**Domain 1: Social Media Platform – Domain Description & Initial Modeling**

1. Domain Description

Users on the Social Media Platform can maintain profiles to share multimedia content and follow other members by using likes and comments and posts sharing functions. The platform delivers constant content updates with privacy controls as well as secure data handling and notifications and real-time content sharing abilities. Users can share content that includes text alongside images and videos while they control their profiles and follow additional users and monitor how their content interacts with others.

Features:

* User registration and login
* Profile customization
* Posting multimedia content (text, image, video)
* Liking, commenting, and sharing posts
* Following and unfollowing users
* Real-time notifications
* Content visibility settings (public, friends-only, private)
* Moderation and reporting tools
* Engagement tracking and analytics
* Privacy and security management

**2. Initial Object Identification Table**

|  |  |
| --- | --- |
| **Object Name** | **Description** |
| User | Represents an individual using the platform |
| Profile | Contains user's public details |
| Post | Content shared by users (text, image, video) |
| Comment | Replies on posts |
| Like | Represents a like action by a user |
| Share | Represents a user sharing a post |
| Follow | Represents a user following another |
| Notification | Alerts related to interactions and events |
| Media | Image or video attached to posts |
| Report | Flagging inappropriate content or users |
| Role | Permissions and access control for user types |
| PrivacySetting | Controls content visibility and interaction |

**3. Initial Attribute and Method Tables**

* **User**

***Attributes:***

| Attribute | Type | Visibility | Rationale |
| --- | --- | --- | --- |
| userID | int | private | Unique identifier |
| email | String | private | For authentication |
| passwordHash | String | private | Security |
| role | Role | private | User type (admin, etc.) |

***Methods:***

| Method | Return Type | Visibility | Rationale |
| --- | --- | --- | --- |
| register() | User | public | Create account |
| login() | boolean | public | Authenticate user |
| deactivate() | void | public | Delete/deactivate user |

* **Profile**

***Attributes:***

| Attribute | Type | Visibility | Rationale |
| --- | --- | --- | --- |
| profileID | int | private | Unique profile ID |
| userID | int | private | Link to user |
| name | String | private | Full name |
| bio | String | private | Short intro |
| profilePic | String | private | Profile image URL |
| followerCount | int | private | Social metrics |

***Methods:***

| Method | Return Type | Visibility | Rationale |
| --- | --- | --- | --- |
| updateProfile() | void | public | Modify info |
| getFollowers() | List<User> | public | Return followers |

* **Post**

***Attributes:***

| Attribute | Type | Visibility | Rationale |
| --- | --- | --- | --- |
| postID | int | private | Unique identifier |
| author | User | private | Creator of the post |
| content | String | private | Text content |
| media | List<Media> | private | Attached media |
| timestamp | DateTime | private | Time of posting |
| visibility | String | private | Public/Friends/Private |

***Methods:***

| Method | Return Type | Visibility | Rationale |
| --- | --- | --- | --- |
| addComment() | void | public | Append comment |
| addLike() | void | public | Like this post |
| sharePost() | void | public | Repost for followers |

* **Comment**

***Attributes:***

| Attribute | Type | Visibility | Rationale |
| --- | --- | --- | --- |
| commentID | int | private | Unique comment ID |
| author | User | private | Commenter |
| post | Post | private | Associated post |
| content | String | private | Comment text |
| timestamp | DateTime | private | Time posted |

* **Like / Share**

| Attribute | Type | Visibility | Rationale |
| --- | --- | --- | --- |
| likeID/shareID | int | private | Unique identifier |
| user | User | private | Who liked/shared |
| post | Post | private | Associated post |
| timestamp | DateTime | private | Time interacted |

* **Follow**

| Attribute | Type | Visibility | Rationale |
| --- | --- | --- | --- |
| followID | int | private | Unique follow ID |
| follower | User | private | The one who follows |
| followed | User | private | The one being followed |

* **Notification**

| Attribute | Type | Visibility | Rationale |
| --- | --- | --- | --- |
| notificationID | int | private | Unique identifier |
| recipient | User | private | User receiving it |
| message | String | private | Notification text |
| isRead | boolean | private | Whether seen or not |

* **Report**

| Attribute | Type | Visibility | Rationale |
| --- | --- | --- | --- |
| reportID | int | private | Unique report |
| reporter | User | private | User who reported |
| target | Post/User | private | Reported post or user |
| reason | String | private | Reason for reporting |

* **Role & PrivacySetting**

Role:

* admin
* user
* creator
* **PrivacySetting:**
* public
* friends-only
* private

**4. Initial UML Class Diagram**

