

## Entity Relationship Diagram [50%]

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

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- Users
  - UserID int [PK]
  - FirstName VARCHAR
  - LastName VARCHAR
  - School VARCHAR
  - Address VARCHAR
  - Email VARCHAR
  - PhoneNumber BIGINT
  - Location VARCHAR
  - DateOfBirth VARCHAR
  - Gender CHAR
- Posts
  - PostID int [PK]
  - UserID int
  - PostContent VARCHAR
  - PostDate VARCHAR
- Pages
  - PageID int [PK]
  - PageName VARCHAR
  - PageContent VARCHAR
- PageLikes
  - UserID int [PK]
  - PageID int [PK]
- Friends
  - FriendID int [PK]
  - UserID int [PK]
- CommentLikes
  - CommentID int [PK]
  - UserID int [PK]
- Comments
  - CommentID int [PK]
  - PostID int
  - UserID int
  - CommentContent VARCHAR
  - CommentDate VARCHAR
- Shares
  - PostID int [PK]
  - UserID int [PK]
- Photos
  - PhotoID int [PK]
  - PostID int
  - ImageContent VARCHAR
- PostLikes

- PostID int [PK]
- UserID int [PK]

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

MASTER	CHILD
USERS	POSTS
USERS	PAGELIKES
USERS	FRIENDS
PAGES	PAGELIKES
POST	POSTLIKES
POST	PHOTOS
POST	SHARES
POST	COMMENTS
COMMENTS	COMMENTLIKES

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

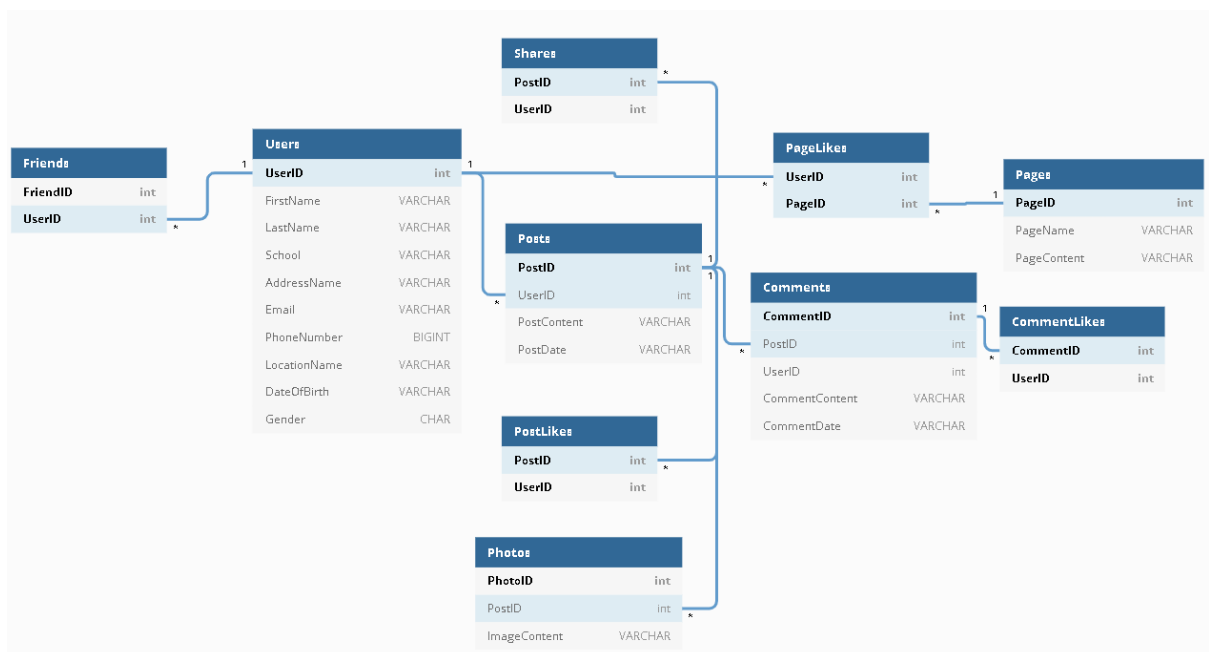
- USERS
  - FirstName = NOT NULL, name is important for identity
  - Gender=F/M, gender should be between female and male
  - DOB=NOT NULL, DOB must include, important identity

ON UPDATE CASCADE ON DELETE SET NULL, if data is updated, the id for is updated, if data is deleted then the id will be set null.

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)



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

= Data integrity is a theory that applies into database, when you delete the master, the child should also be deleted, for example, user 1 buy apple, if the database delete user1, then the apple should not be sold, and the order is also deleted.

2. Explain the difference and give example for: primary key, foreign key, and composite key! (.pdf)

PRIMARY KEY = Unique Data usually located at master table

FOREIGN KEY = can be more than one, foreign key can be a “pointer” from child to master table relationship

COMPOSITE KEY = two or more attribute of object/entity can be both PRIMARY KEY and become unique data.

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

**BEGIN TRAN** = setting a “checkpoint” in a SQL, so everything that happen while begin tran, can be rollback or rewind to before begin tran happened

**COMMIT** = finalize checkpoint and cant be rewind/rollback to the state before begin tran happened

**ROLLBACK** = rewind, undo, redo, move back the code to before begin tran was executed.

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

***Sql file in other files.***