Let’s say you are building a social network. The MVP includes following features -

1. User can be-friend other users
2. Users can share text-only posts. The posts will be visible only to the user's friends.
3. Feed to view posts of the user's friends and her own posts. The posts are sorted by timestamp in descending order.

Solve the following challenges to complete the MVP. Don’t include any more features like comments / likes / photos.

## Challenge 1

Design a fully normalized database schema and interface.

## Challenge 2

Denormalize the schema to make the Feed load faster

**Relational DB Schema**

**User Database**

Key: UserID : int

Name

Email

PhoneNo

DateOfBirth

Location

UserDb1 :int UserDb2: int

**Followers:**

Key: UserID1 : int, UserID2 : int

**Post:**

Key: PostId

UserID

Data

TimeStamp

**Public APIs:**

CreateUser() => User

FollowUser(UserId, UserID) => Boolean

UnFollowUser(UserId, UserID) => Boolean

CreatePort(UserId ) => PostId

ShowFeed(User) => List<Posts> by Timestamp

UserFollow

Write:

Client/User -> UpdatePost -> System -> DB

Read:

Client/User <- Cache <- System <- DB