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TEAM MEMBERS
Lewis Cannalongo
Fraser Torning

APPLICATION URL
resin.cci.drexel.edu/~lrc74/scodb

PROJECT DESCRIPTION

Our team has created a reporting platform for a corporate scholarship management system. The platform allows stakeholders to view current scholarship and application statuses through on-demand query options.

The model requires students to provide information, including their high school, college, selected major, ethnicity, and geography. Students may then submit applications to scholarships for which they meet the criteria, although they are limited to applying to each scholarship only once. Students may decline to provide any particular demographic data they choose besides some mandatory categories, but this will restrict them from applying to scholarships that determine eligibility from the omitted criteria. For example, declining to provide ethnicity will make them automatically ineligible for any scholarship intended for minority students.

Companies may zero or more scholarships in the system, and may specify one or more applicant restrictions, including gender-specific, minority-only, state-restricted, or STEM-restricted criteria. Once applications are received, a company selects whether to approve or deny submissions.

High school and college information is sourced from the NCES data warehouse. For the purposes of this report, a small subset of data was used; in practice, an API would be used to restrict students to school selections included in ELSI. Scholarship offerings and companies are modeled after actual programs, although details have been modified to provide a wider array of options. Majors would also be populated with a cumulative list from the same datasets.

We model only the scholarship offer, application, and approval stages of the process. We do not plan to model actual payment of scholarships or student enrollment in colleges as that scope would be too large for this project.

Entities & Relationship sets appear below in the following format:

Entity Set Name set type

Business rules and relationships.

- Other attributes

Relationship sets with attributes appear below entity sets.

Students entity set

One *Student...*

A *Student* <graduates_from> exactly one *High School*,

A *Student* <attends> exactly one *College,*

A *Student* <lives_in> exactly one *State,*

A *Student* <creates> zero or more *Applications,*

A *Student* <declares> zero or one *Major*,

A *Student* <has> zero or one *Ethnicity.*

- SSN - key
- name
- address
- sex
- citizenship_status
- residence_state
- birthdate

High_Schools entity set

A *High School* has zero or more *Students*

A *High School* <in> exactly one *State*

- school_id - key
- state
- name
- is_impoverished
- is_public

Colleges entity set

A *College* has zero or more *Students*

A *College* <in> exactly one *State*

- college_id - key
- is_public
- college_name
- state

Majors entity set

A *Major* may be <declared> by zero or more *Students*.

- major_id - key
- type
- title

Ethnicities entity set
An *Ethnicity* has zero or more *Students.*

- ethnicity - key
- continental_origin
- is_minority

Applications entity set
An *Application* has one *Student.*
An *Application* is approved by one *Company.*
An *Application* is applied to one *Scholarship*.

- app_id - key
- short_essay
- reference_name
- reference_email
- reference_type
- reference_verified

Scholarships entity set
Scholarships have zero or more *Criteria.*
Scholarships have zero or more *Applications*
Scholarships are sponsored by one *Company*
Scholarships are restricted to zero or one *State*

- sco_id - key
- title
- dollar_value
- minority_restrict
- gender_restrict
- stem _restrict

Company entity set
A *Company* sponsors one or more *Scholarships*
A *Company* approves zero or more *Applications*

- company_id - key
- name
- state
- industry
- is_publicly_held

Students <graduate_from> High Schools relationship set

- grad_year
- class_rank
- gpa

Students <attend> College relationship set

- gpa
- probation

Colleges <offer> Majors relationship set

- national_ranking

Applications <apply_to> Scholarships relationship set

- application_date

Applications <have> References relationship set

- is_verified

Companies <approve> Applications relationship set

- is_awarded

TRANSLATION OF THE ER DIAGRAM

All entity sets included in the ER diagram have tables in the schema. The relationship set attributes were included in the tables for associated entities. As an example, grad_year, class_rank, and gpa attributes from the **student <graduate_from> high school** relationship set were included in the student table (1 to many relationship). Business rules were enforced through table relationships (nullable / not nullable foreign keys, depending on rule).

USER INTERFACE

The user interface provides the ability for a user to execute some selected queries. Due to our unfamiliarity with web programming and servlets, we were unable to implement dynamic queries and custom interaction through the deployed application as we initially intended. In the end, we provided the means to execute 6 predetermined queries that employ joins, group-by clauses, or both. The queries return information about either the student applicant or company sponsor domain. We felt that at least having some functionality which read from a live database to be better than something which did not run as expected.

Queries:

1. Users can see a count of how many scholarships each company currently offers.
2. Users can retrieve the total value of scholarships offered by each company.
3. Users can see a list of all active scholarships offered by companies in the database.
4. Users can see exactly which scholarships for which each student is eligible.
5. Users can retrieve a list of students who attended impoverished high schools.
6. Users can retrieve a list of minority students attending private colleges.