)
- A **User** **belongsToMany** follower users (through user\_follows as following\_id)

## **TeacherHub (Advanced Version)**

### **App Description**

A comprehensive professional platform that combines resource sharing, career development, and community building specifically for educators - a LinkedIn for Teachers

### **Core Features:**

- **Professional Profiles:** Detailed teacher profiles with school affiliations, subject expertise, and experience tracking
- **Smart Resource Management:** Upload resources with detailed metadata, ratings, and peer reviews

- **Collection System:** Create and collaborate on resource collections with other teachers
- **Teacher Lounge:** Discussion forums where teachers ask questions, share advice, and solve problems together
- **Career Marketplace:** Job posting board where schools can post positions and teachers can apply
- **Social Learning:** Follow teachers, rate resources, comment on materials, and build professional networks
- **Expertise Tracking:** System tracks which subjects teachers specialize in and their proficiency levels

### **Target User:**

Professional educators seeking career growth, resource sharing, networking opportunities, and community support in one integrated platform.

### **Models and their properties**



#### Legend

1:1 Relationship (dashed red)

1:M Relationship (solid green)

M:N Relationship (solid purple)

Primary Key

Foreign Key

## Naming of the relations

### User-TeacherProfile is a 1:1 relationship

- A **User** **hasOne** teacher profile
- A **TeacherProfile** **belongsTo** a user

### School-TeacherProfile is a 1:M relationship

- A **School** **hasMany** teacher profiles
- A **TeacherProfile** **belongsTo** a school

### User-Resource is a 1:M relationship

- A **User** **hasMany** resources (as creator)
- A **Resource** **belongsTo** a creator (user)

### Subject-Resource is a 1:M relationship

- A **Subject** **hasMany** resources
- A **Resource** **belongsTo** a subject

### User-Collection is a 1:M relationship

- A **User** **hasMany** collections (as creator)
- A **Collection** **belongsTo** a creator (user)

### Subject-Collection is a 1:M relationship

- A **Subject** **hasMany** collections
- A **Collection** **belongsTo** a subject

### Collection-Resource is a M:N relationship

- A **Collection** **belongsToMany** resources (through collection\_resources)
- A **Resource** **belongsToMany** collections (through collection\_resources)

### User-Subject is a M:N relationship (Teaching Expertise)

- A **User** **belongsToMany** subjects (through teacher\_subjects)
- A **Subject** **belongsToMany** users (through teacher\_subjects)

### User-User is a M:N relationship (Following)

- A **User** **belongsToMany** following users (through user\_follows as follower\_id)
- A **User** **belongsToMany** follower users (through user\_follows as following\_id)

### Resource-ResourceRating is a 1:M relationship

- A **Resource** **hasMany** resource ratings

- A `ResourceRating` **belongsTo** a resource

#### **User-ResourceRating is a 1:M relationship**

- A `User` **hasMany** resource ratings (as reviewer)
- A `ResourceRating` **belongsTo** a user (reviewer)

#### **Resource-ResourceComment is a 1:M relationship**

- A `Resource` **hasMany** resource comments
- A `ResourceComment` **belongsTo** a resource

#### **User-ResourceComment is a 1:M relationship**

- A `User` **hasMany** resource comments (as commenter)
- A `ResourceComment` **belongsTo** a user (commenter)

#### **ResourceComment-ResourceComment is a 1:M relationship (Self-referencing)**

- A `ResourceComment` **hasMany** child comments (as parent)
- A `ResourceComment` **belongsTo** a parent comment

#### **User-TeacherLoungeTopics is a 1:M relationship**

- A `User` **hasMany** teacher lounge topics (as creator)
- A `TeacherLoungeTopics` **belongsTo** a creator (user)

#### **Subject-TeacherLoungeTopics is a 1:M relationship**

- A `Subject` **hasMany** teacher lounge topics
- A `TeacherLoungeTopics` **belongsTo** a subject

#### **TeacherLoungeTopics-TeacherLoungeReplies is a 1:M relationship**

- A `TeacherLoungeTopics` **hasMany** teacher lounge replies
- A `TeacherLoungeReplies` **belongsTo** a teacher lounge topic

#### **User-TeacherLoungeReplies is a 1:M relationship**

- A `User` **hasMany** teacher lounge replies (as author)
- A `TeacherLoungeReplies` **belongsTo** an author (user)

#### **TeacherLoungeReplies-TeacherLoungeReplies is a 1:M relationship (Self-referencing)**

- A `TeacherLoungeReplies` **hasMany** child replies (as parent)
- A `TeacherLoungeReplies` **belongsTo** a parent reply

#### **User-TeacherLoungeTopics is a M:N relationship (Voting)**

- A `User` **belongsToMany** teacher lounge topics (through `teacher_lounge_votes`)
- A `TeacherLoungeTopics` **belongsToMany** users (through `teacher_lounge_votes`)

#### **User-TeacherLoungeReplies is a M:N relationship (Voting)**

- A `User` **belongsToMany** teacher lounge replies (through `lounge_reply_votes`)
- A `TeacherLoungeReplies` **belongsToMany** users (through `lounge_reply_votes`)

#### **School-JobPosting is a 1:M relationship**

- A `School` **hasMany** job postings
- A `JobPosting` **belongsTo** a school

#### **User-JobPosting is a 1:M relationship**

- A `User` **hasMany** job postings (as poster)
- A `JobPosting` **belongsTo** a poster (user)

#### **Subject-JobPosting is a 1:M relationship**

- A `Subject` **hasMany** job postings
- A `JobPosting` **belongsTo** a subject

#### **JobPosting-JobApplication is a 1:M relationship**

- A `JobPosting` **hasMany** job applications
- A `JobApplication` **belongsTo** a job posting

#### **User-JobApplication is a 1:M relationship**

- A `User` **hasMany** job applications (as applicant)
- A `JobApplication` **belongsTo** an applicant (user)

#### **User-JobPosting is a M:N relationship (Applications)**

- A `User` **belongsToMany** job postings (through `job_applications`)
- A `JobPosting` **belongsToMany** users (through `job_applications`)