# UniversityDB

Group 10
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Database Purpose

- Maintain data on instructors, staff, students and courses in a university
- Perform searches on instructors, staff, students and courses
- Track student populations in departments, GPAs, course enrollment
- Generate reports on student, instructor, department and course information

Entity Relationship Diagram

- 18 tables total
- Major Tables:
  - Students
  - Courses
  - Instructors
  - Departments
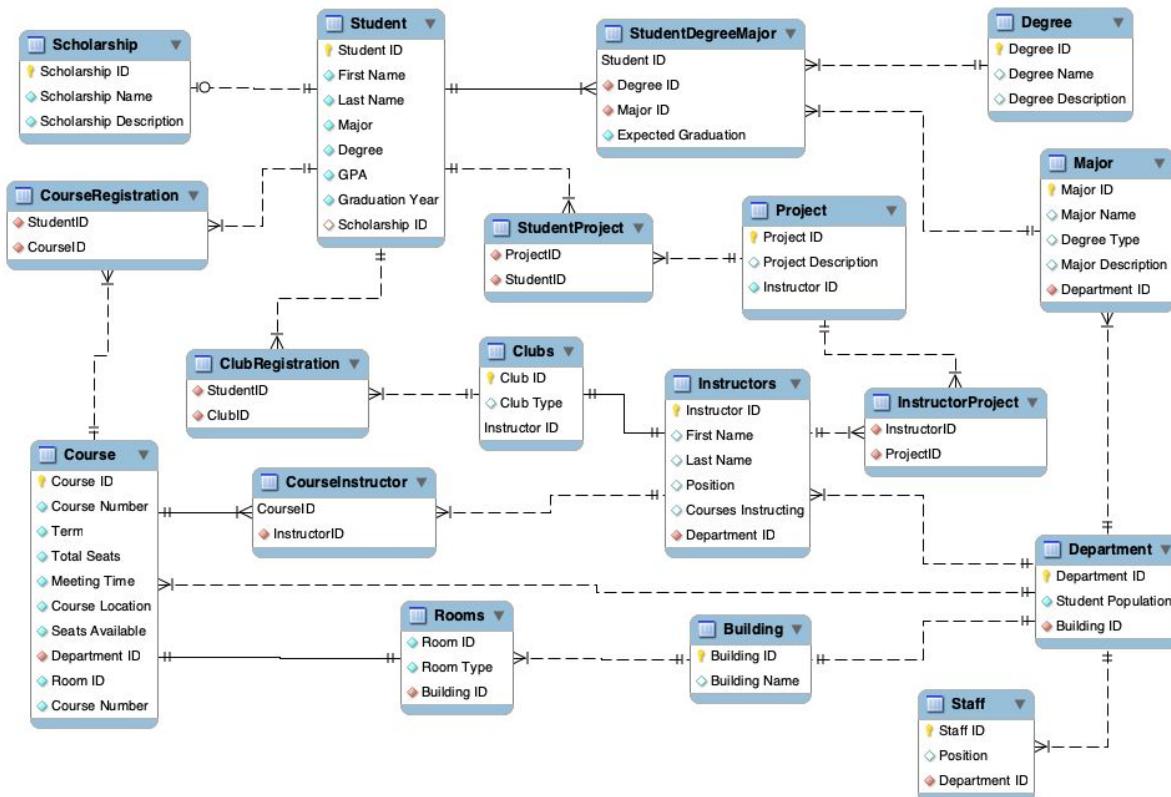
Implementation

```
create master key
encryption by password = 'UniTest';

create certificate TestCertificate
with subject = 'University Group 10 Test Certificate',
expiry_date = '2021-11-30';

create symmetric key TestSymmetricKey
with algorithm = AES_128
encryption by certificate TestCertificate;

open symmetric key TestSymmetricKey
decryption by certificate TestCertificate;
```

```
create table Courses
(
    CourseNumber int not null,
    Term varchar(10) not null,
    TotalSeats int not null,
    MeetingTime time(0) not null,
    CourseLoc varchar(25) not null,
    SeatsAvailable int,
    DepartmentID int not null,
    RoomID int not null,
    InstructorID int not null
    references Instructors(InstructorID),
    BuildingID int not null

);
alter table Courses add CourseID as CONCAT(DepartmentID,'-',CourseNumber)
alter table Courses add constraint PK_Course primary key (CourseID)
```

Database by the Numbers

- 110 Students
- 65 Courses
- 50 Instructors
- 10 Departments
- 10 Buildings
- 155 Rooms

CourseNumber	Term	TotalSeats	MeetingTime	CourseLoc	SeatsAvailable	DepartmentID	RoomID	InstructorID	BuildingID	CourseID
212	Spring	40	18:00:00	Nexus Building	0	110	102	142	202	110-212
301	Spring	50	16:30:00	Snell Library	1	110	102	145	204	110-301
330	Fall	20	17:30:00	Nexus Building	7	110	104	139	202	110-330
405	Spring	40	19:30:00	Woolworth Building	14	110	101	139	208	110-405
102	Fall	40	12:00:00	Prudential Building	27	200	105	148	209	200-102
112	Fall	20	20:30:00	Snell Library	18	200	108	157	204	200-112
211	Fall	10	19:00:00	Nexus Building	5	200	103	120	202	200-211
400	Spring	30	20:00:00	Huntington Building	25	200	205	116	210	200-400
101	Fall	50	16:30:00	Stark Building	13	300	306	133	206	300-101
102	Fall	40	17:00:00	Swirbul Building	6	300	103	156	207	300-102
202	Spring	50	09:00:00	Forsyth Building	47	300	201	146	201	300-202
212	Fall	20	18:30:00	Nexus Building	0	300	102	158	202	300-212
301	Spring	40	19:00:00	Woolworth Building	20	300	101	143	208	300-301
356	Spring	10	10:30:00	Prudential Building	8	300	100	115	209	300-356
400	Fall	10	11:00:00	Swirbul Building	2	300	104	115	207	300-400

MajorID	MajorName	DegreeType	MajorDesc	DepartmentID
101	Physics	Bachelors	Bachelor of Science in Ph…	100
111	Exercise Science	Bachelors	Bachelor of Arts in Exerc…	110
112	Nursing	Bachelors	Bachelor of Science in Nu…	110
201	Biology	Bachelors	Bachelor of Science in Bi…	200
401	Journalism	Bachelors	Bachelor of Arts in Jour…	400
410	English	Masters	Master of Science in Engl…	400
601	Electrical Engineering	Bachelors	Bachelor of Science in El…	600
603	Electrical Engineering	Masters	Master of Science in Elec…	600
801	Advertising	Bachelors	Bachelor of Arts in Adve…	800
802	Economics	Bachelors	Bachelor of Science in Ec…	800
803	Public Relations	Bachelors	Bachelor of Arts in Publi…	800
811	Finance	Bachelors	Bachelor of Arts in Finan…	800
901	Psychology	Bachelors	Bachelor of Science in Ps…	900
902	Psychology	Masters	Master of Science in Psyc…	900

Sample Views

InstructorID	FirstName	LastName	Position	DepartmentID
121	Odele	Falcus	Department Chair	600
122	Gerta	Klee	Visiting Professor	500
123	Lorrayne	Zettoi	Associate Professor	200
124	Keriann	McKenny	Associate Professor	800
125	Percy	Sloss	Tenured Professor	700
126	Abbott	Bartol	Tenured Professor	800
127	Bunnie	Hayman	Associate Professor	900
128	Colene	Breston	Visiting Professor	300
129	Deina	Croneen	Adjunct Professor	900
130	Werner	Mallindine	Visiting Professor	900
131	Brendis	Novacek	Associate Professor	800
132	Orella	Tulloch	Adjunct Professor	300
133	Keely	Tilmouth	Associate Professor	300
134	Kip	Tidridge	Associate Professor	600
135	Cybill	Rowling	Tenured Professor	600

StudentID	FirstName	LastName	Degree	Major
10011	Sherry	Jermaine	Masters	Electrical Engineering
10012	Brandyn	Weasley	Masters	Biology
10013	Alena	Ellison	Bachelors	Biology
10014	Frank	Shah	Masters	Physics
10015	Damon	Marsella	Bachelors	Journalism
10016	Rachel	Adams	Bachelors	Exercise Science
10017	Steve	Jermaine	Bachelors	Electrical Engineering
10018	Ashley	Potter	Masters	Finance
10019	Steve	Levin	Masters	Exercise Science
10020	Nick	Fisher	Masters	Journalism
10021	Wendy	Walker	Bachelors	Journalism
10022	Ryan	Vader	Masters	Accounting
10023	Kevin	Shah	Bachelors	Public Relations
10024	Kevin	Marsella	Masters	Biology
10025	Steve	Shah	Masters	Biology

Department Name	Student ID	First Name	Last Name	Degree Name	
Biology	10001	John	Smith	Bachelor of Science	3.300
	10012	Brandyn	Weasley	Master of Science	3.100
	10013	Alena	Ellison	Bachelor of Science	3.300
	10024	Kevin	Marsella	Master of Science	3.500
	10025	Steve	Shah	Master of Science	3.800
	10033	Ryan	Cheng	Bachelor of Science	3.200
	10034	Monica	Ozer	Master of Science	3.200
	10044	Ross	Vader	Bachelor of Science	3.100
	10062	Chandler	Sand	Master of Science	3.800
	10080	Ross	James	Bachelor of Science	3.500
	10087	Justin	Weasley	Bachelor of Science	3.300
	10090	Alisa	James	Bachelor of Science	3.900
	10092	Marc	Skywalker	Bachelor of Science	3.800
	10093	Shelby	Weasley	Master of Science	3.400
	10094	Julie	Chen	Bachelor of Science	3.700
Business	10003	Bob	Saget	Bachelor of Science	3.400
	10009	Imran	Khan	Bachelor of Science	3.400
	10018	Ashley	Potter	Master of Science	3.600
	10023	Kevin	Shah	Bachelor of Arts	3.400
	10027	Bonnie	Bond	Bachelor of Science	4.000
	10030	Ryan	Brown	Bachelor of Science	3.500
	10032	Vibha	Aziz	Bachelor of Arts	3.700
	10039	Nikhil	Sand	Master of Arts	4.000
	10041	Phoebe	Jermaine	Bachelor of Arts	3.000
	10042	Julie	Shah	Bachelor of Arts	3.000
	10043	Nikhil	Tyree	Bachelor of Science	4.000
	10049	Damon	Stramka	Master of Business Administration	3.600
	10054	Ross	Fisher	Master of Business Administration	3.300
	10056	Kevin	Serrano	Master of Business Administration	3.900
	10060	Shelby	Rizzo	Bachelor of Arts	3.900
	10070	Monica	Aziz	Master of Business Administration	3.000
	10073	Tony	Brown	Master of Business Administration	3.200
	10074	Vibha	Weasley	Master of Business Administration	3.200
	10077	Alena	Aziz	Bachelor of Arts	3.000

GPA of Students by Department
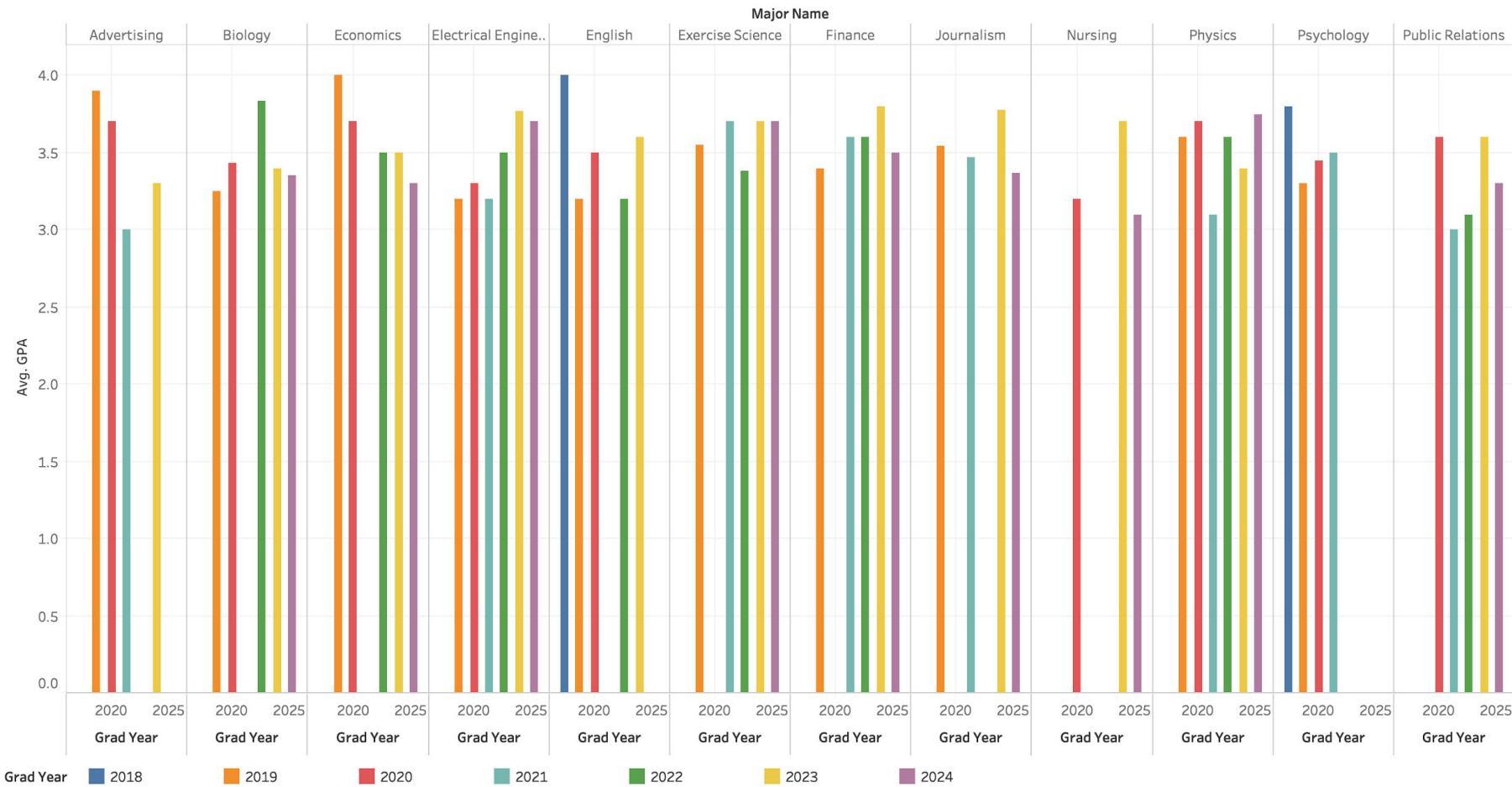
Average GPA by Department and Graduation Year
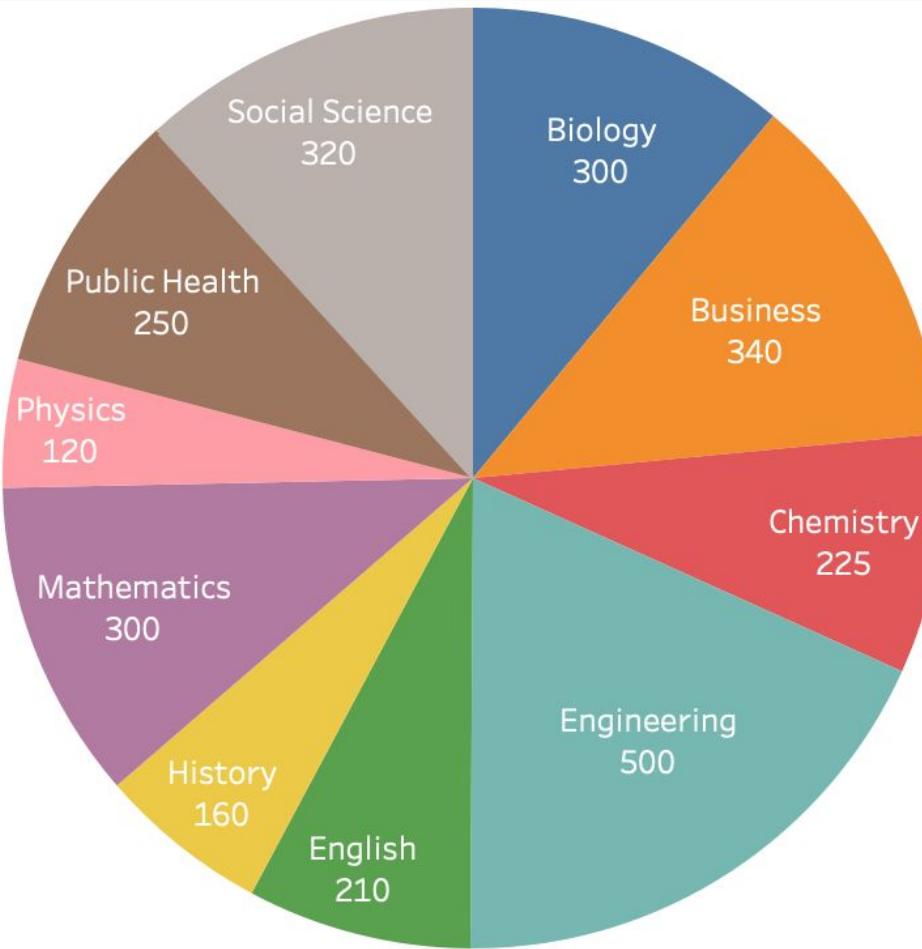
Student Population Breakdown by Department

Room Type by Building

Improvements for UniversityDB

- Add course restrictions for the course table
- Update/delete courses during registration
- Create tables related to tuition/finances for students
- Add a grading system