

John Smarr – Database Project Logical Design – 12/03/2022

Defining Entities and Properties:

Applicant – an applicant is the one that starts the admissions process, since an applicant must first submit an application to be considered for the department. An applicant has a **First Name** and **Last Name**. Each applicant gets a unique **Applicant ID** when they apply which is the *Primary Key* for this table. Additionally, each applicant's **Application ID** is a *foreign key* that ties the applicant to the application table and is used to supply the conclusion at the end.

First Name

Last Name

Applicant ID – *primary key*

Submission ID – *foreign key*

Date of Birth

Field Name	Type	Key	Description
FIRST_NAME	Char(25)		First name of applicant
LAST_NAME	Char(25)		Last name of applicant
APPLICANT_ID	Char(9)	Primary	The ID assigned to an applicant
SUBMISSION_ID	Char(9)	Foreign	The most recent submission ID submitted by the applicant
DATE_OF_BIRTH	date		The applicant's date of birth

Submission – a submission is key to the admissions process; it contains the information needed to tell if an applicant is a good fit for the department. A **Submission ID** is a unique key for the table, making it the *Primary Key*. Additionally, the submission contains the **Officer ID** of the officer assigned to it as a *Foreign Key* and the information needed to adequately judge each submission, the **GPA**, **Graduation Date** and **SAT Scores**.

Submission ID – *primary key*

Officer ID – *foreign key*

GPA

High School Graduation Date

SAT Score

Date of Submission

Field Name	Type	Key	Description
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SUBMISSION_ID	Char(9)	Primary	The submission's ID
OFFICER_ID	Char(10)	Foreign	The assigned officer's ID
GPA	Double(3,2)		The GPA of the applicant
HIGH_SCHOOL_GRADUATION_DATE	date		The high school graduation date of the applicant
SAT_SCORE	Char(4)		The SAT score of the applicant
DATE_OF_SUBMISSION	date		The date the submission was submitted by the applicant

Admissions Officers – people that use the information from the application to determine eligibility for the department. Each admission officer employee is tracked in this table, so the **First Name** and **Last Name** of the officers are included. The **Officer ID** is used as the *Primary Key* for the table since it uniquely identifies each officer. Each officer is assigned a rubric to judge with, so **Rubric ID** is a *foreign key*.

First Name

Last Name

Officer ID – *primary key*

Rubric ID – *foreign key*

Yearly Salary

Applications Completed

Field Name	Type	Key	Description
FIRST_NAME	Char(25)		First name of the officer
LAST_NAME	Char(25)		Last name of the officer
OFFICER_ID	Char(10)	Primary	The ID of the officer
RUBRIC_ID	Char(4)	Foreign	The currently assigned rubric
YEARLY_SALARY	Double(10,2)		The yearly salary of the officer
APPLICATIONS_COMPLETED	int		The number of applications completed in total

Rubric – the metric that the admissions officers use to judge applicants. Each rubric is uniquely identified with the **Rubric ID**, making it the *Primary Key*. Each rubric comes from a particular

department so the **Department ID** is a *foreign key*. The Rubric consists of scales that are used to judge applicants, and in this case three scales are used. **The Personal Scale** is used to judge applicants on their personal attributes, the **Accomplishment Scale** is used to judge applicants on their personal accomplishments, and the **Community Scale** is used to judge applicants on their community impact,

Rubric ID – *primary key*

Department ID – *foreign key*

Personal Scale

Accomplishment Scale

Community Scale

Field Name	Type	Key	Description
RUBRIC_ID	Char(4)	Primary	The ID of the rubric
DEPARTMENT_ID	Char(2)	Foreign	The department ID that the rubric is from
PERSONAL_SCALE	int		The personal scale for the rubric
ACCOMPLISHMENT_SCALE	int		The accomplishment scale for the rubric
COMMUNITY_SCALE	int		The community scale for the rubric

College Department – the department of the college that the applicant applied for. Each department has a **Department ID** that uniquely identifies it, making it the *Primary Key*. Additionally, the college department table contains the **Majors** offered by the department as well as the **Student Count**, or the number of students in the department.

Department ID – *primary key*

Majors

Student Count

Field Name	Type	Key	Description
DEPARTMENT_ID	Char(2)	Primary	The department's ID
MAJORS	int		The number of majors the department offers
STUDENT_COUNT	int		The total number of students in the department

Conclusion – the final decision of the admissions officers about a particular application. The conclusion uses the **Submission ID** as the primary key since each conclusion is tied to a single submission. The **Officer ID** that determines a particular conclusion is included as a *foreign key* from the Admission Officer’s table. Additionally, the **Rubric ID** is a *foreign key* that shows which rubric was used to judge the submission. The **Date** of when the conclusion was reached is also included. Finally, the **Result** of the conclusion is included.

Submission ID – *primary key*

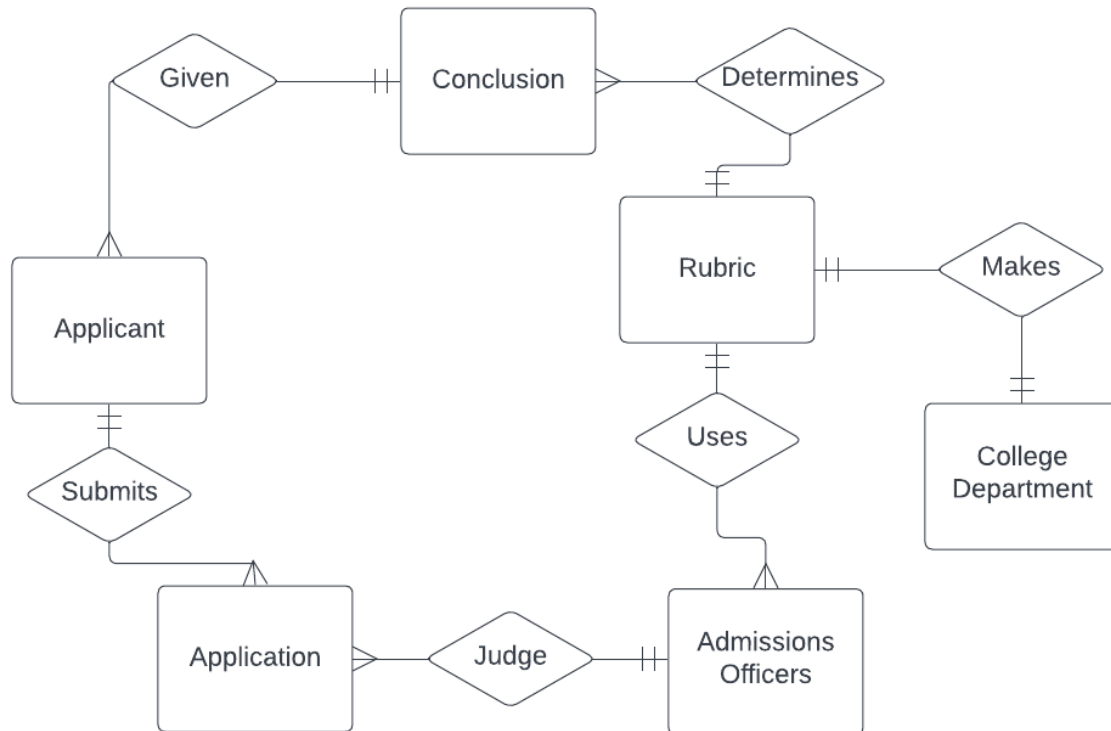
Rubric ID – *foreign key*

Date

Result

Field Name	Type	Key	Description
SUBMISSION_ID	Char(9)	Primary	The submission ID of the particular conclusion
RUBRIC_ID	Char(4)	Foreign	The rubric used to judge the submission
DATE_OF_CONCLUSION	date		The date that the conclusion was reached
RESULT	Char(5)		The final result either Pass or Fail

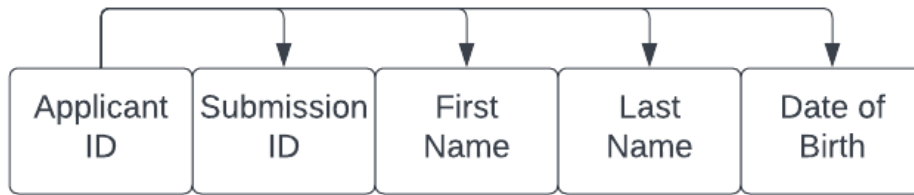
Relationships:



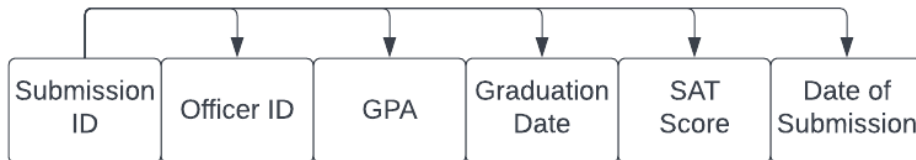
1. Each applicant may only submit one submission per term but multiple per year; each submission belongs to a single applicant.
2. A submission is only judged by a single admissions officer; an admissions officer may judge many submissions.
3. Admissions officers use a single Rubric to determine a submission, a rubric may be used by many officers.
4. A rubric may be used to reach many conclusions; a conclusion only comes from a single officer.
5. A College Department enforces a single rubric; a rubric is only made by a single college department.
6. A rubric may determine many conclusions; a conclusion was determined from a single rubric.
7. Conclusions may be given to many different applicants; an applicant may only receive one conclusion.

Functional Dependency Diagrams:

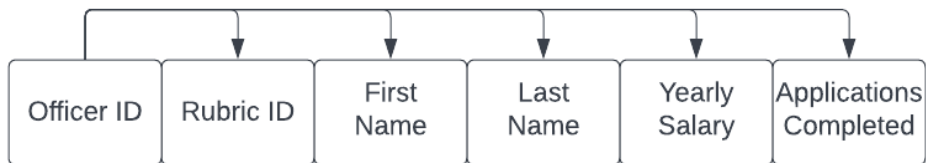
Applicant Table:



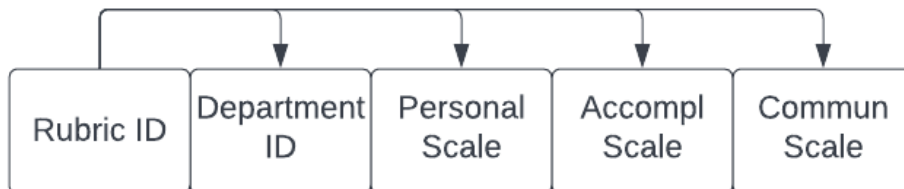
Submission Table:



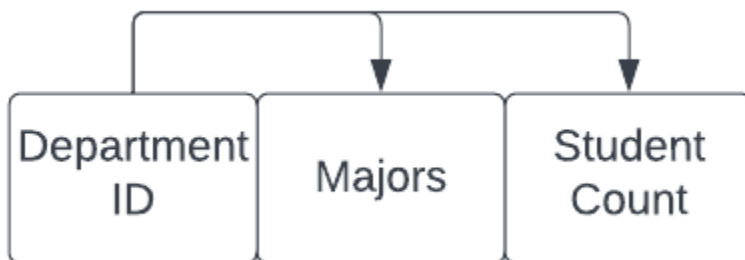
Admissions Officers Table:



Rubric Table:



College Department Table:



Conclusion Table

