Professor O'Grady
INST 311- 0203

Part 1: Overview of App

The name of the app is StudyBuzz. The logo consists of a honeybee hive sign and a square shape with round edges bounded on the outside with black dashed traced lines traced by a bee; on the inside there will be horizontal lines that represent notes. The image is from https://scalebranding.com/product/36653/ created by the artist @neuzrok.

The app will provide users with the means of creating notes that they will save and then, they will be able to test themselves from the notes they take. The app will save the user's information; the user has control over his/her own resources. The ability to perform any actions on the notes depends on whether they created the notes individually or as a group. This app will provide students with the ability to study, as well as know when they plan to study or meet with their study groups (if any). The user only will be able to change their personal information.

The purpose of our app is to provide resources to college students, like notes and exams randomly generated by the app. Users can create notes by themselves or in groups. In this app, the user can create, edit and delete notes. They can share the notes with any friends, as well. In addition to being able to share notes, they can even create study sessions with their group members at a mutually agreeable time. The functionality of this app will help intended users by making them stay connected with study resources and even allow others to collaborate. For example, if someone loses their notebook and as a result has to recover all their notes, they would have to beg for notes from their peers or professors. On the other hand, with StudyBuzz, you can keep your notes in one location and as a result, their notes are in a safe place where no unauthorized persons can access them.

The people who would be interested in our app will be college students. The app will have many features like productivity, the ability to work in groups on a notes document, and take in-class style exams. In addition to that, they will also be able to markup the most important terms; they can perform similar features like what Word does like formatting paragraphs, creating bullet points, etc. In this app, the user can also tell the app explicitly what kinds of material from their notes they want the app to include in the system-created assessment. Word does not have this configuration; also, Quizlet allows the user to maintain flashcards of important vocabulary but doesn't allow them to save notes.

SCOPE

We will include universities on the basis of whether the student has a .edu email account with which to make an account. This will be done in order to prevent people who are not students at the university from damaging the integrity of the notes and flashcards. Each student will have access to the classes at any school, but they will only be able to edit the sets from their particular school. We won't include a copy of the textbook that the course is using to prevent things like copyright strikes, but we will include the textbook title and the ability to cite from it.

USER TYPES

The intended user population is anyone in college. Anyone is able to utilize this app and others who might benefit from it are teachers, people who work in office settings, and other jobs that require their employees to come up with ideas or quickly understand a topic. Our example user is a college student at UMD. Our app would allow them to utilize notes and flashcards other students in the class have made, giving them a unique point of view on the topic they didn't have before. Irregular users may benefit from the notes sorted by topic if they need specific notes from a specific class. Our app recognizes the school email a user uses to login and allows them to post notes for their school/class ONLY if they are a current student at that school. If they are not a student at that school but are a student somewhere else, they can view the notes. This should prevent users from misinforming other users that want to use the app properly.

TASKS BY USER TYPE

There are two users in this app: students and professors. Both will have different functions. Students will have the following abilities:

- Create note documents
- Create flashcards
- Create folders and decks
- Share notes and practice exams
- Create To do Lists
- Create Time Table / Calendar
- Access public notes from their school and other schools
- Add to existing note collections from their school only
- Cite note source from textbook/lecture
- Flag notecards
- Determine which person/s can access study notes

Professors will have the following abilities:

- Check number of users
- See notes created for a class
- Verify notes/take down notes

- Flag users
- See email/name of users

Part 2: Your App in Context

MARKET COMPARISON AND APP RATIONALE

The rise of knowledge bases has led to note taking apps to start and as technology continues to advance the demand for managing, filtering and exploiting the most important information increases. Today, we have multiple means of taking notes like Word Documents, Google Docs and Drive, Dropbox, apps like Notion, Quizlet, etc. Note-taking has applications not only in schools, but in businesses, governments etc., and the creation of computers has made these note-taking technologies thrive and advance repeatedly over time.

There are several apps, websites and products that offer similar functionality to my app. Examples of this include Quizlet, Evernote, Notion, CourseHero, etc. that allow students to collaborate on notes and create study materials. Below are a few examples of other comparable apps.

- Quizlet allows the users to create flashcards of most important content, and allows them to take exams and grade themselves. This app allows students to do work individually. On the flipside, this app motivates people to enroll in a subscription plan and makes the rigor of tests dependent on whether or not they are in the plan. You can learn, test, and match using your created flashcards.
- Evernote allows students and people to create notes on their PC, share their notes with someone else, access notes from any electronic device like a mobile phone, or a laptop. You can also record a live lecture using this app; some of the disadvantages include the fact that it is costly, and it doesn't support collaboration with other users. It forces users to have a premium plan where they pay even more to be able to do many things with their notes.
- Coursehero allows users to access homework assignments, textbook questions, old exams, class notes, as well as study guides. They can share their files and brainstorm. On the other hand, its free account provides users with limited functionality. It also supports tutors, but they get paid less.
- Notion is an app that allows people to take notes and manage projects. The general app layout consists of pages that can be interlinked or nested. It allows you to organize the pages whenever you want. The drawbacks include the pricing.

Our app is specific to students which allows them to easily find the courses their school provides and information related to the classes they are taking. Our app would also be free and have no advertisements, making it both financially and aesthetically better than our competitor's products. Our approach would be different in that we will collect but not sell any of the data our users provide us. Our different approach includes creating interconnected, school-specific communities that allow students to upload notes and related materials that can be seen by other students. Professors would be able to work alongside moderators in order to prevent cheating and misinformation for the classes they teach. Professors would verify the classes they teach in order to prevent their misuse of our product while students can be verified by their email address alone. Our team is interested in developing this type of app because it would be beneficial to both students and professors in its accessibility, range of information, and adaptability.

GETTING DATA AND INTEGRATING WITH OTHER SYSTEMS

- The records will be created by the users when they register for the app (categorizing them as a student or professor, profile picture, email, folders).
    - We will collect which classes the professors are teaching and then verify them
    - Students/professors will need to verify their status as active students or professors
    - Students would create an account with their email and a password, and we would offer 2FA (which would require more information from the user, but it's on an opt in basis)
    - They can choose a username to go by within the app, but professors must use their names (once the system recognizes the email address is a professor, it will access their name from the organizational email service of the university).
        - Professors can see what email is connected to what username in order to take action when cheating is present
- Validation data will be obtained by cross-checking with data from existing information systems by checking to see if the .edu email exists and is functional in Gmail to ensure that they are a student at the institution they claim to be
- We'd want to use an email verification API, like Hunter or Abstract API, to check.
- For data created per each notecard, information like when it was created, who created it, and its contents will be generated when the notecard is generated
    - Things like whether it's public or private, the classes/decks/folders it's a part of, and more "editable" records will be autoset to no classes/decks/folders and private until the user decides to change it otherwise.
    - Records like whether a card has been verified or flagged will also be generated when someone takes action on the card; otherwise it will remain unverified be default

This app would interact with the organizational email service of the user in order to authenticate that they are a student or professor of an institution. To increase the security of the

system we can also use a third party app to check the status of students, like how Amazon Student Prime checks for student status by submitting a tuition receipt or student ID. Lastly, to enhance security, we would also work with a 2FA app like Duo so students sign in using a push code using their phone or other device. Apart from security, our app would require a third party cloud provider to store all the notes which can be in the form of working with Amazon Web Services. Users would need to be able to store their notes and have the ability to access the notes online through the cloud. We might also use an AI to remove cards with personal information, profanity, and slurs from the notes

SOCIAL IMPLICATIONS

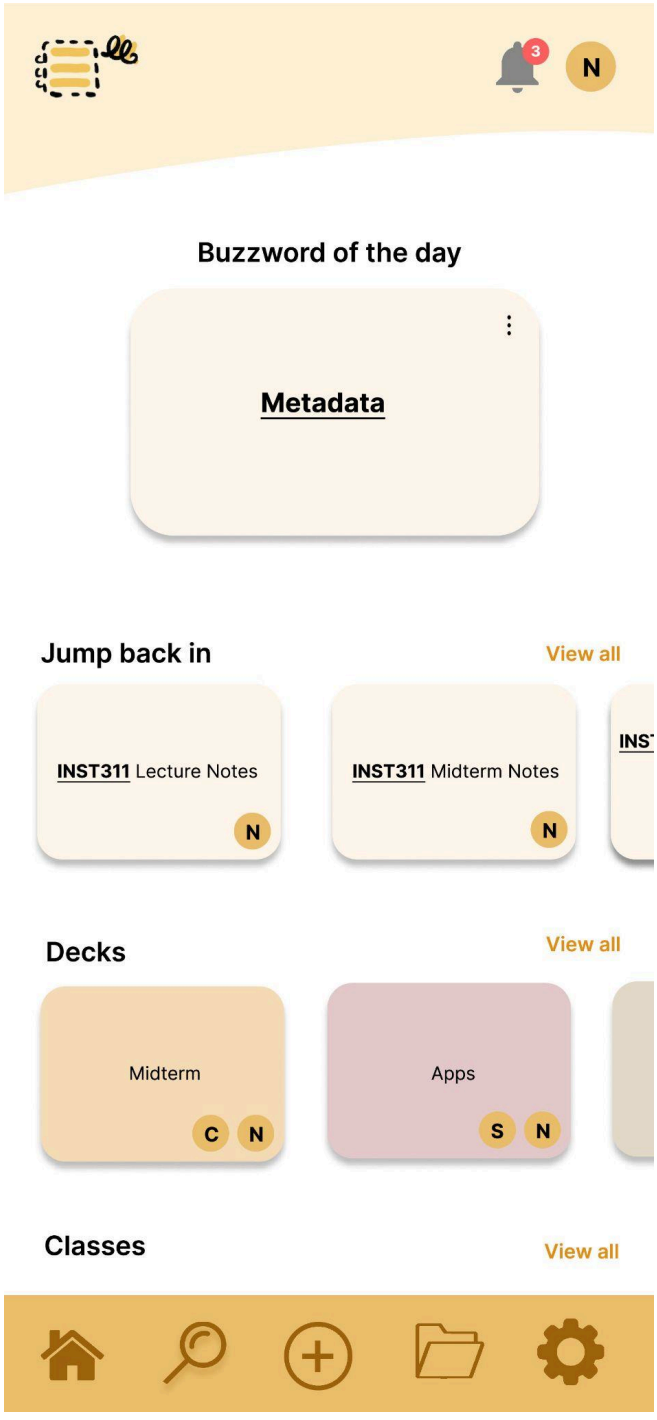
The risks include that some students may end up studying incorrect notes/information. In some cases, a user may include information that is false in their notes or study set. If the proper verification method is not set in place, the misinformation on the user's notes may go unnoticed and harm other users' study progress. With this in mind, we might also put into place a private/public note link system like Google Docs, where you can set the link to view only, edit only, etc., and we have implemented a verification method where professors can check notes that have been flagged by students and take them down. Secondly, another risk is that some users may post flashcards of exams they have taken in class. Future users who may use the app may use these flashcards to cheat. We can mitigate this by allowing professors of each course to become moderators and check the content to ensure their exam security is not being compromised. Apart from the risks, students benefit by having more resources to study from. They are able to personalize their study methods and collaborate from. They can edit, share and create as well as save notes as long as they are students of a university. This can be done with no fees or subscription.

Our app StudyBuzz complies with the Internet Privacy laws. We will inform all users of the privacy policy detailing how the app collects the user's data. Our app will be complying with the FTC Act that prevents businesses from engaging in any deceptive practices and makes sure that they protect user data and privacy. It will also comply with ECPA, which prevents any unauthorized interception of information. On the other hand, our app may violate school honor codes and academic integrity of certain institutions when students post their exam notes to the app.

Part 3: Prototype screen mockups

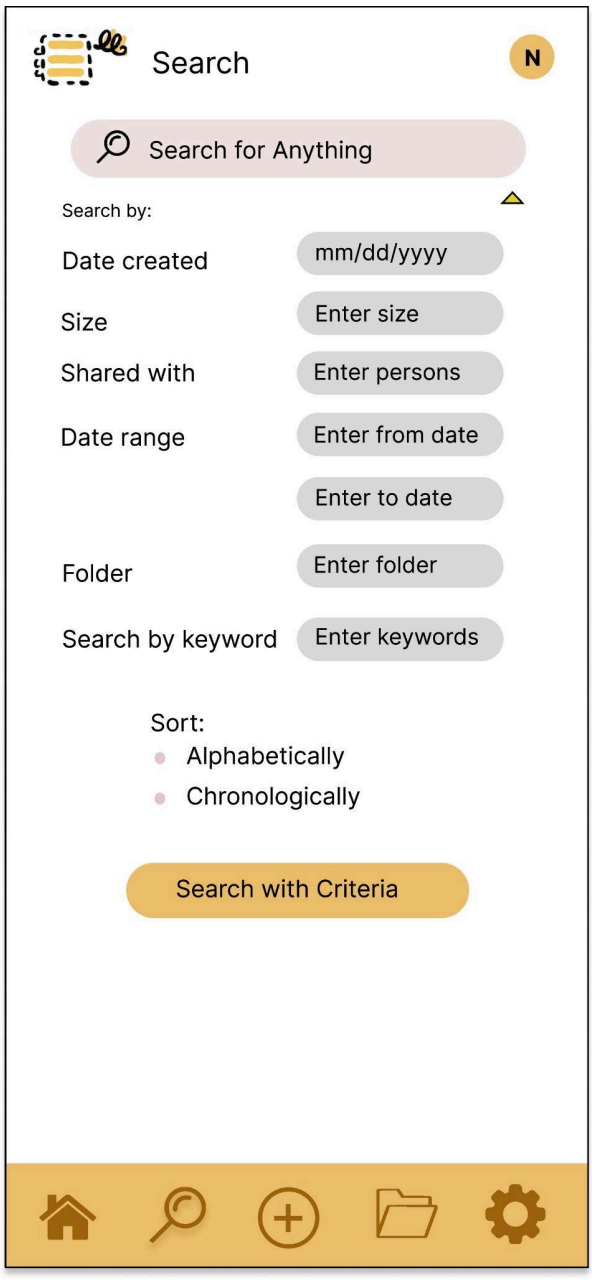
Getting Started

- This is the “Getting Started” page, where the user can see the cards and documents they were working on recently.



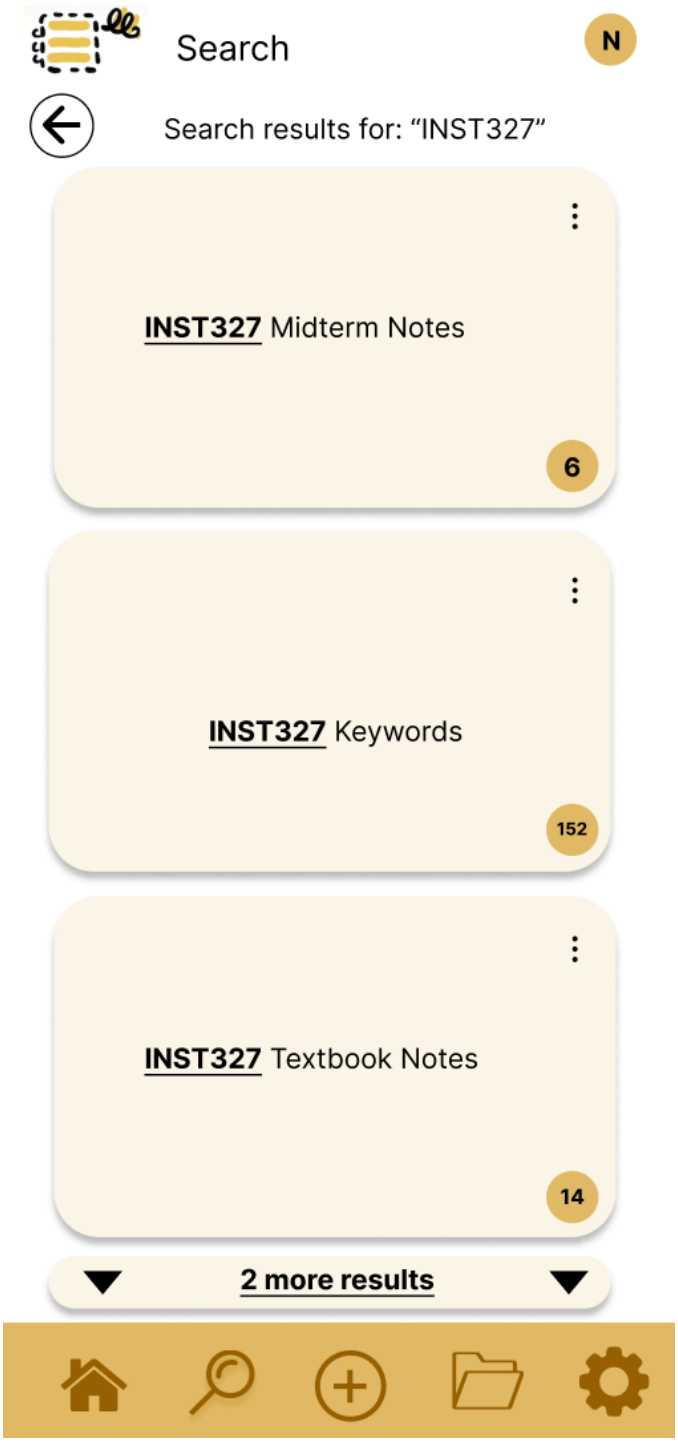
Searching, Browsing and Filtering

- This is the page that allows the user to search in their internal app storage any documents or notecards by a certain criteria if provided by the user.
    - Users can filter by name, date created, size of file, the people file is shared with, the dates when the document was edited, any folder it belonged to and lastly by certain keywords in the notecard or document.
    - The user can sort their results either alphabetically or chronologically.



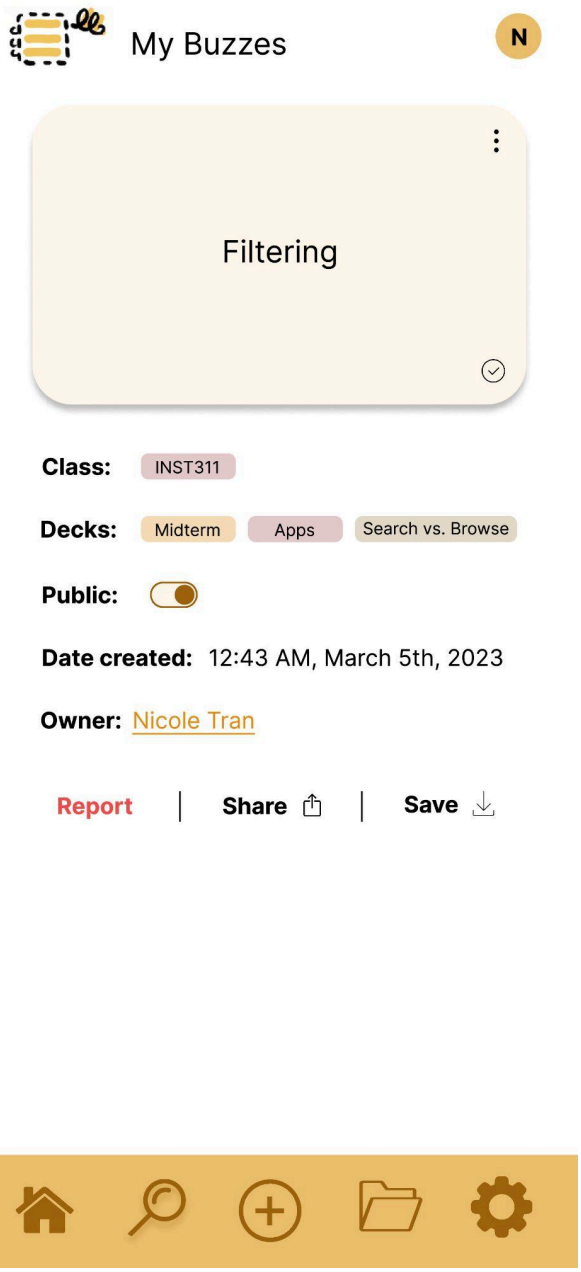
Search Results

- This page displays results for a search “INST327.” Lists all results that contain the searched term in them.



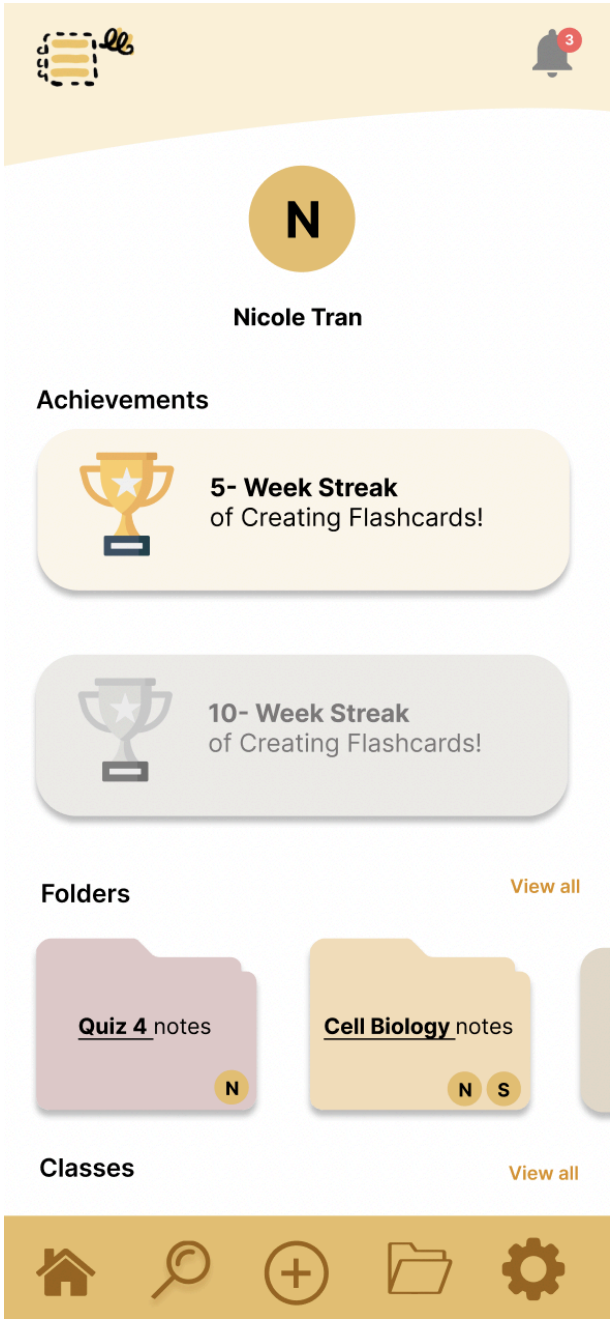
Detailed Item Information

- This page shows the detailed information about a notecard.
- In this case, the notecard “Filtering” belongs to 3 decks: Midterm, Apps, Search vs. Browse. The class under which the notecard falls is INST311.



Profile

- This page contains all information about the user.
- You can change your profile picture, by tapping your icon
- You can also see the achievements you have done.
- This page shows the documents and notecards the user has currently worked on, along with the folders where the user worked.



Part 4: Metadata Schema

Item Type 1: Notecard

Name of Property	Description of property	Example Value
Keyword	Can be a single word or question.	“Filtering”
Content (back of the card)	Can be a definition, bullet point, answer or response.	“Takes an existing full list, and removes items based on criteria that match/don't match.”
Creation date	The date and time the card was created	March 5th, 2023 12:43 AM
Owner	The person who created and owns the card	Matthew Manik
Deck	Deck is the name of the collection of cards to which a card belongs to	Midterm, Apps, Search vs. Browse
Classes	The Classes for which a note card pertains to	INST311
Verified	Whether the card has been cited/verified by the professor to be true (can be either Verified, Unverified, or Flagged)	Verified
Public	Whether the card is public or private (boolean value)	True

Item Type 2: User

Name of Property	Description of property	Example Value
Name	The name of the individual	John Doe
Achievements	The various studying achievements a user completes	One Week Streak of Creating Notecards!
Profile Picture	An icon or image to represent the user	
Email	The accurate email for a person	john.doe2@terpmail.umd.edu
Phone Number	A person's phone number, used for two factor authentication	111-222-3333
A single note card	One note card that has both keywords on one side and detailed information on the other side.	Boolean Keywords True, False, And, Or, Not
Folder	The folder collection consists of decks and word processing documents.	Midterm, Apps, Study Guide
Documents	The list of documents owned by the user	INST311 Lecture Notes, INST314 Lecture notes, etc.
Status	The occupation of user	Professor or Student

Item Type 3: Folder

Name of Property	Description of property	Example Value
Name of Folder	This is an identifier for a collection of notes that encompass a single category	Midterm, Apps, Study Guide
Collaborators	This helps the user identify who all has been working on the folder	John Doe, Matthew Manik
List of files	This is a list of decks and documents that are stored in the deck	INST311 Lecture 2 Notes, INST311 Lecture 3 Notes, etc.

Item Type 4: Classes

Name of Property	Description of property	Example Value
Name of class	The coded name of a class that's listed on a transcript	INST311, INST327, etc.
Notes	The notes for a certain class	INST311 Lecture notes
Number of Users enrolled	The quantity of students that provide notes for the class and are enrolled in the class	35
Professor	The instructor for a specific class	E.g. John Doe

Item Type 5: Document

Name of Property	Description of property	Example Value
Name of document	This is the name of the uploaded file, it can be in the format of word doc. or pdf.	INST 311 Lecture Notes
Document file	This is the file that can be in the format of word doc. or pdf.	INST_311_lecture_notes.docx
Upload Date	This is the date that the user uploads the document file	Uploaded on March 17th 2023
Owner	This is the name of the owner who uploaded the document file	Matthew Manik

Component 2: Detailed Property Information Tables

Property Name:		**Keyword**
Item Type		**Notecard**
How will this property be encoded? **Select one of these three rows** to fill out:	Data Type	*String*
	Controlled Vocabulary	
	Embedded Object	
Mandatory property? (yes/no)		Yes
Sorting property? (yes/no)		No
Filtering property? (yes/no)		Yes

Property Name		**Content**
Item Type		**Notecard**
How will this property be encoded? **Select one of these three rows** to fill out:	Data Type	*String*
	Controlled Vocabulary	
	Embedded Object	
Mandatory property? (yes/no)		Yes
Sorting property? (yes/no)		No
Filtering property? (yes/no)		Yes

Property Name		**Creation Date**
Item Type		**Notecard**
How will this property be encoded? **Select one of these three rows** to fill out:	Data Type	
	Controlled Vocabulary	*https://www.loc.gov/standards/datetime/*
	Embedded Object	
Mandatory property? (yes/no)		Yes
Sorting property? (yes/no)		Yes
Filtering property? (yes/no)		Yes

Property Name		**Owner**
Item Type		**Notecard**
How will this property be encoded? **Select one of these three rows** to fill out:	Data Type	*String*
	Controlled Vocabulary	
	Embedded Object	
Mandatory property? (yes/no)		Yes
Sorting property? (yes/no)		No
Filtering property? (yes/no)		Yes

Property Name		**Decks**
Item Type		**Notecard**
How will this property be encoded? **Select one of these three rows** to fill out:	Data Type	*List of strings*
	Controlled Vocabulary	
	Embedded Object	
Mandatory property? (yes/no)		Yes
Sorting property? (yes/no)		Yes
Filtering property? (yes/no)		Yes

Property Name	**Classes**
Item Type	**Notecard**

How will this property be encoded? **Select one of these three rows** to fill out:	Data Type	*List of strings*
	Controlled Vocabulary	
	Embedded Object	
Mandatory property? (yes/no)		Yes
Sorting property? (yes/no)		Yes
Filtering property? (yes/no)		Yes

Property Name		**Verified**
Item Type		**Notecard**
How will this property be encoded? **Select one of these three rows** to fill out:	Data Type	*Boolean (True or False)*
	Controlled Vocabulary	
	Embedded Object	
Mandatory property? (yes/no)		Yes
Sorting property? (yes/no)		No
Filtering property? (yes/no)		Yes

Property Name		**Public**
Item Type		**Notecard**
How will this property be encoded? **Select one of these three rows** to fill out:	Data Type	*Boolean (True or False)*
	Controlled Vocabulary	
	Embedded Object	
Mandatory property? (yes/no)		Yes
Sorting property? (yes/no)		No
Filtering property? (yes/no)		Yes

Property Name		**Name**
Item Type		**User**
How will this property be encoded? **Select one of these three rows** to fill out:	Data Type	*String*
	Controlled Vocabulary	
	Embedded Object	
Mandatory property? (yes/no)		Yes
Sorting property? (yes/no)		No
Filtering property? (yes/no)		No

Property Name		**Achievements**
Item Type		**User**
How will this property be encoded? **Select one**	Data Type	*String*
	Controlled Vocabulary	
	Embedded Object	

of these three rows to fill out:		
Mandatory property? (yes/no)		No
Sorting property? (yes/no)		No
Filtering property? (yes/no)		No

Property Name		**Profile Picture**
Item Type		**User**
How will this property be encoded? **Select one of these three rows** to fill out:	Data Type	*Image*
	Controlled Vocabulary	
	Embedded Object	
Mandatory property? (yes/no)		Yes
Sorting property? (yes/no)		No
Filtering property? (yes/no)		No

Property Name		**Email**
Item Type		**User**
How will this property be encoded? **Select one of these three rows** to fill out:	Data Type	*String*
	Controlled Vocabulary	
	Embedded Object	
Mandatory property? (yes/no)		Yes
Sorting property? (yes/no)		No
Filtering property? (yes/no)		No

Property Name		**Phone number**
Item Type		**User**
How will this property be encoded? **Select one of these three rows** to fill out:	Data Type	*Positive Integer (9 digits)*
	Controlled Vocabulary	
	Embedded Object	
Mandatory property? (yes/no)		Yes
Sorting property? (yes/no)		No
Filtering property? (yes/no)		No

Property Name		**Note card**
Item Type		**User**
How will this property be encoded? **Select one of these three rows** to fill out:	Data Type	
	Controlled Vocabulary	
	Embedded Object	*Flashcard Object with both keyword and content*
Mandatory property? (yes/no)		Yes
Sorting property? (yes/no)		Yes
Filtering property? (yes/no)		Yes

Property Name		**Folder**
Item Type		**User**
How will this property be encoded? **Select one of these three rows** to fill out:	Data Type	*Array*
	Controlled Vocabulary	
	Embedded Object	
Mandatory property? (yes/no)		Yes
Sorting property? (yes/no)		Yes
Filtering property? (yes/no)		Yes

Property Name		**Documents**
Item Type		**User**
How will this property be encoded? **Select one of these three rows** to fill out:	Data Type	*Array*
	Controlled Vocabulary	
	Embedded Object	
Mandatory property? (yes/no)		Yes
Sorting property? (yes/no)		Yes
Filtering property? (yes/no)		Yes

Property Name		**Status**
Item Type		**User**
How will this property be encoded? **Select one of these three rows** to fill out:	Data Type	*String*
	Controlled Vocabulary	
	Embedded Object	
Mandatory property? (yes/no)		Yes
Sorting property? (yes/no)		Yes
Filtering property? (yes/no)		Yes

Property Name	**Name of folder**
Item Type	**Folder**

How will this property be encoded? **Select one of these three rows** to fill out:	Data Type	*String*
	Controlled Vocabulary	
	Embedded Object	
Mandatory property? (yes/no)		Yes
Sorting property? (yes/no)		Yes
Filtering property? (yes/no)		Yes

Property Name		**Collaborators**
Item Type		**Folder**
How will this property be encoded? **Select one of these three rows** to fill out:	Data Type	*String*
	Controlled Vocabulary	
	Embedded Object	
Mandatory property? (yes/no)		Yes
Sorting property? (yes/no)		No
Filtering property? (yes/no)		Yes

Property Name		**List of files**
Item Type		**Folder**
How will this property be encoded? **Select one of these three rows** to fill out:	Data Type	*Array*
	Controlled Vocabulary	
	Embedded Object	
Mandatory property? (yes/no)		Yes
Sorting property? (yes/no)		No
Filtering property? (yes/no)		Yes

Property Name		**Name of Class**
Item Type		**Classes**
How will this property be encoded? **Select one of these three rows** to fill out:	Data Type	*String*
	Controlled Vocabulary	
	Embedded Object	
Mandatory property? (yes/no)		Yes
Sorting property? (yes/no)		No
Filtering property? (yes/no)		No

Property Name		**Notes**
Item Type		**Classes**
How will this property be encoded? **Select one**	Data Type	
	Controlled Vocabulary	

of these three rows to fill out:	Embedded Object	*Document or PDF file*
Mandatory property? (yes/no)		Yes
Sorting property? (yes/no)		Yes
Filtering property? (yes/no)		Yes

Property Name		**Number of enrolled users**
Item Type		**Classes**
How will this property be encoded? **Select one of these three rows** to fill out:	Data Type	*Integer*
	Controlled Vocabulary	
	Embedded Object	
Mandatory property? (yes/no)		Yes
Sorting property? (yes/no)		No
Filtering property? (yes/no)		No

Property Name		**Professor(s)**
Item Type		**Classes**
How will this property be encoded? **Select one of these three rows** to fill out:	Data Type	*String*
	Controlled Vocabulary	
	Embedded Object	
Mandatory property? (yes/no)		Yes
Sorting property? (yes/no)		No
Filtering property? (yes/no)		No

Property Name		**Name of document**
Item Type		**Document**
How will this property be encoded? **Select one of these three rows** to fill out:	Data Type	*String*
	Controlled Vocabulary	
	Embedded Object	
Mandatory property? (yes/no)		Yes
Sorting property? (yes/no)		Yes
Filtering property? (yes/no)		Yes

Property Name		**Document file**
Item Type		**Document**
How will this property be encoded? **Select one of these three rows** to fill out:	Data Type	
	Controlled Vocabulary	
	Embedded Object	*Document or Pdf*
Mandatory property? (yes/no)		No

Sorting property? (yes/no)	Yes
Filtering property? (yes/no)	Yes

Property Name		**Upload date**
Item Type		**Document**
How will this property be encoded? **Select one of these three rows** to fill out:	Data Type	
	Controlled Vocabulary	*https://www.loc.gov/standards/datetime/*
	Embedded Object	
Mandatory property? (yes/no)		Yes
Sorting property? (yes/no)		Yes
Filtering property? (yes/no)		Yes

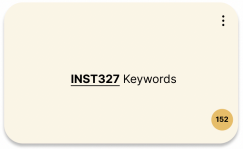
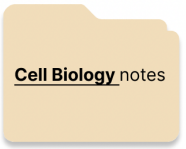
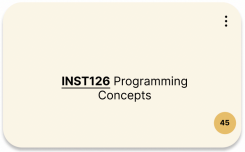
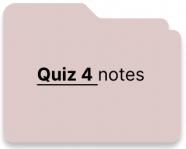
Property Name		**Owner**
Item Type		**Document**
How will this property be encoded? **Select one of these three rows** to fill out:	Data Type	*String*
	Controlled Vocabulary	
	Embedded Object	
Mandatory property? (yes/no)		Yes
Sorting property? (yes/no)		No
Filtering property? (yes/no)		Yes

Part 5: Metadata Records

Item Type 1: Notecard

Keyword	Content	Creation Date	Owner	Deck	Classes	Verified	Public
“Mitochondria”	“Mitochondria are the powerhouse of the cell”	2023-04-10T23:20:30	Steven Smith	Biology, Ecology	BSCI170, BSCI160	Unverified	True
“What’s the capital of the United States”	“Washington, D.C.”	2021-02-15T23:03:34	Matthew Manik	Capitals	GVPT170	Verified	False
“Chloroplast”	“The powerhouse of the cell”	2022-07-15T26:03:34	Jean Thomas	Photosynthesis	BSCI160	Flagged	True
“When do you use 怀孕 versus 孕育”	“怀孕 is only with human pregnancy”	2023-05-05T16:03:34	Steven Smith	Lesson 9, Chin Midterm	CHIN402	Unverified	False
“What are two differences between plant and animal cells”	“Plant cells have cell wall, one large vacuole, and chloroplasts”	2021-02-15T24:03:34	John Doe	Quiz 3, Ecology, Biology	BSCI170	Verified	True

Item Type 2: User

Name	Achievements	Profile Picture	Email	Phone Number	Notecard	Folders	Documents	Status
Mark Smith	Congrats! 1 week of creating notecards!	M	mark_123 @umd.edu	(204)-319-5678			INST_327_lecturenotes.docx	Student
Sarah Snyder	Congrats on 2 weeks of studying your created notecards!	S	sarah_345 @umd.edu	(240)-589-9811			INST126_lecture notes.docx	Student

Item Type 3: Folder

Name of Folder	Collaborators	List of Files
Midterm	Mark Smith, Steven Smith	INST311 Lecture 4 notes, Chapter 3
Study Guide	Sarah Snyder, Matthew Manik	INST327 Lecture 7 note, Chapter 7, Video 9, Video 10

Item Type 4: Class

Name of Class	Notes	Number of Users enrolled	Professor
INST314	Lecture_1.docx, Lecture_2.docx, Lecture_3.docx	35	Babak Fotouhi
INST311	InfoOrg.docx, SEO.docx	125	Ryan O'Grady

Item Type 5: Document

Name of document	Document File	Upload Date	Owner
INST311 Lecture Notes	INST_311_lecture_notes.docx	Uploaded on March 14th 2023	Matthew Manik
INST327 Midterm 2 Study Guide	INST327_Midterm_2_Study_Guide.pdf	Uploaded on April 7th 2023	Jean Thomas