Project Step 7 Portfolio Assignment

Team Members: Caitlyn Jameson, Yuxing Deng

Project Group #: 33

Project Title: Superhero School

URL

http://flip1.engr.oregonstate.edu:3026/

Test browser: Google Chrome

Executive Summary

From Step 2 peer reviews, Jessica noticed that our "Employees" entity was described as housing information for teachers and staff of the school, but that one of our attributes in that entity listed "subject" as required. To fix this error, we will change the attribute to "area". An "area" attribute would allow us to list if a teacher is in the Chemistry department, the maintenance department, or the administration department.

Adriane suggested that we could add an additional entity called "superpowers". A student and/or teacher could have shared powers, or multiple powers. We have decided to create another entity called "Superpowers" that would be a table to hold the information about the superpowers known in the school. We've decided to make this a 1:M relationship, in which a superpower can be associated with many students or employees. But we have also limited it to one superpower per person. Therefore a student or employee will not have multiple powers, but they may share the same powers.

From Step 3 peer reviews, Michele had a concern about the scalability of our project should there be multiple students and missions. Our previous implementation uses a list of checkboxes, but should that list grow, it would be very long and not be an efficient solution. We have determined to adjust our handling of our M:M relationships by adding an additional form that would add one student to one mission (and the same for the teams and employees).

From Step 3 final our grader noted us that we only need to include 1 Delete and 1 Update functionality to our website. We decided to remove Update functionality for Missions and Delete functionality for Superpowers on our HTML pages. Missions don't need an update, as it should record previous data about a 'mission assignment' that could be looked up later. For Teams, a team may be around, but have different members throughout the year. In our current setup, a Team would only display a current list of it's employee members. For Superpowers, a person would probably never want to delete information about a known superpower.

CS 340 TEAM EVALUATION FORM
DECEMBER 6, 2020

RATE YOUR TEAMS PERFORMANCE USING THE SCALE BELOW.

1 = Strongly Disagree   2 = Disagree 3 = Agree   4 = Strongly Agree

GROUP NUMBER		
NAME OF GROUP TEAM MEMBERS:		
SCALE AND COMMENTS	RATING	ADDITIONAL COMMENTS
HOW PREPARED WAS YOUR TEAM? Research, reading, and assignment complete	4	
HOW RESPONSIVE & COMMUNICATIVE WERE YOU BOTH AS A TEAM? Responded to requests and assignment modifications needed. Initiated and responded appropriately via email, Slack etc.	4	
DID BOTH GROUP MEMBERS PARTICIPATE EQUALLY Contributed best academic ability	4	
DID YOU BOTH FOLLOW THE INITIAL TEAM CONTRACT? Were both team members both positive and productive?	4	

Are there any suggestions for improvement for your team and what are your goals moving forward?
(Better communication, follow the contract better, modify the initial team contract, more contribution, etc?)?

We are feeling good about the group communication and division of the work on the project.

Project Outline and Database Outline - Updated Version

Project Overview

Our database will be an implementation of a school for superheroes based on the characters from the Marvel Comic and Movie Universe. It will primarily be used by "Employees and Staff" of the school to look up information about the students and other staff members. The database will record personal information on the students and staff, in separated tables, and include attributes about their superpowers and abilities. The database will also house a table for missions students and employees have participated in to save the world and universe, as well as what teams the employees are affiliated with. The database will be an ideal size for a private school of about 30 students and 10 employees, with about 10 missions per year.

Entities to implement (member assigned)

1. Employees (Caitlyn)
2. Teams (Caitlyn)
3. Employees_Teams (Caitlyn)
4. Superpowers (Caitlyn)
5. Students (Yuxing)
6. Missions (Yuxing)
7. Students_Missions (Yuxing)

Database Outline

- **Students**
  - **Description:** Records the information of the students attending the school.
  - **Attributes:**
    - studentID: integer, auto_increment, unique, not NULL, PK
    - firstName: varchar, not NULL
    - lastName: varchar *(can be NULL)*
    - alias: varchar *(can be NULL)*
    - email: varchar, not NULL
    - GPA: decimal, not NULL
    - superpower: integer, unique, FK references to the superpowerID of Superpower entity
    - mentor: integer, unique, FK (employeeID)
  - **Relationships:**
    - a 1:M relationship between Employees and Students is implemented with mentor (employeeID) as a FK inside of Students
    - an M:M relationship between Students and Missions is implemented with an intersection table called Students_Missons
    - A 1:M between Superpowers and Students is implemented with a superpowerID as a FK inside of Students

- **Employees**
  - **Description:** Records the information of the teachers, staff of the school
  - **Attributes:**
    - employeeID: integer, auto_increment, unique, not NULL, PK
    - firstName: varchar, not NULL
    - lastName: varchar *(can be NULL)*
    - alias: varchar *(can be NULL)*
    - email: varchar, not NULL
    - position: varchar, not NULL
    - area: varchar, not NULL
    - superpower: integer, unique, FK references to the superpowerID of Superpower entity
    - home: varchar
  - **Relationships:**
    - a 1:M relationship between Employees and Students is implemented with mentor (employeeID) as a FK inside of Students
    - a 1:M relationship between Employees and and Missions is implemented with leader (employeeID) as a FK inside of Missions
    - an M:M relationship between Employees and Teams is implemented with an intersection table named Employees_Teams
    - A 1:M relationship between Superpowers and Employees is implemented with a superpowerID as a FK inside of Employees

- **Superpowers**
  - **Description:** Records the information of the superpowers held by the students and employees of the school
  - **Attributes:**
    - superpowerID: integer, auto_increment, unique, not NULL, PK
    - name: varchar, not NULL
    - level: integer, not NULL
  - **Relationships:**
    - A 1:M between Superpowers and Students is implemented with a superpowerID as a FK inside of Students
    - A 1:M relationship between Superpowers and Employees is implemented with a superpowerID as a FK inside of Employees

- **Teams**
  - **Description**: Records the information of teams heroes belonging to.
  - **Attributes:**
    - teamID: integer, auto_increment, unique, not NULL, PK
    - name: varchar, not NULL
    - headquartersLocation: varchar, not NULL
    - groupEmail: varchar, not NULL
  - **Relationship:**
    - an M:M relationship between Employees and Teams is implemented with an intersection table named Employees_Teams

- **Missions**
  - **Description:** Records the information on the missions assigned to the students and staff.
  - **Attributes:**
    - missionID: integer, auto_increment, unique, not NULL, PK
    - name: varchar, not NULL
    - leader: integer, unique, not NULL, FK (employeeID)
  - **Relationships:**
    - a 1:M relationship between Employees and and Missions is implemented with leader (employeeID) as a FK inside of Missions
    - an M:M relationship between Students and Missions is implemented with an intersection table called Students_Missons

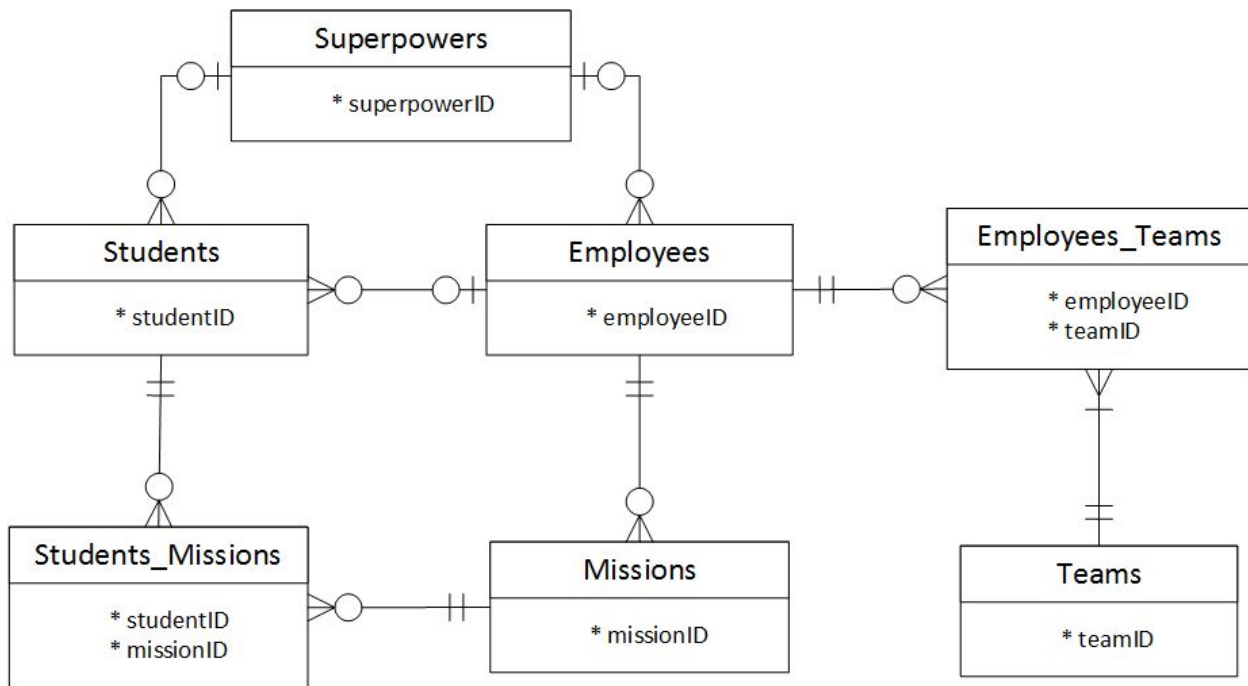**Intersection tables:**

- **Students_Missions**
  - **Description**: implements a M:M relationship between Students and Missions
  - **Attributes:**
    - studentID: integer, unique, not NULL, PK, FK
    - missionID: integer, unique, not NULL, PK, FK
  - **Relationships**:
    - a 1:M relationship between Students and Students_Missions is implemented with studentID as a FK inside of Students_Missions
    - a 1:M relationship between Missions and Students_Missions is implemented with missionID as a FK inside of Students_Missions
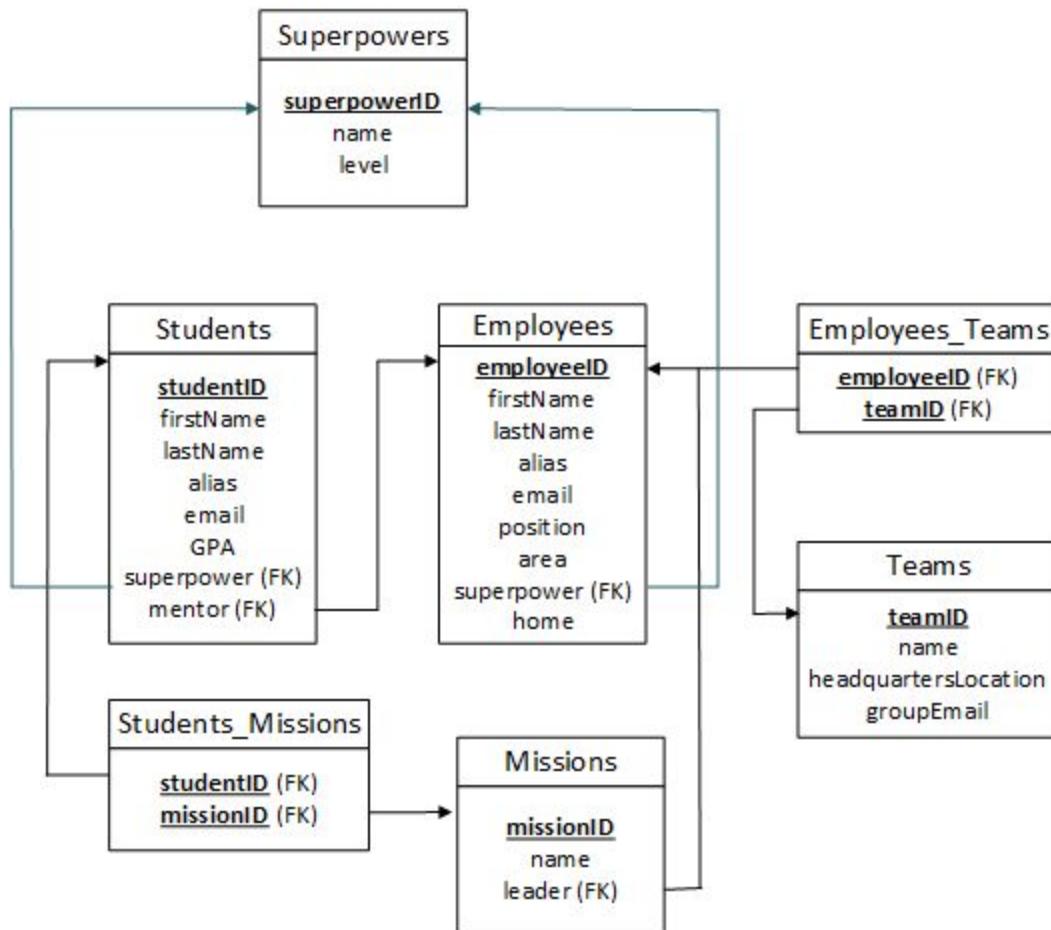
- **Employees_Teams**
  - **Description**: implements a M:M relationship between Employees and Teams
  - **Attributes:**
    - employeeID: integer, unique, not NULL, PK, FK
    - teamID: integer, unique, not NULL, PK, FK

- ○ **Relationships:**
  - ■ a 1:M relationship between Employees and Employees_Teams is implemented with employeeID as a FK inside of Employees_Teams
  - ■ a 1:M relationship between Teams and Employees_Teams is implemented with teamID as a FK inside of Employees_Teams

Entity-Relationship Diagram

Schema

UI Screenshots

READ Students / DELETE student / CREATE NEW student page

UPDATE student / FILTER Missions page

Superhero School   Home   Employees   Students   Superpowers   Missions   Teams

Abby Levine

* indicates required field

First name *	Abby
Last name	Levine
Alias	
Email *	a.levine@superhero-sch.edu
GPA *	3.62
Superpower	None
Mentor	Steve Rogers

Update

Missions

Armor Chase

Chitari Invasion

City Under Siege

Test Browser: Google Chrome

READ Employees / DELETE employee / CREATE NEW employee page

Superhero School   Home   Employees   Students   Superpowers   Missions   Teams

List of Employees

Steve Rogers	X
Susan Storm	X
Thor Odinson	X
Tony Stark	X

List a new employee

First Name
fname

Last Name *(Optional)*
lname

Alias *(Optional)*

Email
email@example.com

Position
Professor

Area
History Department

Superpower (optional)
None

Home

Create Employee

Test Browser: Google Chrome

UPDATE employee / FILTER Teams page

Superhero School   Home Employees Students Superpowers Missions Teams

Steve Rogers

* indicates required field

First name *	Steve
Last name	Rogers
Alias	Captian America
Email *	s.rogers@superher-sch.edu
Position *	professor
Area *	History
Superpower	Super Strength LEVEL 3
Home	Earth

Update

Team Affiliations

Fantastic Four

Guardians of the Galaxy

The Avengers

Test Browser: Google Chrome

READ Missions / DELETE mission / CREATE NEW mission
INSERT / DELETE student-mission (M:M) relationship
FILTER Students page

Superhero School   Home Employees Students Superpowers Missions Teams

Missions

Armor Chase	X
Chitari Invasion	X
City Under Siege	X
Starktech Outfits	X

Add a new mission

* indicates required field

Name *

Leader *

Steve Rogers

Create mission

Add a student to a mission

Mission: Armor Chase   Student: Abby Levine   Submit

List the students on a mission

Mission: Armor Chase   Submit

Chitari Invasion

Student list:

Abby Levine	X
Peter Parker	X

Test Browser: Google Chrome

READ a mission / FILTER Students
DELETE student-mission (M:M) relationship page

Superhero School   Home   Employees   Students   Superpowers   Missions   Teams

Mission: Starktech Outfits

Leader: Tony Stark

Student List

Angelica Jones	X
Bruno Carrelli	X
Jean Grey	X
Peter Parker	X

READ Teams / DELETE team / CREATE NEW team
INSERT / DELETE employee-team (M:M) relationship
FILTER Employees page

Superhero School   Home   Employees   Students   Superpowers   Missions   Teams

Teams

Fantastic Four	X
Guardians of the Galaxy	X
S.H.I.E.L.D.	X
The Avengers	X

Add a new team

* indicates required field

Name *

Headquarters *

Email *

Create team

Add an employee to a team

Team: Fantastic Four   Employee: Steve Rogers   Submit

List the employees of a team

Team: Fantastic Four   Submit

The Avengers
Members:

| Steve Rogers | X |
| Tony Stark | X |

st Browser: Google Chrome

READ a team / FILTER Employees
DELETE employee-team (M:M) relationship page

Superhero School   Home Employees Students Superpowers Missions Teams

Team: The Avengers

Headquarters	New York
Group Email	avengers@superhero-sch.edu

Team Members

Steve Rogers	X
Tony Stark	X

READ Superpowers / CREATE NEW superpower page

Superhero School   Home Employees Students Superpowers Missions Teams

List of Superpowers

Superpower	Level
Flight	1
Flight	2
Flight	3
Hightend Intelligence	1
Hightend Intelligence	2
Hightend Intelligence	3
Power of Thunder	3
Super Strength	1
Super Strength	2

est Browser: Google Chrome

List a new superpower

* indicates required field
Name *

Superpower Level *

1

Create Superpower