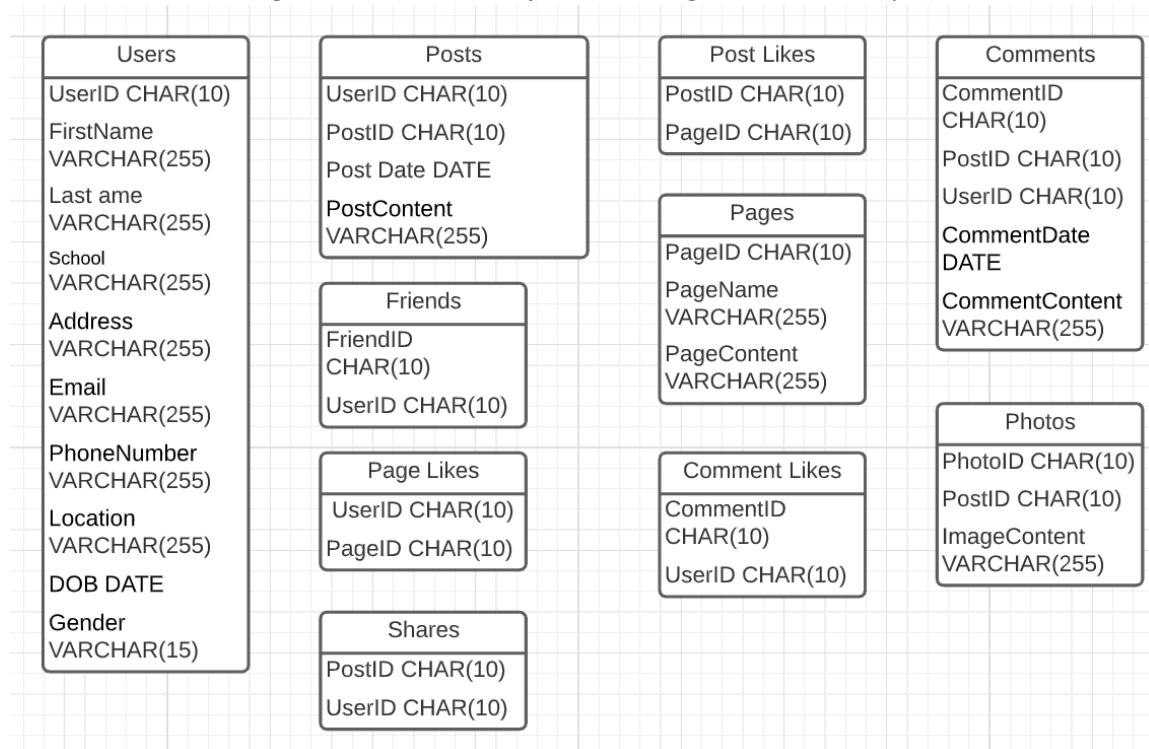


Entity Relationship Diagram [50%]

1. From the above diagram, list all of the objects including its attributes! (.pdf)



2. Determine the relation between every object, specify the master and child table! (.pdf)

Master	Child
User	Post
User	Friends
User	Page Likes
Page	Page Likes
Post	Photos
Post	Shares
Post	Comments
Post	Post Likes
Comments	Comment Likes

3. For each object, decide its constraint and specify the reason in detail! (.pdf)

A. Users

- User ID primary key because every user ID must be unique
- First Name NOT NULL because first name must be filled
- Gender like 'male' | Gender like 'female' because there's only option for male and female for gender

B. Posts

- Post ID primary key because post ID must be unique
- User ID foreign key because user id is a key from the Users object
- Post Content NOT NULL because the content must be filled

C. Post Likes

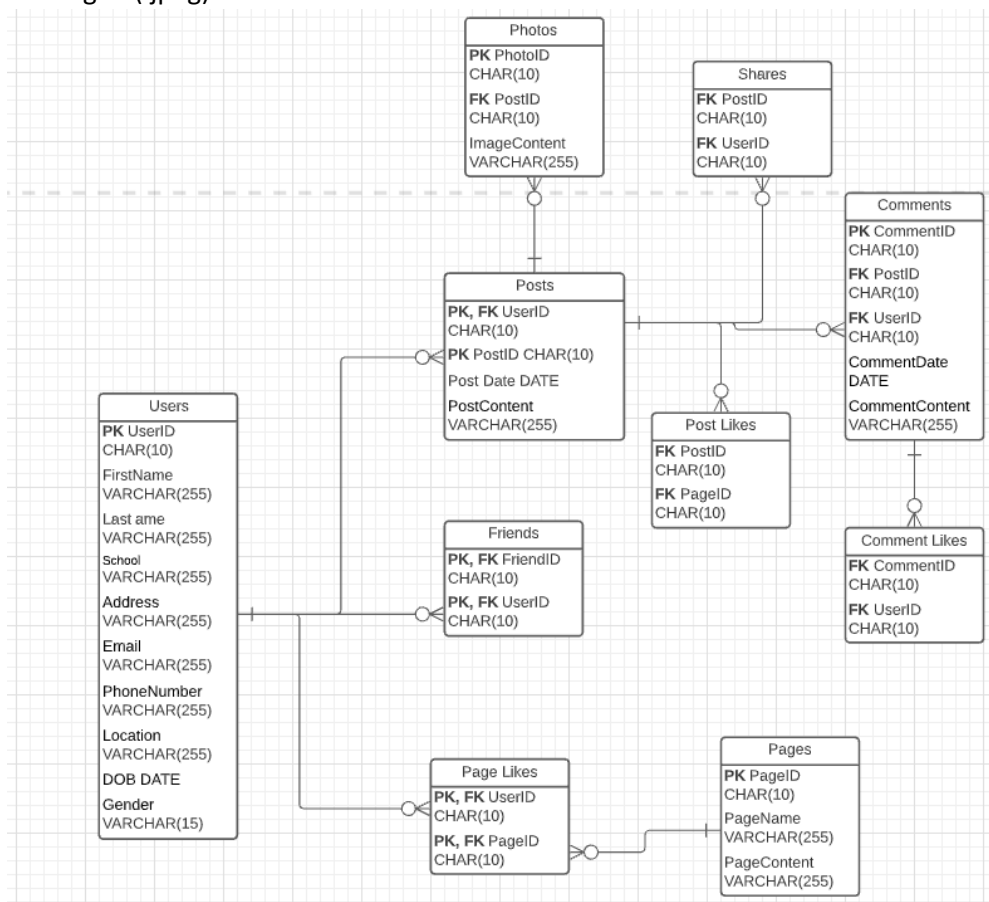
- Post ID is a composite key, because both primary key and foreign key
- User ID is composite key, because both primary key and foreign key

D. Photos

- Photo ID is primary key because photo ID must be unique
- Post ID is foreign key because post ID is a key from the Posts object

- E. Shares
 - a. Post ID is a foreign key, because post ID is from the Post object
 - b. User ID is foreign key, because foreign ID is from another object
- F. Comments
 - a. Comment ID is primary key because comment ID must be unique
 - b. Post ID is a foreign key, because post ID is from the post object
 - c. User ID is foreign key, because user ID is from another object
- G. Comment Likes
 - a. Comment ID is a foreign key, because comment ID is from the Comments object
 - b. User ID is foreign key, because user ID is from another object
- H. Pages
 - a. Page ID is primary key because page ID must be unique
- I. Page Likes
 - a. Page ID is a composite key, because both primary key and foreign key
 - b. User ID is composite key, because both primary key and foreign key
- J. Friends
 - a. Friend ID is a composite key, because both primary key and foreign key
 - b. User ID is a composite key, because both primary key and foreign key

4. Draw the above diagram in "ERD format" which includes the data types, primary and foreign key, and relation between objects. Please choose appropriate tools, we recommend using Visual Paradigm. (.jpeg)



Data Definition Language [50%]

1. Explain what is data integrity and how do we maintain it in SQL Server! (.pdf)

A reference of how accurate and consistent a data is in a database. We can maintain data integrity using constraints and do validations.

2. Explain the difference and give example for: primary key, foreign key, and composite key! (.pdf)
Primary key is a unique attribute in an object that makes the column is unique. Example, NIM for binusians.

Foreign key is a column that relates from another table. Example, the NIM & name of a student in binusmaya forum.

Composite key is a primary key with more than one attribute. Example, NIM & Class ID of a student in BINUS.

3. Explain the following terms and give example: BEGIN TRAN, COMMIT, and ROLLBACK! (.pdf)

- a) BEGIN TRAN is a kind of checkpoint to save in sql. Every BEGIN TRAN can only contain 1 COMMIT or ROLLBACK.
- b) COMMIT allows you to move the checkpoint to the point when you executed the COMMIT and ending the BEGIN TRAN.
- c) ROLLBACK allows you to move back, undo-ing the database to the point before executing BEGIN TRAN and ending the BEGIN TRAN

4. Create all of the tables above according to your answer in the previous section! (.sql)