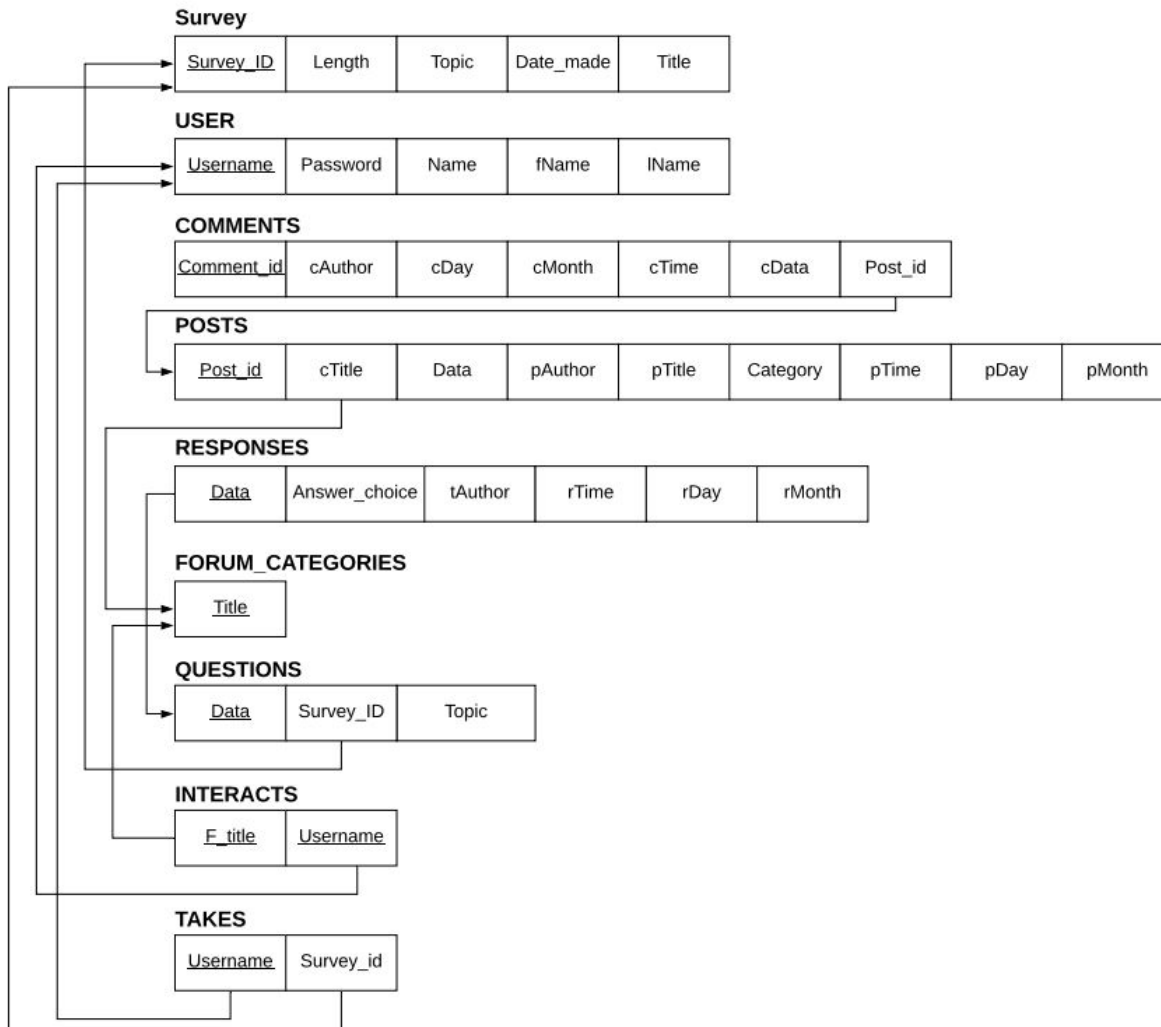


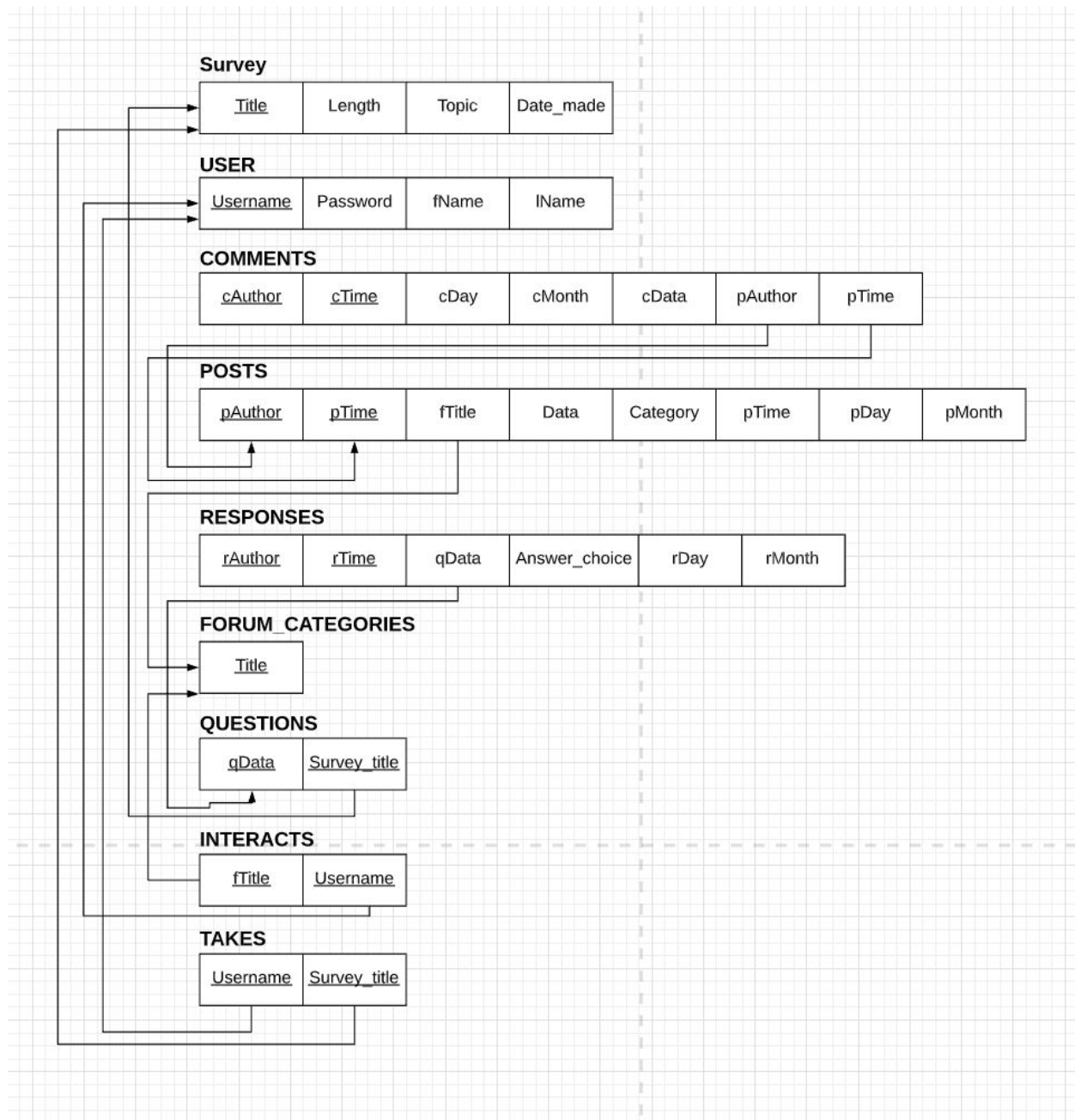
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CSC 315-01  
30 March 2020

## Stage IV - Elaboration: Design

### Previous Schema Design



## Updated Schema Design



1.)

<b>TABLES</b>	<b>BCNF (yes/no)</b>	<b>REASON</b>	<b>CHANGES</b>
Survey	<b>no</b>	Survey_ID can be derived by Title, but Title is non-prime	Make Title the primary key and delete the Survey_ID (including foreign key references)
User	<b>yes</b>	The third normal form is met and the superkey Username derives all the other non-prime attributes	
Posts	<b>no</b>	post_ID can be derived by pAuthor and pTime which are non-prime attributes	Remove Post_ID and make pAuthor + pTime the superkey
Comments	<b>no</b>	comment_ID can be derived by cAuthor and cTime which are non-prime attributes	Remove Comment_ID and make cAuthor and cTime together the superkey
Responses	<b>no</b>	Data is not a valid primary key because it references the question being answered and every question has many responses	pAuthor + pTime to make the superkey
Forum_Categories	<b>yes</b>	Follows third normal form and no functional dependency is present in which an attribute is derived from an attribute other than the superkey (there are no functional dependencies)	
Questions	<b>yes</b>	Follows third normal form as the two keys are superkeys and cannot be derived by the keys.	Design Change (Not BCNF change)= Get rid of Topic (Questions will only have the one topic that is associated with Survey)

Interacts	<b>yes</b>	F_title and Username are both keys	
Takes	<b>no</b>	Survey_ID can not be derived from the key Username	Make Survey_Title + Username the super key

**2. ) Define the different views required. For each view list the data and transaction requirements. Give a few examples of queries, in English, to illustrate.**

Non-registered User: Users that only have the permission to view articles, documents, comments of an article, and posts. They can not take surveys, create posts or comment on posts.

Their queries include, search forum categories, search posts, search comments, search surveys, etc.

Registered User: A user that has made an account with a username and password. This user has the above-mentioned capabilities as well as can take surveys, create posts and comment on posts. Once a survey is started, the responses are not stored until the entire survey is submitted, (same for posts and comments).

Their queries include search forum categories, search posts, search surveys, insert comments, insert posts, take surveys, insert responses, etc.

Moderator: Users that will be in charge of overseeing the user generated content that is on the website. This user inherits the above mentioned powers and also has the ability to remove and/or ban users.

Their queries are: search forum categories, search posts, insert comments, insert posts, take surveys, insert responses, delete users, etc.

Admin/Superuser: Authorized users that have the permission to access to edit and alter the database schema. These users would have overall access to the functionality of the website. These users have all of the functionalities of the other three types of users.

Their queries are: create/delete users, create/delete surveys, create/delete posts, delete comments, etc.

**3. ) Design a complete set of queries to satisfy the transaction requirements identified in the previous stages.**

Non-Registered User:

```
SELECT * FROM SURVEYS WHERE Title = "---";  
SELECT * FROM SURVEYS WHERE Topic = "---";
```

```
SELECT * FROM FORUM_CATEGORIES WHERE Title = "---";
```

```
SELECT * FROM POSTS WHERE Category = "---";  
SELECT * FROM POSTS WHERE pAuthor = "---";  
SELECT * FROM POSTS WHERE fTitle = "---";
```

Registered User (inherits queries from Non-registered users):

```
INSERT Data INTO POSTS VALUES();  
INSERT fTitle INTO POSTS VALUES();
```

```
INSERT cData INTO COMMENTS VALUES();
```

Moderator (inherits queries from Non-Registered Users and Registered Users):

```
DELETE FROM POSTS WHERE Category = "---";  
DELETE FROM POSTS WHERE fTitle = "---";  
DELETE FROM POSTS WHERE Data = "---";  
DELETE FROM POSTS WHERE pAuthor = "---";
```

```
DELETE FROM COMMENTS WHERE pAuthor = "---";  
DELETE FROM COMMENTS WHERE cAuthor = "---";  
DELETE FROM COMMENTS WHERE cData = "---";
```

Admin/Superuser (inherits queries from Non-registered users, Registered users, and Moderator):

```
CREATE TABLE...;
```

```
INSERT INTO USER VALUES();  
DELETE FROM USER WHERE Username = "---";  
ALTER TABLE USER ALTER COLUMN newColumn;
```

```
INSERT INTO SURVEY VALUES();
```

```
DELETE FROM SURVEY WHERE Title = "---";  
ALTER TABLE SURVEY ALTER COLUMN Title;  
INSERT INTO SURVEY newColumn;
```

```
DELETE FROM FORUM_CATEGORIES WHERE Title = "---";  
INSERT INTO FORUM_CATEGORIES VALUES();  
INSERT INTO FORUM_CATEGORIES newColumn;
```

```
INSERT INTO QUESTIONS VALUES();  
DELETE FROM QUESTIONS WHERE...;
```

```
DROP TABLE SURVEY;  
DROP TABLE USER;  
DROP TABLE COMMENTS;  
DROP TABLE POSTS;  
DROP TABLE RESPONSES;  
DROP TABLE FORUM_CATEGORIES;  
DROP TABLE QUESTIONS;  
DROP TABLE INTERACTS;  
DROP TABLE TAKES;
```