Final Presentation: Being Human in STEM
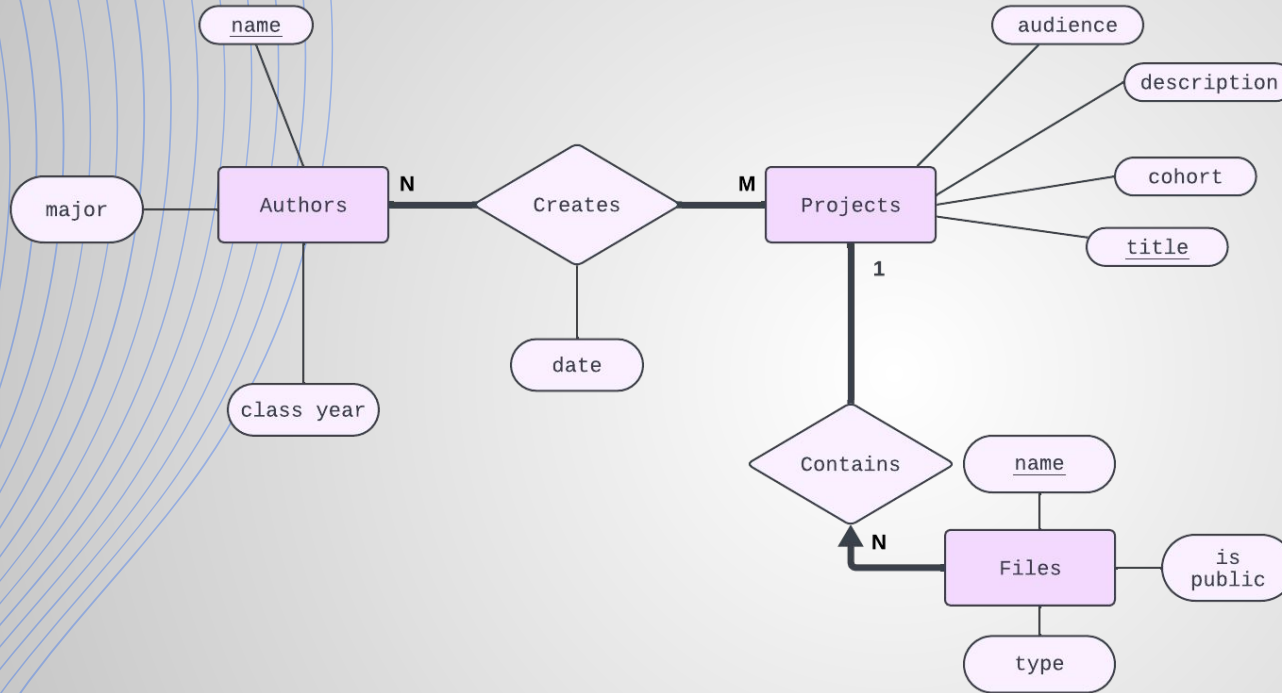
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Client: Professor Jaswal

Motivation

- **Centralized Information**: We developed a centralized database for the HSTEM initiative, storing current and previous student projects, creation dates, and how to access them.

- **Data Management:** The HSTEM database replaces the data scattered across multiple platforms with a single, organized system, simplifying CRUD operations and improving data accessibility.

- **Tracking:** The database keeps track of Amherst student cohorts and workshop details, offering insights into the initiative's impact over time for users.

- **Importance of the Initiative:** Our contribution to the HSTEM initiative supports its mission of tackling homogeneity in the STEM field by promoting more inclusion and diversity in STEM.
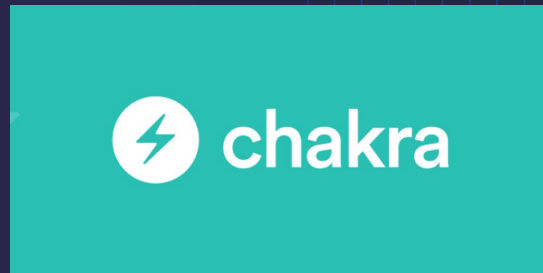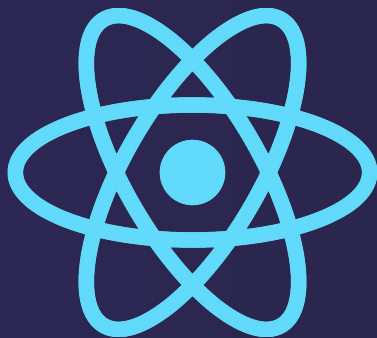
Relational Model

```sql
CREATE TABLE Authors (
    name CHAR(30),   # author name
    major CHAR(30),
    class_year INTEGER,
    PRIMARY KEY (name)
);

CREATE TABLE Projects (
    title CHAR(100),
    description CHAR(500),
    audience CHAR(100)
    cohort CHAR(10)
    PRIMARY KEY (title)
);
```
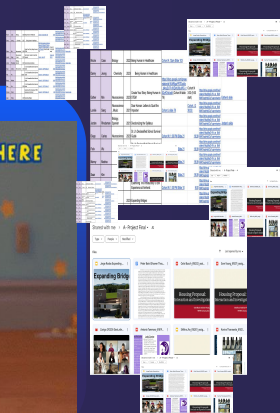
```sql
CREATE TABLE Files (
    title CHAR(100) NOT NULL,
    name CHAR(100),   # file name
    is_public BOOLEAN,
    type CHAR(30),
    PRIMARY KEY (name),
    FOREIGN KEY (title)
        REFERENCES Projects,
        ON DELETE NO ACTION
);
```

```sql
CREATE TABLE Creates (
    names CHAR(30),     # author name
    title CHAR(100),  # project title
    date CHAR(10),
    PRIMARY KEY(name, title),
    FOREIGN KEY (name)
        REFERENCES Authors,
    FOREIGN KEY (title)
        REFERENCES Projects
);
```

Challenges

Scattered data across multiple drives and folders

Unavailability of client for majority of the semester due to COVID-19

Lack of user permissions when accessing data

Demo!

APIs

Project List / File List

File List

OPTIONS   GET

GET /api/files/

```
HTTP 200 OK
Allow: GET, HEAD, OPTIONS
Content-Type: application/json
Vary: Accept

[
    {
        "name": "Jordan Rhodeman",
        "title": "Decolonizing the Syllabus",
        "is_public": true,
        "type": "other",
        "file": "https://drive.google.com/file/d/1_ZdfmzhuG-GvWeomP8bMoOlmdfLr-fsW/preview"
    },
    {
        "name": "Diego Carias",
        "title": "Dr. J's Declassified School Survival Guide",
        "is_public": true,
        "type": "other",
        "file": "https://drive.google.com/file/d/19R_a5Etm5R1dAJ5C4yJAtWSlLb13G7t-/preview"
    },
    {
        "name": "Felix Wu",
        "title": "Dr. J's Declassified School Survival Guide",
        "is_public": true,
        "type": "other",
        "file": "https://drive.google.com/file/d/17guBFJCifd3nSGcCD20AfqT5_cX3ual8/preview"
    },
    {
        "name": "Manny Medina",
        "title": "Dr. J's Declassified School Survival Guide",
        "is_public": true,
        "type": "other",
```

Project List / Project List

Project List

OPTIONS   GET

GET /api/projects/

```
HTTP 200 OK
Allow: GET, HEAD, OPTIONS
Content-Type: application/json
Vary: Accept

[
    {
        "title": "Project Title",
        "description": "Comments",
        "cohort": "HSTEM iteration",
        "audience": "students"
    },
    {
        "title": "\"Like, do it\" (Office hours)",
        "description": "Short video encouraging students to attend Office hours and empathetically addressing common reasons students do not",
        "cohort": "21J",
        "audience": "students"
    },
    {
        "title": "An Anthology of Advice",
        "description": "A collection of advice on different aspects of academics and social life at Amherst from upperclassmen.",
        "cohort": "21J",
        "audience": "students"
    },
    {
        "title": "\"We need to talk\"",
        "description": "A zine project that acknowledges the systemic, institutional, and personal biases that exist in STEM. Thomas' project also proposes r
        "cohort": "21J",
        "audience": "students"
    },
    {
        "title": "A Page from my HSTEM Journal",
        "description": "Zine project where Ava shares her HSTEM story and highlight themes that stood out to her in the class, and how they connect to her HS
        "cohort": "21J"
    }
```

[{"title":"Project Title","description":"Comments","cohort":"HSTEM iteration","audience":"students"},{"title":"\"Like, do it\" (Office hours)","description":"Short video encouraging students to attend Office hours and empathetically addressing common reasons students do not","cohort":"21J","audience":"students"},{"title":"An Anthology of Advice","description":"A collection of advice on different aspects of academics and social life at Amherst from upperclassmen.","cohort":"21J","audience":"students"},{"title":"\"We need to talk\"","description":"A zine project that acknowledges the systemic, institutional, and personal biases that exist in STEM. Thomas' project also proposes means of increasing intersections between STEM and Humanities. ","cohort":"21J","audience":"students"},{"title":"A Page from my HSTEM Journal","description":"Zine project where Ava shares her HSTEM story and highlight themes that stood out to her in the class, and how they connect to her HSTEM story.","cohort":"21J","audience":"students"},{"title":"Fighting Racial Stereotypes in STEM","description":"A zine project that summarizes McGee's article and provides a guide that informs people of the stereotypes to avoid for Black and Asian students in STEM.","cohort":"21J","audience":"students"},{"title":"Amherst Club Proposal: Displaying a Book's Heart on its Sleeve","description":"A proposal for a club that summarizes implicit biases in STEM books in Frost Library, such as racism, western-centric ideas, and anti-indigenous ideas.","cohort":"21J","audience":"students"},{"title":"Being Human in Healthcare","description":"A workshop that exposes EMTs to the biases that exist in healthcare and ways in which they can holistically approach patients and be helpful to them.","cohort":"21J","audience":"students"},{"title":"Create Your Story: Being Human in STEM ","description":"Inspired by readings like Anthony Jack's and McGee's, and the HSTEM story assignment, Esther designed a workshop that encourages incoming students to reflect on their HSTEM stories and Create their story. ","cohort":"21J","audience":"students"},{"title":"Dear Human: Letters to Quell the Imposter","description":"A series of letters written on imposter syndrome, and reflections on how imposter syndrome affects the productivity and perception of people in elite spaces like Amherst College.","cohort":"21J","audience":"students"},{"title":"Decolonizing the Syllabus","description":"Jordan acknowledges the bias and racism that exists in STEM knowledge production, and encourages STEM departments to include courses that address the issue of diversity and inclusion.","cohort":"21J","audience":"students"},{"title":"FLI Mentorship Pods","description":"","cohort":"21J","audience":"students"},{"title":"Dr. J's Declassified School Survival Guide","description":"A zine project that highlights resources on campus to equip incoming students to thrive at Amherst. Some of the highlighted resources are the counseling center, office hours, research funding like SURF+, Gregory Call, Lobe center, and non-academic resources like TYPO, RSOs, and Resource Centers","cohort":"21J","audience":"students"},{"title":"Examining The Introductory STEM Experience at Amherst","description":"A sociological study of students' experiences in STEM at Amherst College. Retroactively determines the extent of PEER vs non-PEER disparity in STEM majors at Amherst. Prospectively investigates how students' experience in STEM affects their desire to pursue STEM in the future.","cohort":"21J","audience":"students"},{"title":"Expanding Bridges","description":"A proposal to introduce book clubs and speakers that address issues around Identity and FLI in order to prepare students to feel more comfortable to thrive in college.","cohort":"21J","audience":"students"},{"title":"Foundations for STEM Success","description":"A course that nurtures incoming first year students to gain skills necessary to excel in STEM, such as problem solving skills and group skills, earlier in their time at Amherst. ","cohort":"21J","audience":"students"},{"title":"GeoLatin@s of Amherst College","description":"A panel conversation with GeoLatino Amherst alumni to provide guidance on their research adventures and encourage other students to continue in the field.","cohort":"21J","audience":"students"},{"title":"Grades Deserve an F","description":"Maria reflects on the impact grades have on student learning, identity and self-worth. She proposes a system where grades are either not included, or where grading is done less harshly.","cohort":"21J","audience":"students"},{"title":"Heroizations Preventing Change","description":"An analysis on how the heroization of objectivity has affected how science is perceived, the dangers of this heroization, and steps to be taken to make science more inclusive. ","cohort":"21J","audience":"students"},{"title":"Housing Proposal: Socials to Sports Teams","description":"Shikha's part of the project explores how the social scene within dormitories can be reshaped such that there is less divide within the student population.","cohort":"21J","audience":"students"},{"title":"Housing Proposal! Socials to Sports Teams","description":"Ethan suggests a novel room allocation process that ensures all students are satisfied with the assignment. He also proposes intentional randomization to ensure diversity in different floors.","cohort":"21J","audience":"students"}]