

# **CS157A Database Project**

## **A Web Application for Study Materials**

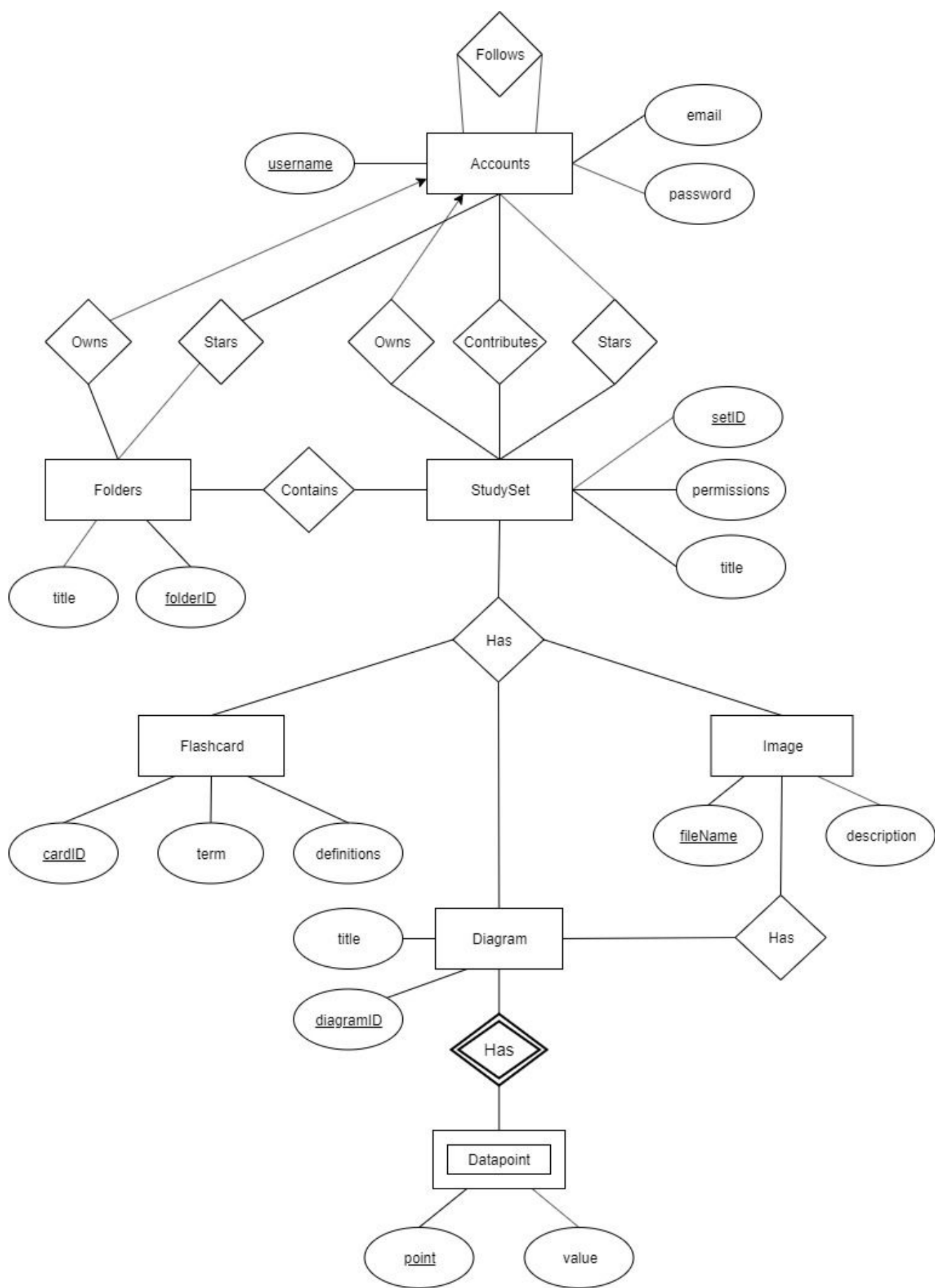
### **Project Design**

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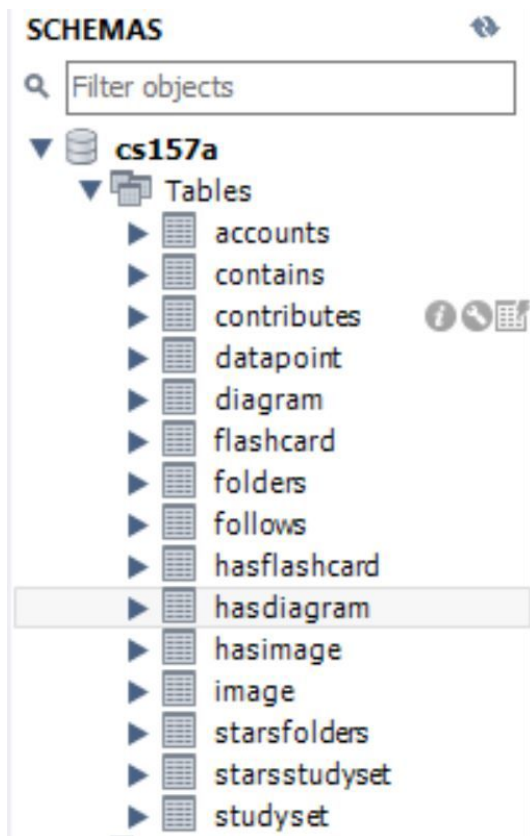


## E/R Diagram Breakdown

- Accounts represents user accounts which are identified by username and have attributes for email and password.
- Follows is a relationship matching accounts to itself. An account can follow other accounts to see their study sets.
- Owns is a relationship matching accounts to study set, representing the study set that each account owns. An account can own multiple study sets.
- Contributes is relationship similar to Owns. It represents study sets that a user has contributed to, but doesn't necessarily own. Multiple accounts can contribute to multiple StudySets.
- Stars is a relationship similar to Contributes and Owns between Accounts and StudySets. It represents what study sets a user has starred in order to keep track of.
- StudySet is an entity that represents study sets. Each studySet has Flashcards, Images, and/or Diagrams.
- Folders is an entity that represents folders. Each folder contains StudySets and is identified by folderID.
- Owns is a relationship mapping Accounts to Folders. An Account can own multiple folders.
- Stars is a relationship similar to owns between Folders and Accounts. It represents what Folders a user has starred in order to keep track of.
- Contains is a relationship mapping StudySets to Folders. It represents a StudySets that are associated with Folders.
- Flashcard is an entity with a term and definitions, the two sides of a flashcard, identified by the cardID.
- Image is an entity that simply represents an image that a user can upload to be contained in a study set identified with its fileName and has a description.
- Diagram is an entity that is identified by diagramID. It has an image and can have multiple Datapoints.
- Datapoint is a weak entity that represents points places on the diagram. It is associated with a particular diagram and identified through its point and has a value.

## Database Model Data

Database schema



*Entity accounts*

	username	email	password
▶	aaronsmith	aaron.smtih@sjsu.edu	pswd
	bones	bones@sjsu.edu	pswd
	data	data@sjsu.edu	pswd
	jadzia	jadzia@sjsu.edu	pswd
	jimkirk	mrkirk@sjsu.edu	pswd
	picard	picard@sjsu.edu	pswd
	redshirt	redshirt@sjsu.edu	pswd
	spock	spock@sjsu.edu	pswd
	uhura	uhura@sjsu.edu	pswd
	worf	worf@sjsu.edu	pswd
✱	NULL	NULL	NULL

### *Entity contains*

	folderID	setID
▶	1	1
	1	2
	2	3
	2	4
	3	1
	3	2
	4	3
	4	4
	5	5
	6	5
▲	NULL	NULL

### *Entity contributes*

	username	setID
▶	bones	4
	jimkirk	2
	picard	2
	picard	3
	spock	1
	spock	2
	spock	3
	spock	4
	spock	5
	uhura	4
▲	NULL	NULL

### *Entity datapoint*

	diagramID	point	value
▶	1	1	123
	2	2	234
	3	3	345
	4	4	456
	5	5	567
	6	6	678
	7	7	789
	8	8	890
	9	9	901
	10	10	12

### *Entity diagram*

	diagramID	title
▶	1	merge sort
	2	insertion sort
	3	quick sort
	4	heap sort
	5	counting sort
	6	selection sort
	7	bubble sort
	8	depth first se...
	9	breadth first ...
	10	graph example

### Entity flashcard

	cardID	term	definitions
►	1	ad interim	temporarily
	2	ante meridiem	before midday
	3	et alii	and others
	4	et caetera	and the others
	5	exempli gratia	for example
	6	inter alia	among other t...
	7	id est	that is
	8	per annum	through a year
	9	post meridiem	after midday
	10	pro tempore	temporarily
	11	post scriptum	after what ha...
	12	quaque die	every day
	13	quod erat dem...	which was to ...
	14	videlicet	namely

### Entity folders

	folderID	title	owner
►	1	CS146	aaronsmith
	2	CS157A	aaronsmith
	3	CS151	aaronsmith
	4	CS152	aaronsmith
	5	CS166	aaronsmith
	6	CS154	aaronsmith
	7	CS149	aaronsmith
	8	CS158A	aaronsmith
	9	CS185C	aaronsmith
	10	CS174	aaronsmith

### Entity follows

	username1	username2
▶	bones	aaronsmith
	bones	jimkirk
	bones	spock
	jimkirk	aaronsmith
	jimkirk	bones
	jimkirk	picard
	jimkirk	spock
	spock	aaronsmith
	spock	bones
	spock	jimkirk

### Entity hasflashcard

	setID	cardID
▶	1	1
	1	2
	1	3
	1	4
	1	5
	1	6
	1	7
	1	8
	1	9
	1	10
	1	11
	1	12
	1	13
	1	14

### Entity hasdiagram

	setID	diagramID
▶	10	1
	10	2
	10	3
	10	4
	10	5
	10	6
	10	7
	10	8
	10	9
	10	10
▲	NULL	NULL

### Entity hasimage

	setID	fileName
▶	5	JPG_1
	5	JPG_2
	5	JPG_3
	5	JPG_4
	5	JPG_5
	10	PNG_1
	10	PNG_2
	10	PNG_3
	10	PNG_4
	10	PNG_5
-	NULL	NULL

### Entity image

	fileName	description
▶	JPG_1	enterprise (NX-01)
	JPG_2	enterprise (NCC-1701)
	JPG_3	enterprise (NCC-1701-A)
	JPG_4	enterprise (NCC-1701-B)
	JPG_5	enterprise (NCC-1701-C)
	PNG_1	merge sort
	PNG_2	heap sort
	PNG_3	insertion sort
	PNG_4	quick sort
	PNG_5	counting sort
	NULL	NULL

### Entity starsfolder

	username	folderID
▶	bones	1
	bones	3
	jimkirk	2
	jimkirk	5
	picard	2
	picard	3
	picard	4
	picard	5
	spock	1
	spock	4
▲	NULL	NULL

### Entity starsstudysset

	username	setID
▶	bones	2
	bones	3
	picard	1
	picard	2
	picard	3
	spock	1
	spock	4
	spock	5
	uhura	1
▲	NULL	NULL

### Entity studyset

	setID	Title	permissions	owner
	1	Latin Terms	public	aaronsmith
	2	Inteviuw Prep	public	aaronsmith
	3	Algorithms	public	aaronsmith
	4	Data Structures	public	aaronsmith
	5	Star Trek	public	aaronsmith
	6	CS 157A	private	aaronsmith
	7	CS 185C	private	aaronsmith
	8	CS 147	private	aaronsmith
	9	CS 149	private	aaronsmith
▶	10	CS 146	private	aaronsmith
	NULL	NULL	NULL	NULL