



TRƯỜNG ĐẠI HỌC FPT

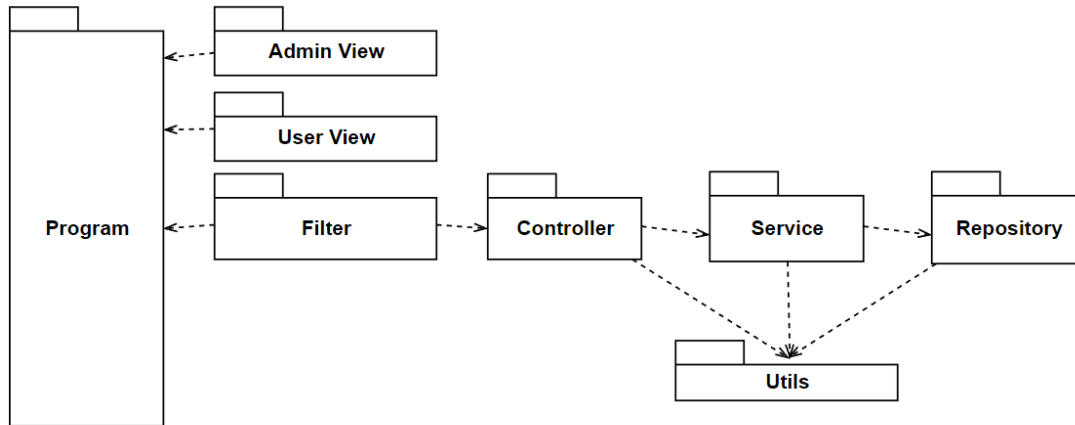
FPT BLOG PROJECT

Software Design Document

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I. Overview

1. Code Packages/Namespace



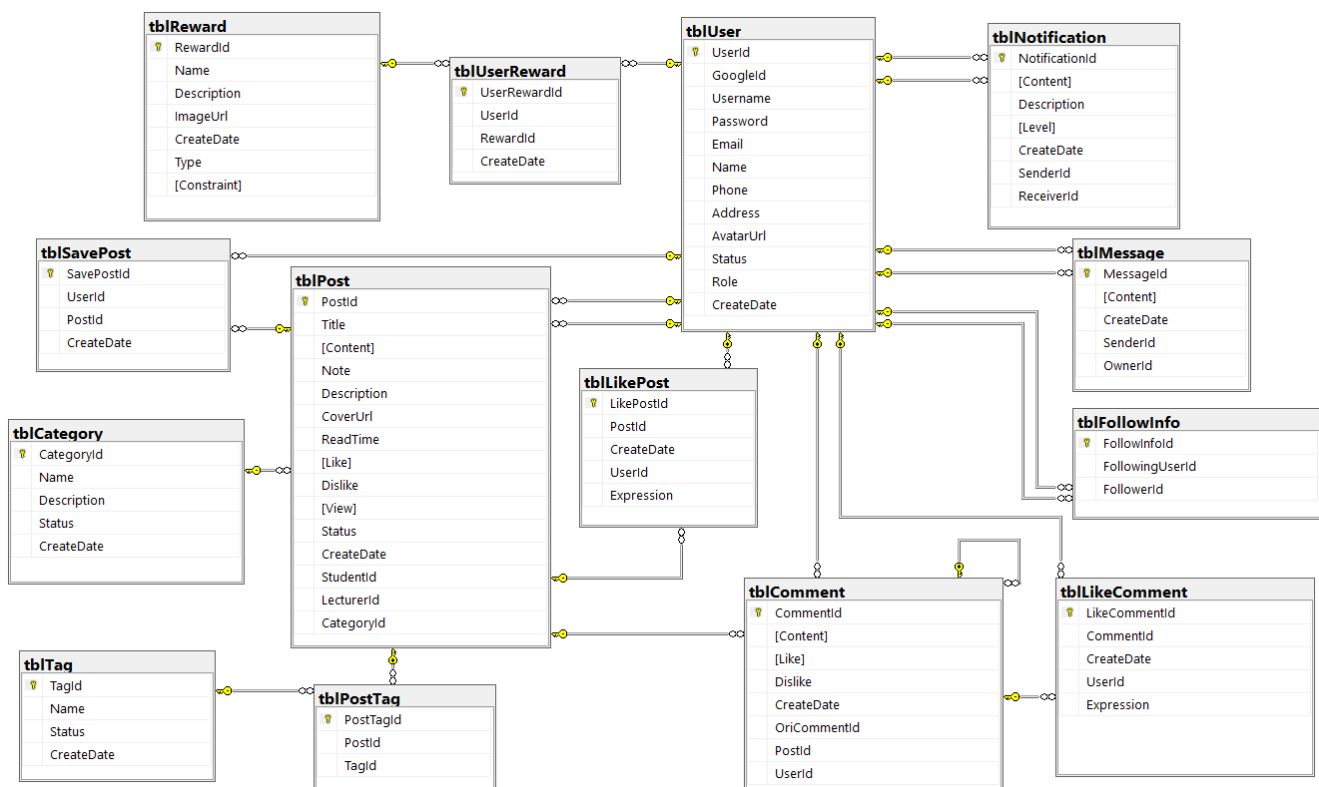
1.1 Server Architecture Diagram

Package descriptions & package class naming conventions

| No | Package | Description |
|----|------------|--|
| 01 | Admin View | This package contains razor files to provide for administrator controllers to render pages NameAdminView.cshtml |
| 02 | User view | This package contains razor files to provide for user controllers to render pages NameUserView.cshtml |
| 03 | Filter | This package contains class to authenticate and authorize user or validate data before forward the request to controller layer NameGuard.cs NameValidator.cs |
| 04 | Utils | This package contains classes to support other layers to do their job such as translating error messages, getting server configuration, or validation schema. |
| 05 | Service | This package contains classes to support controller layer by fetching data from repository layer NameService.cs |
| 06 | Repository | This package contains classes to support service by fetching data from database NameRepository.cs |

| | | |
|----|------------|--|
| 07 | Controller | This package contains classes to provide service to the user by combining many functions from service layer and view layer to render page NameController.cs |
|----|------------|--|

2. Database Schema



II.2 Relational diagram

Table descriptions & package class naming conventions are as below

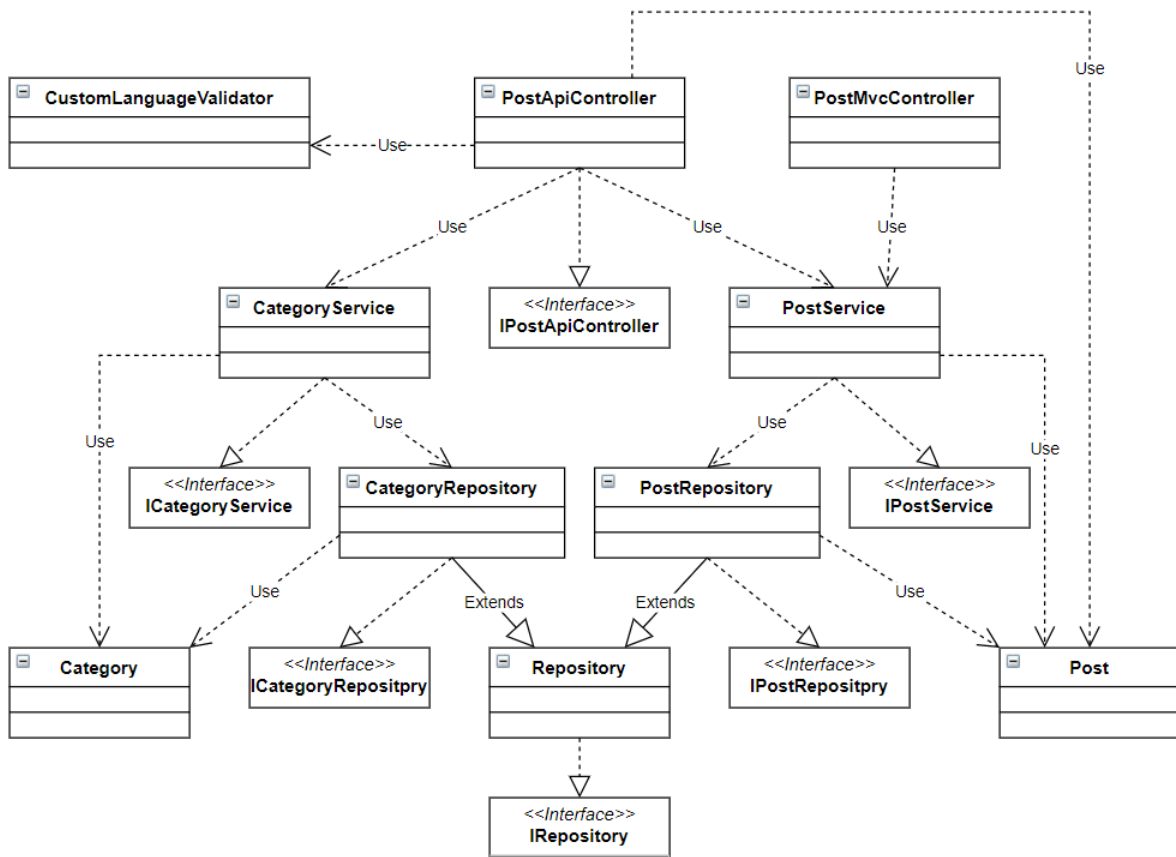
| No | Table | Description |
|----|-----------------|---|
| 01 | tblUser | Contains the user's information - Primary keys: UserId |
| 02 | tblReward | Contains the reward's information - Primary keys: RewardId |
| 03 | tblUserReward | Contains information about who the reward belongs to - Primary keys: UserRewardId - Foreign keys: [RewardId, UserId] |
| 04 | tblNotification | Contains information about who send the notification and who receive it - Primary keys: NotificationId - Foreign keys: [SenderId, ReceiverId] |
| 05 | tblMessage | Contains information about who send the message and who own it |

| | | |
|----|----------------|--|
| | | <ul style="list-style-type: none"> - Primary keys: MessageId - Foreign keys: [SenderId, OwnerId] |
| 06 | tblFollowInfo | Contains information about the follower and the following <ul style="list-style-type: none"> - Primary keys: FollowInfoId - Foreign keys: [FollowingUserId, Follower] |
| 07 | tblComment | Contains the comment's information, and the parent of the comment <ul style="list-style-type: none"> - Primary keys: CommentId - Foreign keys: [OriCommentId] |
| 08 | tblLikeComment | Contains information about who like the comment <ul style="list-style-type: none"> - Primary keys: LikeCommentId - Foreign keys: [UserId, CommentId] |
| 09 | tblPost | Contains the post's information, who create it, who approved it, and the category that it belongs to <ul style="list-style-type: none"> - Primary keys: PostId - Foreign keys: [StudentId, LecturerId, CategoryId] |
| 10 | tblLikePost | Contains information about who like the post <ul style="list-style-type: none"> - Primary keys: LikePostId - Foreign keys: [UserId, PostId] |
| 11 | tblSavePost | Contains information about who save the post <ul style="list-style-type: none"> - Primary keys: SavePostId - Foreign keys: [UserId, PostId] |
| 12 | tblCategory | Contains the category's information <ul style="list-style-type: none"> - Primary keys: CategoryId |
| 13 | tblTag | Contains the tag's information <ul style="list-style-type: none"> - Primary keys: TagId |
| 14 | tblPostTag | Contains information about which post the tag belongs to <ul style="list-style-type: none"> - Primary keys: PostTagId - Foreign keys: [TagId, PostId] |

II. Code Designs

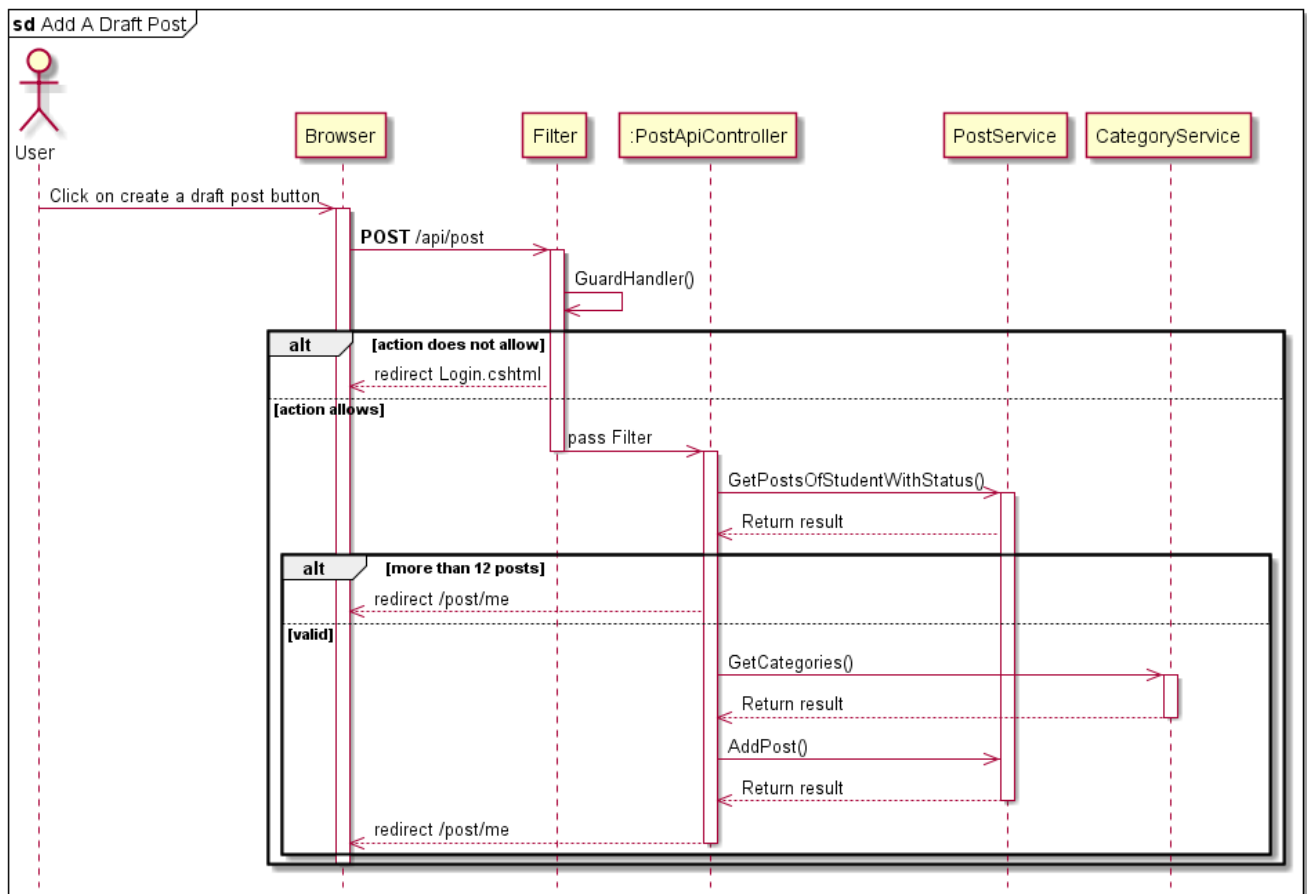
1. Student create a draft post

a. Class Diagram



II.1 Class diagram student create a draft post

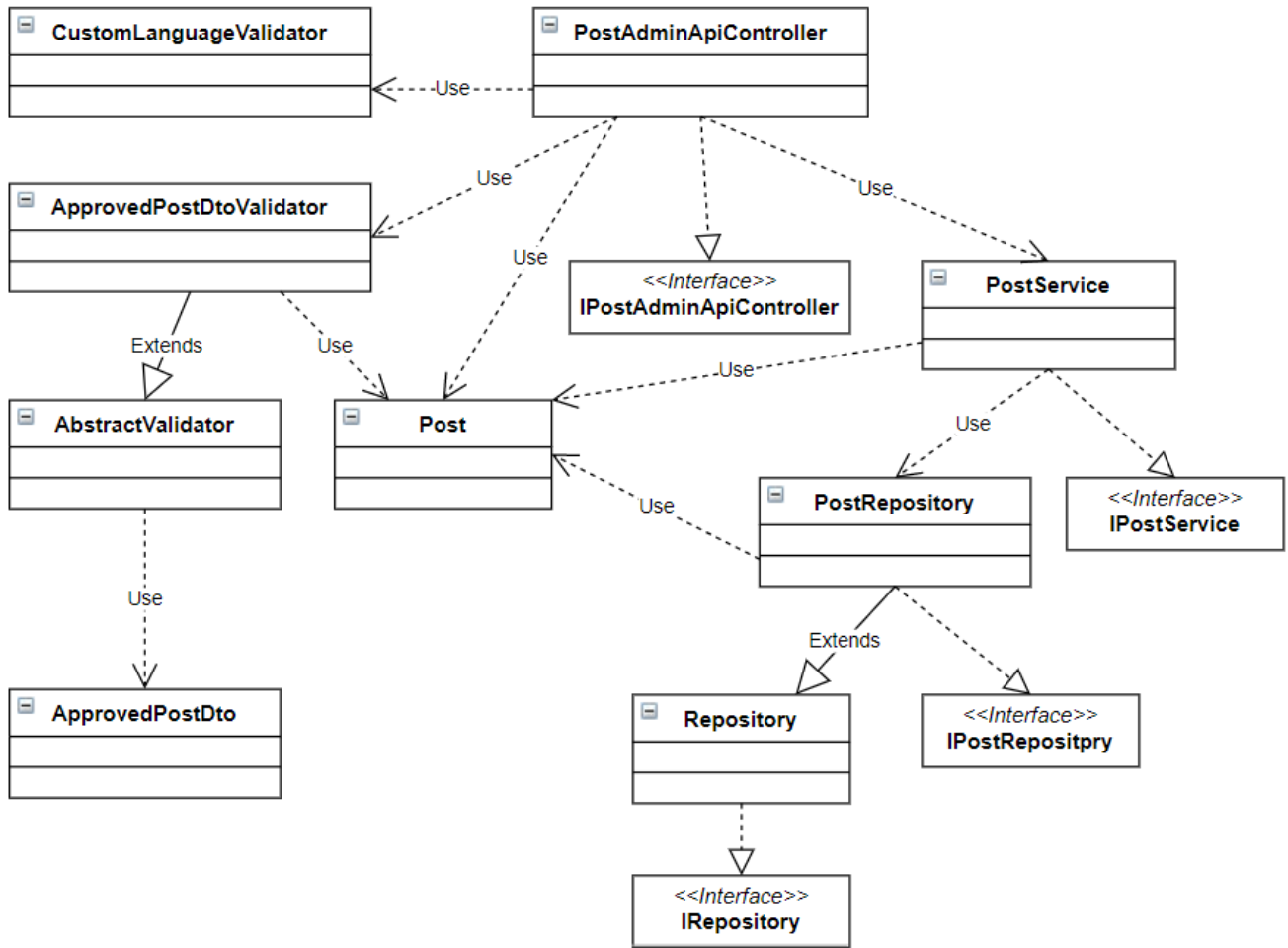
b. Sequence Diagram(s)



11.2 Sequence diagram student create a draft post

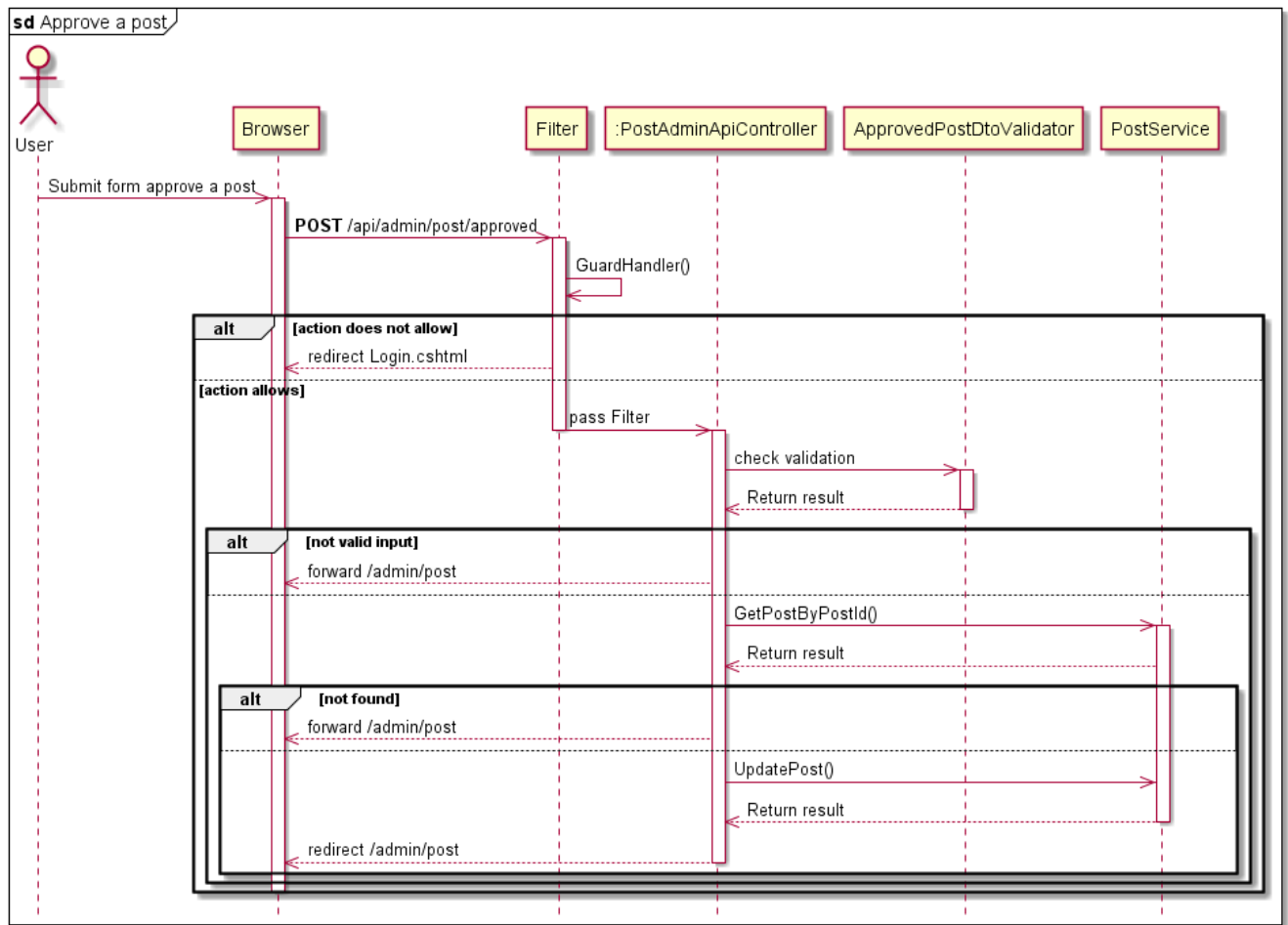
2. Admin approve a post

a. Class Diagram



II.3 Class diagram admin approve a post

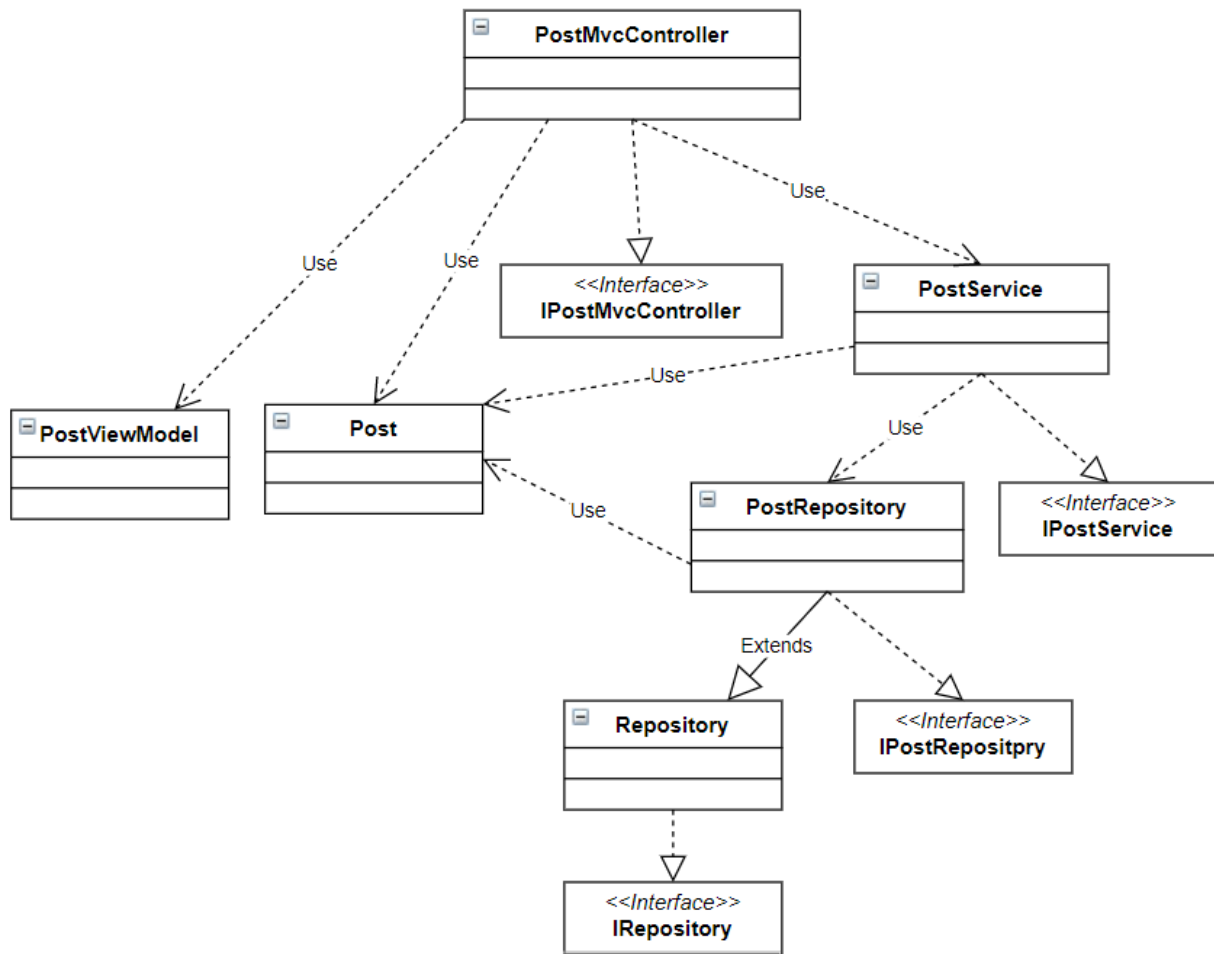
b. Sequence Diagram(s)



II.4 Sequence diagram admin approve a post

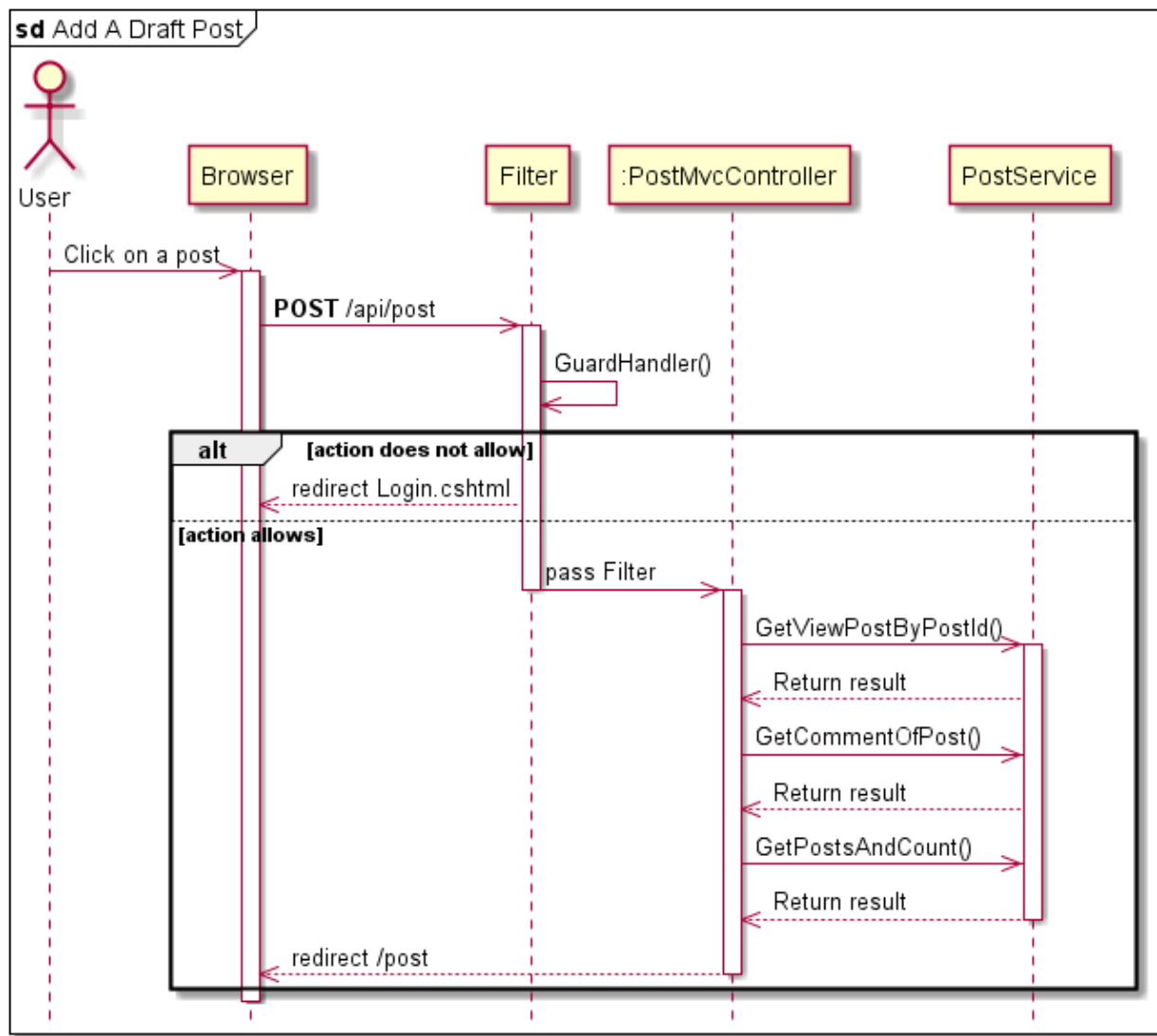
3. User view a post

a. Class Diagram



II.5 Class diagram user view a post

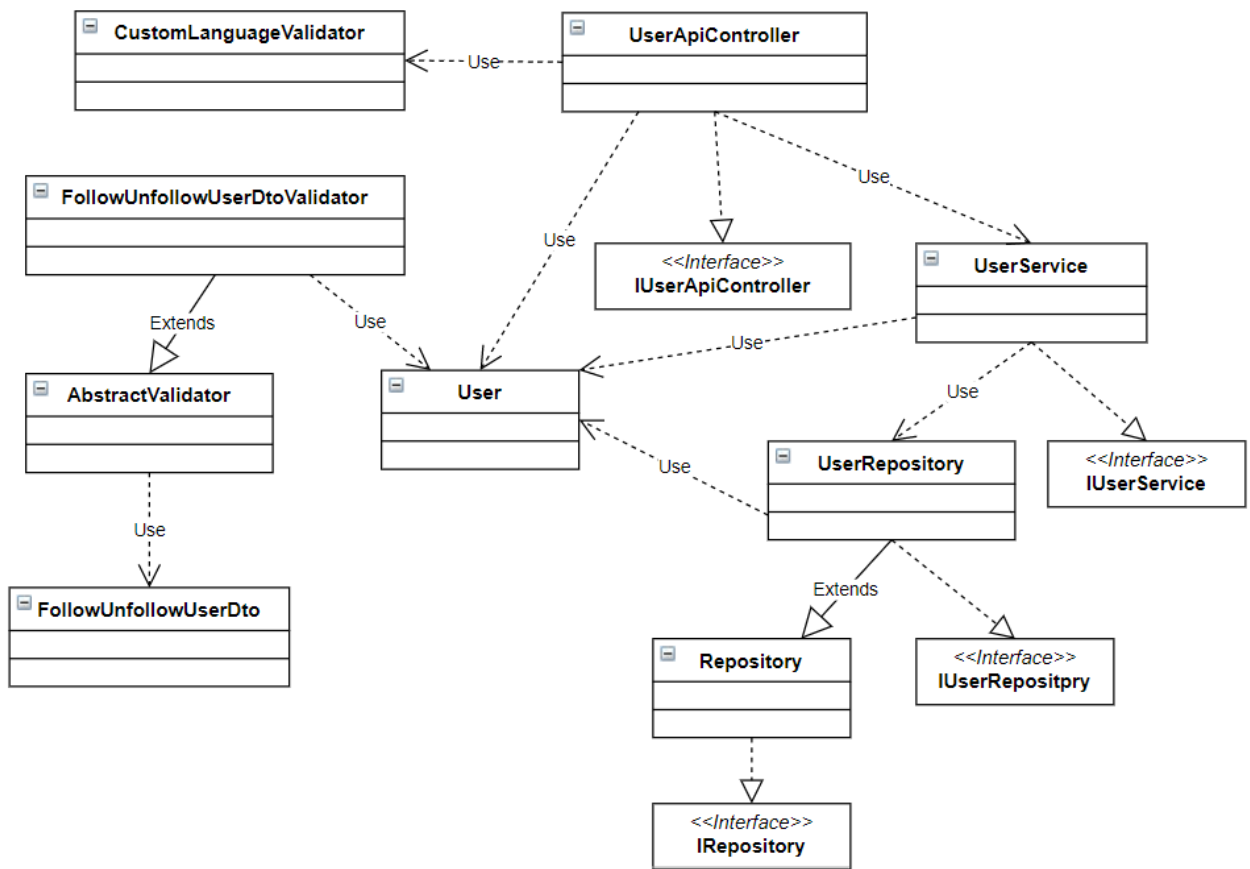
b. Sequence Diagram(s)



II.6 Sequence diagram user view a post

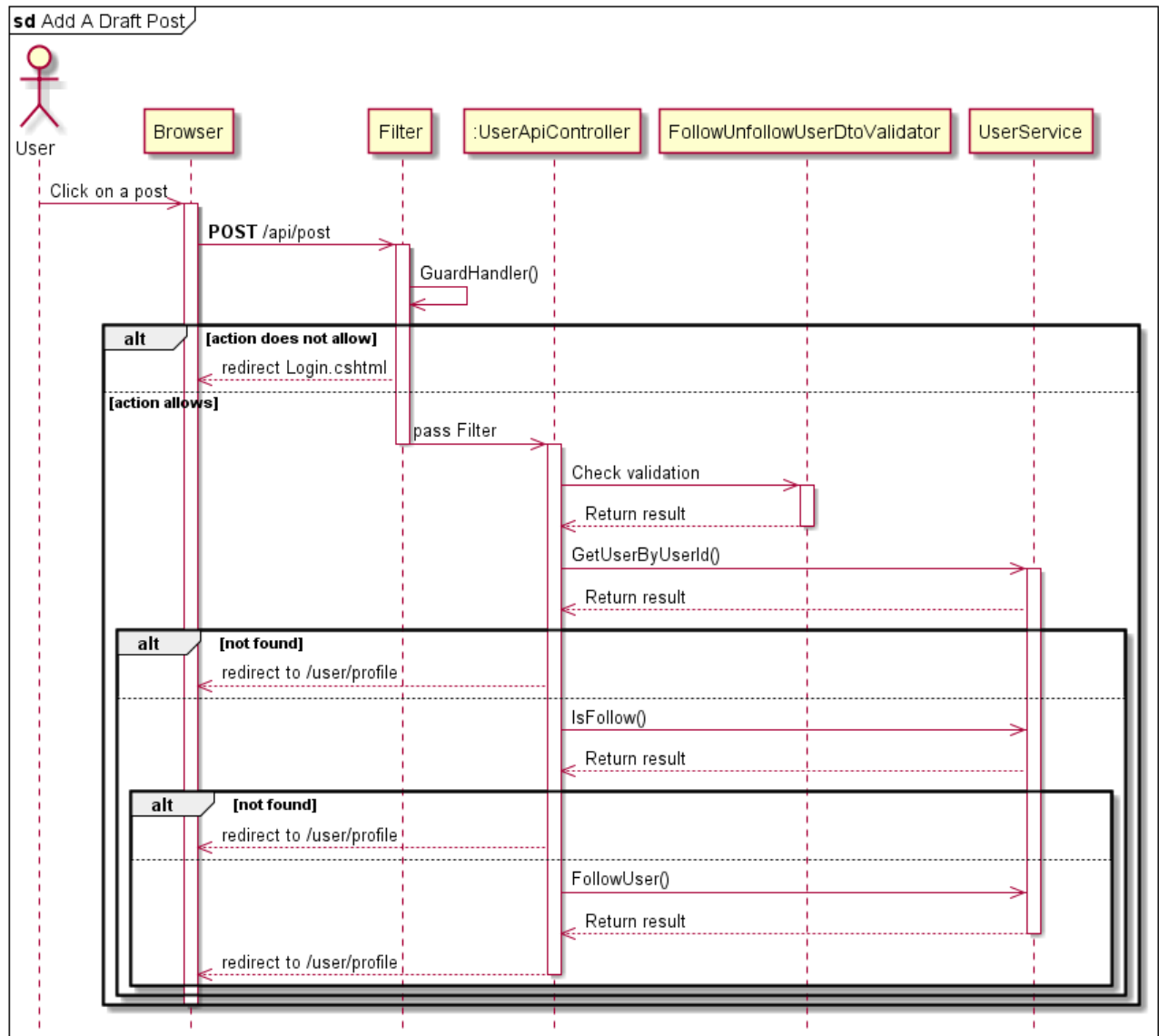
4. User follow another user

a. Class Diagram



II.7 Class diagram follow another user

b. Sequence Diagram(s)



II.8 Sequence diagram follow another user

III. Database Tables

1. tblCategory

| # | Field name | Type | Size | Unique | Not Null | PK/FK | Notes |
|---|-------------|----------|------|--------|----------|-------|---------------------------|
| 1 | CategoryId | nvarchar | 40 | x | x | PK | Id of category |
| 2 | Name | nvarchar | 50 | | x | | Name of category |
| 3 | Description | nvarchar | 50 | | x | | Description of category |
| 4 | Status | int | | | x | | Status of category |
| 5 | CreateDate | nvarchar | 50 | | x | | Creation date of category |

2. tblComment

| # | Field name | Type | Size | Unique | Not Null | PK/FK | Notes |
|---|--------------|----------|------|--------|----------|-------|-------------------------------|
| 1 | CommentId | nvarchar | 50 | x | x | PK | Id of comment |
| 2 | Content | nvarchar | max | | x | | Content of category |
| 3 | Like | int | | | x | | Number of like of comment |
| 4 | Dislike | int | | | x | | Number of dislikes of comment |
| 5 | CreateDate | nvarchar | 20 | | x | | Creation date of comment |
| 6 | OriCommentId | nvarchar | 50 | | | FK | The id of original comment |
| 7 | PostId | nvarchar | 40 | | | FK | The id of post |
| 8 | UserId | nvarchar | 40 | | | FK | The id of user |

3. tblFollowInfo

| # | Field name | Type | Size | Unique | Not Null | PK/FK | Notes |
|---|-----------------|----------|------|--------|----------|-------|-----------------------------|
| 1 | FollowInfoId | nvarchar | 40 | x | x | PK | Id of following information |
| 2 | FollowingUserId | nvarchar | 40 | | x | FK | The id of following user |
| 5 | FollowerId | nvarchar | 40 | | x | FK | The id of follower user |

4. tblLikeComment

| # | Field name | Type | Size | Unique | Not Null | PK/FK | Notes |
|---|---------------|----------|------|--------|----------|-------|--------------------------|
| 1 | LikeCommentId | nvarchar | 40 | x | x | PK | Id of like comment |
| 2 | CommentId | nvarchar | 50 | | x | FK | The id of comment |
| 3 | CreateDate | nvarchar | 50 | | x | | Creation Date of comment |
| 4 | UserId | nvarchar | 40 | | x | FK | The id of user |
| 5 | Expression | int | | | x | | Like or dislike status |

5. tblLikePost

| # | Field name | Type | Size | Unique | Not Null | PK/FK | Notes |
|---|------------|----------|------|--------|----------|-------|------------------------|
| 1 | LikePostId | nvarchar | 40 | x | x | PK | Id of like post |
| 2 | PostId | nvarchar | 40 | | x | FK | The id of post |
| 3 | CreateDate | nvarchar | 20 | | x | | Creation Date of post |
| 4 | UserId | nvarchar | 40 | | x | FK | The id of user |
| 5 | Expression | int | | | x | | Like or dislike status |

6. tblNotification

| # | Field name | Type | Size | Unique | Not Null | PK/FK | Notes |
|---|----------------|----------|------|--------|----------|-------|-----------------------------|
| 1 | NotificationId | nvarchar | 40 | x | x | PK | Id of notification |
| 2 | Content | nvarchar | max | | x | | Content of notification |
| 3 | Description | nvarchar | max | | x | | Description of notification |
| 4 | Level | int | | | x | | Level of notification |
| 5 | SenderId | nvarchar | 40 | | x | | The id of sender user |
| 6 | ReceiverId | nvarchar | 40 | | x | | The id of receiver user |

7. tblPost

| # | Field name | Type | Size | Unique | Not Null | PK/FK | Notes |
|----|-------------|----------|------|--------|----------|-------|---|
| 1 | PostId | nvarchar | 40 | x | x | PK | Id of post |
| 2 | Title | nvarchar | 250 | | x | | Title pf post |
| 3 | Content | nvarchar | max | | x | | Content of post |
| 4 | Note | nvarchar | 500 | | | | Note of post when admin approve or deny |
| 5 | Description | nvarchar | 500 | | x | | Description of post |
| 6 | CoverUrl | nvarchar | max | | x | | Cover image of post |
| 7 | ReadTime | int | | | x | | Estimate reading time |
| 8 | Like | int | | | x | | Number of likes |
| 9 | Dislike | int | | | x | | Number of dislikes |
| 10 | View | int | | | x | | Number of views |
| 11 | Status | int | | | x | | Status of post |
| 12 | CreateDate | nvarchar | 20 | | x | | Creation Date of post |
| 13 | StudentId | nvarchar | 40 | | | FK | Id of user create post |
| 14 | LecturerId | nvarchar | 40 | | | FK | Id of user approve post |
| 15 | CategoryId | nvarchar | 40 | | | FK | Id of category |

8. tblTag

| # | Field name | Type | Size | Unique | Not Null | PK/FK | Notes |
|---|------------|----------|------|--------|----------|-------|-----------------------|
| 1 | TagId | nvarchar | 40 | x | x | PK | Id of tag |
| 2 | Name | nvarchar | 30 | | x | | Name of tag |
| 3 | Status | nvarchar | int | | x | | Status of tag |
| 4 | CreateDate | nvarchar | 20 | | x | | Creation Date of post |

9. tblPostTag

| # | Field name | Type | Size | Unique | Not Null | PK/FK | Notes |
|---|------------|----------|------|--------|----------|-------|-------------------------|
| 1 | PostTagId | nvarchar | 40 | x | x | PK | Id of tag of post using |
| 2 | PostId | nvarchar | 40 | | x | FK | Id of post |
| 3 | TagId | nvarchar | 40 | | x | FK | Id of tag |

10. tblReward

| # | Field name | Type | Size | Unique | Not Null | PK/FK | Notes |
|---|-------------|----------|------|--------|----------|-------|-------------------------|
| 1 | RewardId | nvarchar | 40 | x | x | PK | Id of Reward |
| 2 | Name | nvarchar | 40 | | x | | Name of Reward |
| 3 | Description | nvarchar | 500 | | x | | Description of reward |
| 4 | CreateDate | nvarchar | 20 | | x | | Creation Date of reward |
| 5 | ImageUrl | nvarchar | max | | x | | Image url of reward |
| 6 | Type | int | | | x | | Type of reward |
| 7 | Constraint | Int | | | x | | Constraint of reward |

11. tblUserReward

| # | Field name | Type | Size | Unique | Not Null | PK/FK | Notes |
|---|--------------|----------|------|--------|----------|-------|------------------------------|
| 1 | UserRewardId | nvarchar | 40 | x | x | PK | Id of User Reward |
| 2 | UserId | nvarchar | 40 | | x | | Id of User get reward |
| 3 | RewardId | nvarchar | 40 | | x | FK | Id of reward |
| 4 | CreateDate | nvarchar | max | | x | FK | Creation Date of user reward |

12. tblSavePost

| # | Field name | Type | Size | Unique | Not Null | PK/FK | Notes |
|---|------------|----------|------|--------|----------|-------|--------------------------|
| 1 | SavePostId | nvarchar | 40 | x | x | PK | Id of save post |
| 2 | UserId | nvarchar | 40 | | x | FK | The User Id of save post |
| 3 | PostId | nvarchar | 40 | | x | FK | The Post Id of save post |

| | | | | | | | |
|---|------------|----------|----|--|---|--|----------------------------|
| 4 | CreateDate | nvarchar | 20 | | x | | Creation Date of save post |
|---|------------|----------|----|--|---|--|----------------------------|

13. tblUser

| # | Field name | Type | Size | Unique | Not Null | PK/FK | Notes |
|----|------------|----------|------|--------|----------|-------|------------------------------|
| 1 | UserId | nvarchar | 40 | x | x | PK | Id of user |
| 2 | GoogleId | nvarchar | 30 | x | | | Google ID of user |
| 3 | Username | nvarchar | 30 | | | | Username of user |
| 4 | Password | nvarchar | 255 | | | | Password of user |
| 5 | Email | nvarchar | 255 | x | x | | Email of user |
| 6 | Name | nvarchar | 50 | | x | | Full Name of user |
| 7 | Phone | nvarchar | 20 | | x | | Phone number of user |
| 8 | Address | nvarchar | 255 | | x | | Address of user |
| 9 | AvatarUrl | nvarchar | max | | x | | Avatar image of user |
| 10 | Status | int | | | x | | Status of user |
| 11 | Role | int | | | x | | Role of user |
| 12 | CreateDate | nvarchar | 20 | | x | | Creation Date of user reward |