

San Francisco State University

CSC 675 - 03

COLLEGE DEPARTMENT DATABASE MANAGEMENT SYSTEM

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TABLE OF CONTENTS

Section I: Project Description	3
Section II: Use Cases	4
Section III: Database Requirements (Business Rules)	7
Section IV: Detailed List of Main Entities, Attributes and Keys	12
Section V: Entity Relationship Diagram (ERD)	18
Section VI: Testing Table	20
Section VII: Database Model/EER	23
Section XI: Testing Table	31

SECTION I: PROJECT DESCRIPTION

The aim of the project is to build a **College Department Database Management System**, a system that will help manage online admission, student enrollment, course information, employee records, and more information needed for any college. This project will help simplify the hassles of faculty when it comes to managing, modifying, and storing sensitive information about any college.

The College Department Management system helps colleges in various ways, such as storing important data, maintaining student enrollment information, analyzing administrative and academic data, improving communication, keeping records on current students and employees, and much more. In this day and age, students of this generation are more reliant on technology to update themselves on a daily basis. Colleges need to rethink their ways on how they look at managing their departments and records. That's where this new College Department Management system comes in. This project effortlessly ensures efficiency in the operations of large-scale institutions, compared to the competition.

Unlike the competition, such as the SFSU gateway system, this College Department Management system improves operational efficiency by automating all student and faculty lifecycle and campus administration. This system will be able to generate precise reports on college admission, enrollment, fees, academic records, student and employee information, credentials, and much more for the college department lifecycle. In increasing the efficiency of a college's department management system, it will cut costs immensely, as well as time, which can go into the sustainability of our new and improved system as well as putting money back into colleges.

SECTION II: USE CASES

1. Use Case: Paying for Classes

Actor: Jane (Student)

Description: Jane is a student in a community college. She is having trouble paying for her courses using her credit card payment method. She doesn't have a bank account set up yet, and a credit card is the only way she can pay for her courses. The College Department Management System is implemented to help Jane use her credit card in order to pay for her courses. She can also track her payments made because the system stores all the payments that she has made for her time at community college. That way, she can make sure she knows the amount of money that she's paid, and she can use the same payment method to pay for future courses.

2. Use Case: Viewing Teaching Courses

Actor: Dr. Roberts (Professor)

Description: Dr. Roberts is a professor/teacher at SFSU. He has a hard time browsing through the catalog of courses to see which courses he is assigned to teaching this semester. He also is not too proficient with computers, so he has trouble figuring out which students are enrolled in the classes that he is teaching. The College Department Management system is there to help Dr. Roberts because the system can aggregate the courses based on his teacher or faculty ID, showing him which courses that he is assigned to teaching. Furthermore, once he knows the courses he is teaching, he can view all the student ID's of the enrolled students in his course, skipping the hassle of searching through a previously inefficient system.

3. Use Case: Grading Courses

Actor: Sarah (Student Grader)

Description: Sarah is a student grader for a few courses. She finds it difficult to keep track of which graded assignments belong to which courses, and the course information such as the section numbers, the students they belong to, and more. The College Department Management system is there to help Sarah distinguish between the different courses and their section numbers, as the system stores all the information about which courses she is graded, the student info, course info, and much more. Sarah will now have an easier time managing the grading, and keeping track of her graded assignments to make it less of a hassle towards teachers and students.

4. Use Case: Accessing User Information

Actor: Michelle (Employee)

Description: Michelle is an Employee at a college. She is the head of the financial aid office and wants to determine if certain students are eligible for reduced tuition based on their location and address. In her previous system, it would be difficult to access that information, and she would have to go through several channels to get the information she needs. With the College Department Management System, she can easily access a student's account information, which stores their address, containing information such as country, state, and more to determine if some students are eligible for a reduced tuition.

5. Use Case: Student Adding New Lab Course

Actor: Tom (Student)

Description: Tom is a part time Student at SFSU. He works part time and doesn't have time to wait for slow and inefficient systems, such as the previous enrollment system he interacted with. Since Tom is a Senior, he only needs a Lab course to graduate. Because of the old inefficient system he used, he had a hard time finding the lab course he needed, as the incorrect results were shown to him even though he entered the information correctly. With the College Department Management System, the Lab courses are uniquely identified with their own ID, as well as being attributed to a course ID. That way, Tom can either decide to search the attributed course and filter the courses to show labs only, or to find a lab course based on its ID. This process has made Tom's life easier as he balances between his work and his school work.

SECTION III: DATABASE REQUIREMENTS

1. College (strong)

- a. A college shall have one or more Departments.
- b. A college shall have zero or more Employees.
- c. A college shall have zero or many Campuses.

2. Department (strong)

- a. A department shall belong to a College.
- b. A department shall have zero or more Faculty Members.

3. Faculty Member (strong)

- a. A faculty member shall work in one Department.
- b. A faculty member is a Researcher or a Teacher.
- c. A faculty member shall be an Employee.

4. Employee (strong)

- a. An employee shall work for a College.
- b. An employee can be a Faculty Member.
- c. An employee shall have one or more Addresses.
- d. An employee can be supervised by another Employee.
- e. An employee can be a Supervisor.
- f. An employee shall have one and only one Account.

5. Teacher (weak)

- a. A teacher is a type of Faculty Member.
- b. A teacher shall teach one or many Courses.
- c. A teacher is either a Professor or a Lecturer.

6. Course (strong)

- a. A course shall be taught by zero or many Teachers.
- b. A course shall have zero or many enrolled Students.
- c. A course shall be graded by zero or many Students.
- d. A course can be a Lab.

7. Lab (weak)

- a. A lab is a type of Course.

8. Student (strong)

- a. A student shall be able to enroll in zero or more Courses.
- b. A student shall be able to grade zero or more Courses.
- c. A student shall have one and only one Account.
- d. A student shall have one or more Addresses.
- e. A student shall make zero or more Payments.
- f. A student shall be assigned zero or many Majors.
- g. A student shall be assigned zero or many Minors.

9. Account (strong)

- a. An account shall be owned by one and only one Employee.
- b. An account shall be owned by one and only one Student.

10. Researcher (weak)

- a. A researcher shall publish one or more papers.
- b. A researcher is a type of Faculty Member.

11. Professor (weak)

- a. A professor is a type of Teacher.

12. Lecturer (weak)

- a. A lecturer is a type of Teacher.

13. Paper (weak)

- a. A paper shall be published by one or more Researchers.

14. Payment (strong)

- a. A payment shall be made by a Student.
- b. A payment can be a Credit Card.
- c. A payment can be a Bank Account.

15. Credit Card (weak)

- a. A credit card shall be one mode of Payment.

16. Bank Account (weak)

- a. A bank account shall be one mode of Payment.

17. Address (strong)

- a. Multiple addresses shall belong to multiple Employees.
- b. Multiple addresses shall belong to multiple Students.
- c. An address can belong to one and only one Campus.

18. Major (strong)

- a. A major shall be assigned to zero or many Students.

19. Minor (strong)

- a. A minor shall be assigned to zero or many Students.

20. Campus (weak)

- a. A campus shall belong to one and only one College.
- b. A campus shall have one and only one Address.

- c. A campus shall have one or many Buildings.
- d. A campus shall have zero or many Stores.
- e. A campus shall be visited by zero or many Visitors.

21. Building (strong)

- a. A building shall belong to zero or one Campus.
- b. A building shall have zero or many Rooms.

22. Room (weak)

- a. A room shall belong inside one Building.
- b. A room can be an Office.
- c. A room can be a Class.

23. Office (weak)

- a. An office is located in a Room.
- b. An office belongs to a Faculty Member.

24. Class (weak)

- a. A class is located in a Room.
- b. A class can host a Course.

25. Visitor (strong)

- a. A visitor shall visit one or many Campuses.

26. Store (strong)

- a. A store shall sell one or many Products.
- b. A store shall reside in zero or many Campuses.

27. Product (strong)

- a. A product shall be sold in zero or many Stores.

28. Wellness_Center (strong)

- a. A wellness center shall belong to zero or many Campuses.
- b. A wellness center shall have zero or many Activities.

SECTION IV: DETAILED LIST OF MAIN ENTITIES, ATTRIBUTES AND KEYS

1. College (strong)

- College_id: key, numeric
- College_name: alphanumeric

2. Department (strong)

- Department_id: key, numeric
- Department_name: alphanumeric

3. Faculty_Member (strong)

- Faculty_id: key, numeric
- Ssn: weak key, numeric
- Department: weak key, numeric
- Account: weak key, numeric
- Name: alphanumeric
- Gender: alphanumeric
- Age: numeric
- Salary: composite, numeric

4. Employee (strong)

- Ssn: key, numeric
- Name: alphanumeric
- Gender: alphanumeric
- Age: numeric
- Salary: composite, numeric

5. Teacher (weak)

- Teacher_id: key, numeric
- Faculty: weak key, numeric

6. Course (strong)

- Course_id: key, numeric
- Code: alphanumeric
- Title: alphanumeric
- Description: alphanumeric

7. Lab (weak)

- Lab_id: key, numeric
- Course: weak, numeric
- Code: alphanumeric
- Title: alphanumeric
- Description: alphanumeric

8. Student (strong)

- Student_id: key, numeric
- Account: weak key, numeric
- Name: composite, alphanumeric
- Age: numeric
- Gender: alphanumeric

9. Account (strong)

- Account_id: key, numeric
- Email: multivalued, alphanumeric

- Phone: multivalued, numeric
- Password: alphanumeric
- dob: date

10. Researcher (weak)

- Researcher_id: key, numeric
- Faculty: weak key, numeric

11. Professor (weak)

- Professor_id: key, numeric
- Teacher: weak key, numeric

12. Lecturer (weak)

- Lecturer_id: key, numeric
- Teacher: weak key, numeric

13. Paper (weak)

- Paper_id: key, numeric
- Title: alphanumeric
- Conference: alphanumeric

14. Payment (strong)

- Payment_id: key, numeric
- Amount: composite, numeric
- Student: weak key, numeric

15. Credit Card (weak)

- Card_number: alphanumeric
- Payment: weak key, numeric

- Exp_date: date
- Ccv: numeric
- Bank: alphanumeric

16. Bank Account (weak)

- Acct_number: numeric
- Payment: weak key, numeric
- Routing: alphanumeric
- Bank: alphanumeric

17. Address (strong)

- Address_id: key, numeric
- Street: alphanumeric
- City: alphanumeric
- State: alphanumeric
- Country: alphanumeric
- Zipcode: numeric

18. Major (strong)

- Major_id: key, numeric
- Major_name: alphanumeric

19. Minor (strong)

- Minor_id: key, numeric
- Minor_name: alphanumeric

20. Campus (weak)

- Campus_id: key, numeric

- College: weak key, numeric
- Address: weak key, numeric

21. Building (strong)

- Building_id: key, numeric
- Campus: weak key, numeric
- Building_name: alphanumeric

22. Room (weak)

- Room_number: key, numeric
- Building: weak key, numeric

23. Office (weak)

- Office_id: key, numeric
- Room: weak key, numeric
- Faculty: weak key, numeric

24. Class (weak)

- Class_id: key, numeric
- Room: weak key, numeric
- Course: weak key, numeric

25. Visitor (strong)

- Visitor_id: key, numeric
- Name: alphanumeric

26. Store (strong)

- Store_id: key, numeric
- Store_name: alphanumeric

27. Product (strong)

- Product_id: key, numeric
- Store: weak key, numeric
- Price: numeric
- Product_name: alphanumeric

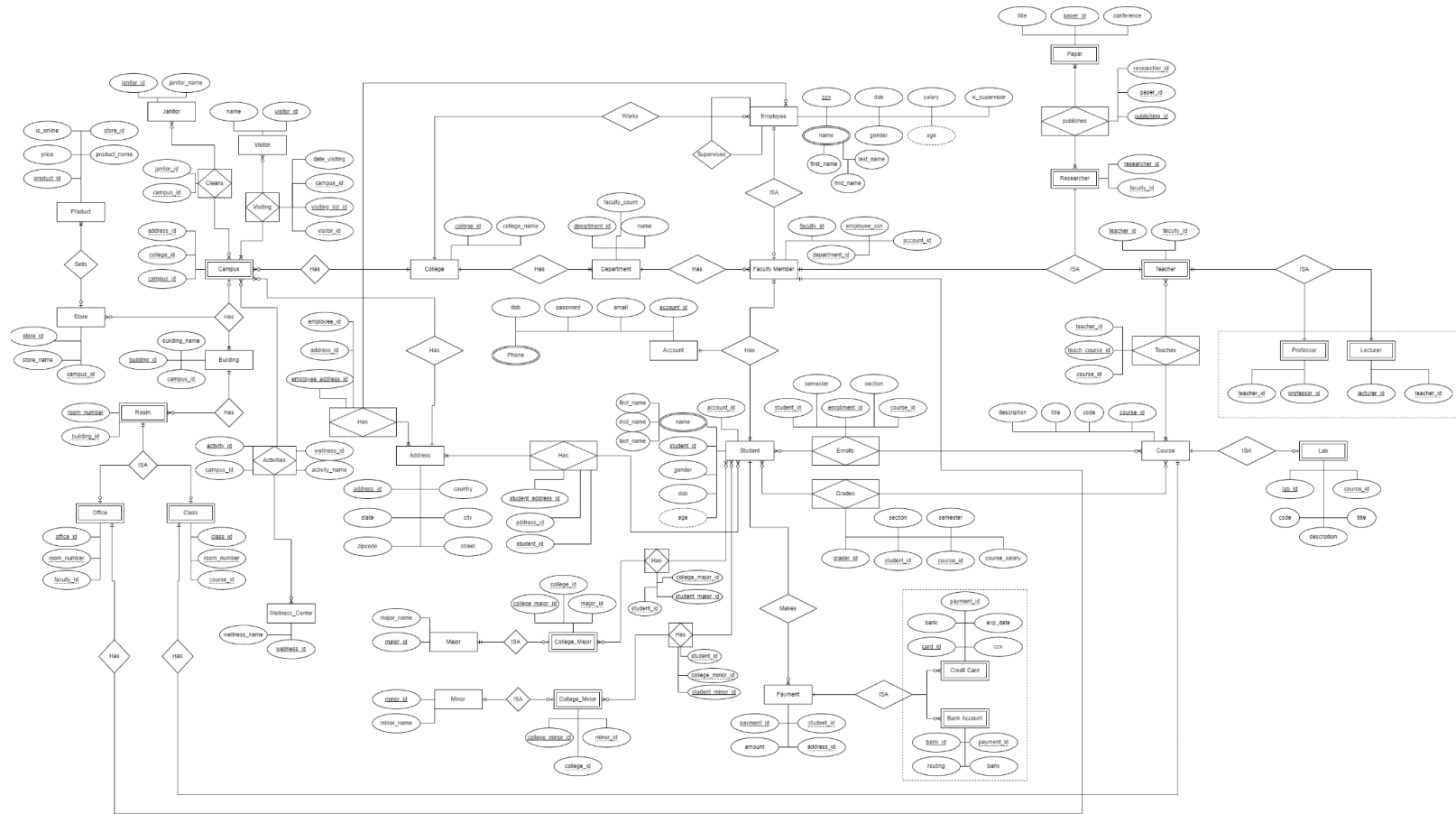
28. Wellness_Center (strong)

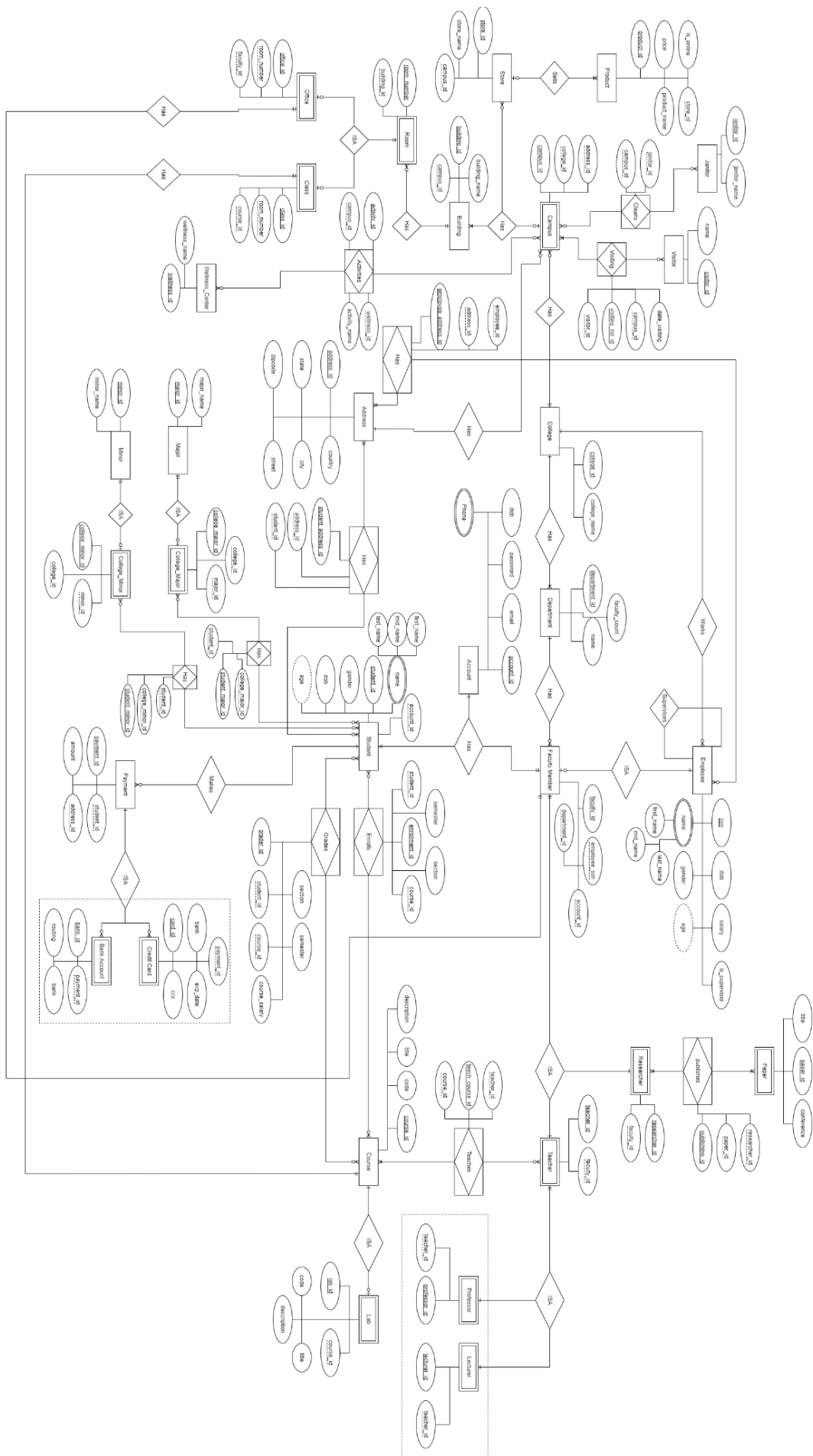
- Wellness_center_id: key, numeric
- Wellness_name: alphanumeric

29. Janitor (strong)

- Janitor_id: key, numeric
- Janitor_name: alphanumeric

SECTION V: ENTITY RELATIONSHIP DIAGRAM





SECTION VI: TESTING TABLE

Rule	Entity A	Relation	Entity B	Cardinality	Pass/Fail	Error Description
1	College	Has	Department	1-to-N	Pass	None
2	College	Has	Address	1-to-N	Fail	An address can have multiple colleges, as well as a college can have multiple addresses.
3	College	Has	Address	M-to-N	Pass	None
4	Department	Has	Faculty Member	1-to-N	Pass	None
5	Faculty Member	ISA	Employee	1-to-1	Pass	None
6	Faculty Member	ISA	Teacher	1-to-1	Pass	None
7	Faculty Member	ISA	Employee	1-to-1	Pass	None
8	Faculty Member	Has	Address	M-to-N	Pass	None
9	Faculty Member	Has	Account	1-to-1	Pass	None
10	Faculty Member	Works	Department	M-to-1	Pass	None
11	Teacher	ISA	Faculty Member	1-to-1	Pass	None
12	Teacher	Teaches	Course	1-to-N	Fail	A Teacher can teach one or many courses. A course can be taught by zero or many Teachers.
13	Teacher	Teaches	Course	M-to-N	Pass	None
14	Teacher	ISA	Professor	1-to-1	Pass	None

15	Teacher	ISA	Lecturer	1-to-1	Pass	None
16	Course	Taught	Teacher	M-to-N	Pass	None
17	Course	Enrolls	Student	M-to-N	Pass	None
18	Course	Graded	Student	M-to-N	Pass	None
19	Course	Has	Lab	1-to-N	Fail	A lab is a type of course. A lab should be a type of course, and as a weak entity.
20	Lab	ISA	Course	1-to-1	Pass	None
21	Student	Enrolls	Course	M-to-N	Pass	None
22	Student	Grades	Course	M-to-N	Pass	None
23	Student	Has	Account	1-to-1	Pass	None
24	Student	Has	Address	M-to-N	Pass	None
25	Student	Makes	Payment	1-to-N	Pass	None
26	Account	Has	Faculty Member	1-to-1	Pass	None
27	Account	Has	Student	1-to-1	Pass	None
28	Account	Has	Employee	1-to-1	Pass	None
29	Researcher	Publish	Paper	1-to-N	Fail	A paper can be published by one or more Researchers. A Researcher can publish one or more papers.
30	Researcher	Publish	Paper	M-to-N	Pass	None
31	Researcher	ISA	Faculty Member	1-to-1	Pass	None
32	Professor	ISA	Teacher	1-to-1	Pass	None
33	Lecturer	ISA	Teacher	1-to-1	Pass	None
34	Paper	Published	Researcher	M-to-N	Pass	None

35	Payment	Made	Student	M-to-1	Pass	None
36	Payment	ISA	Credit Card	1-to-N	Pass	None
37	Payment	ISA	Bank Account	1-to-N	Pass	None
38	Credit Card	ISA	Payment	M-to-1	Pass	None
39	Bank Account	ISA	Payment	M-to-1	Pass	None
40	Address	Has	College	M-to-N	Pass	None
41	Address	Has	Employee	M-to-N	Pass	None
42	Address	Has	Faculty Member	M-to-N	Pass	None
43	Address	Has	Student	M-to-N	Pass	None

SECTION VII: DATABASE MODEL / EER

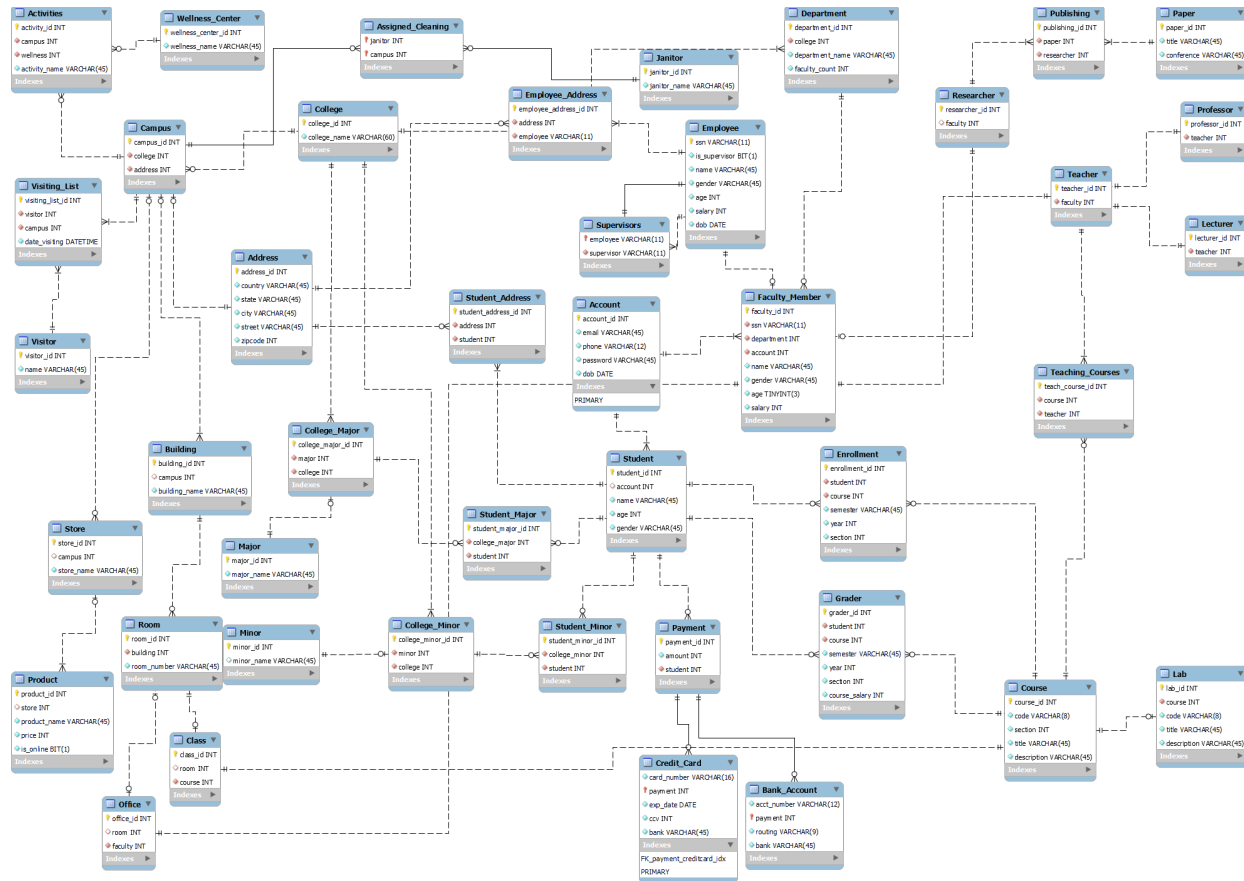


Table	FK	ON DELETE	ON UPDATE	Comment
Activities	Campus	CASCADE	CASCADE	If the Campus doesn't exist anymore, then it's impossible to do activities in the Wellness Center that is on that campus that was deleted.
Activities	Wellness_Center	CASCADE	CASCADE	If the Wellness Center doesn't exist, then you can't do any activities in the Wellness Center that was deleted.
Bank Account	Payment	CASCADE	CASCADE	If the record of a payment is

				deleted, then the Bank Account information should be wiped as well for security purposes.
Building	Campus	SET NULL	CASCADE	If a Campus is deleted, aka it doesn't exist anymore, then the Building(s) doesn't automatically disappear. Thus, the FK is set to null, until another Campus uses the existing building.
Campus	College	CASCADE	CASCADE	If a College doesn't exist anymore, then there can't be any Campuses for a college that doesn't exist. The buildings exist, but the campus doesn't exist anymore.
Campus	Address	CASCADE	CASCADE	If the Address for a Campus location is deleted, then a Campus cannot exist at an Address that no longer exists.
Class	Room	SET NULL	CASCADE	A Class can exist if the Room has been deleted. Either the Class can be reassigned, or it can exist online.
Class	Course	CASCADE	CASCADE	If the Course offering is deleted, then there's no reason to have a Class that has no course offering attached to the Class.
College_Major	Major	CASCADE	CASCADE	If the Major doesn't exist anymore, then it can't be offered at the College.
College_Major	College	CASCADE	CASCADE	If the College doesn't exist anymore, then a Major can't be offered at the College that doesn't exist.

College_Minor	Minor	CASCADE	CASCADE	If the Minor doesn't exist anymore, then it can't be offered at the College.
College_Minor	College	CASCADE	CASCADE	If the College doesn't exist anymore, then a Minor can't be offered at the College that doesn't exist.
Credit_Card	Payment	CASCADE	CASCADE	If the record of a payment is deleted, then the Credit Card information should be wiped as well for security purposes.
Department	College	CASCADE	CASCADE	If the College doesn't exist anymore, then the Departments can't exist for a non-existing College.
Employee_Address	Address	CASCADE	CASCADE	If an Address is deleted, then the record of the Employee's address should be deleted for an address that no longer exists. There's no reason to keep any listing with an employee and a null address.
Employee_Address	Employee	CASCADE	CASCADE	If an Employee is deleted, any records of their address(es) tied with them should be deleted as well for security purposes.
Enrollment	Student	CASCADE	CASCADE	If a Student has been deleted, then any instances of their enrollment should be deleted as well.
Enrollment	Course	CASCADE	CASCADE	If a Course offering has been deleted, then any instances of Student's enrollment with that Course should be deleted as well.
Faculty_Member	Employee	CASCADE	CASCADE	If an Employee is deleted,

				then the Faculty Member cannot exist unless they are an Employee as well.
Faculty_Member	Department	CASCADE	CASCADE	If the Department is deleted, then the Faculty Member listing cannot exist without a Department, and must be deleted.
Faculty_Member	Account	CASCADE	CASCADE	If a Faculty Member is deleted, then their account must be deleted as well.
Grader	Student	CASCADE	CASCADE	If a Student is deleted, then there is no Grader that exists if the Student doesn't exist.
Grader	Course	CASCADE	CASCADE	If the Course is deleted, there's no reason to list a Grader that grades a course that doesn't exist.
Lab	Course	CASCADE	CASCADE	If a Course is deleted, then there's no reason to have the associated Lab course anymore, as it wouldn't make sense to take only a Lab course without the regular Course.
Lecturer	Teacher	CASCADE	CASCADE	If the Teacher is deleted, then the Lecturer can't exist as it needs to be a Teacher in order to be a lecturer.
Office	Room	SET NULL	CASCADE	If a Room is deleted, then the Office owner can wait to have a replacement room, or they can have their Office be online.
Office	Faculty_Member	CASCADE	CASCADE	If a Faculty_Member is deleted, there's no reason to keep the existence of an Office for the deleted Faculty_Member. Any

				physical space used by the Office is different.
Payment	Student	CASCADE	CASCADE	If a Student is deleted, then it is a good security measure to also delete all records of the Student's Payments.
Product	Store	SET NULL	CASCADE	Even if the Store is deleted, the Product doesn't automatically disappear. While it is unassigned to a physical Store, aka null, it can be sold on the College online store.
Professor	Teacher	CASCADE	CASCADE	If the Teacher is deleted, then the Professor can't exist as it needs to be a Teacher in order to be a professor.
Publishing	Researcher	CASCADE	CASCADE	If a Researcher is deleted, then there is no reason to keep track of any published listings related to the deleted Researcher.
Publishing	Paper	CASCADE	CASCADE	If a Paper is deleted, then there is no reason to keep track of any published listings related to the deleted Paper.
Researcher	Faculty_Member	CASCADE	CASCADE	If a Faculty Member is deleted, there's no reason to store information about the Researcher if they don't work for the college anymore.
Room	Building	CASCADE	CASCADE	If a Building is deleted, then the Room cannot exist as well, and therefore should also be deleted.
Store	Campus	SET NULL	CASCADE	If a Campus no longer

				exists, the Store can act independently regardless of an existing campus or not.
Student	Account	SET NULL	CASCADE	If an Account is deleted, then the corresponding Student shouldn't be deleted, as the Student can get a new Account.
Student_Address	Address	CASCADE	CASCADE	If an Address is deleted, then the record of the Student's address should be deleted for an address that no longer exists. There's no reason to keep any listing with a student and a null address.
Student_Address	Student	CASCADE	CASCADE	If a Student is deleted, any records of their address(es) tied with them should be deleted as well for security purposes.
Student_Major	College_Major	CASCADE	CASCADE	If the College offered Major is deleted, then there's no reason to keep one or more listings of a Student with a null or non-existing major. A Student can be undeclared by having no entries in this table.
Student_Major	Student	CASCADE	CASCADE	If a Student is deleted, there is no reason to keep a listing of a Student's assigned Major if the Student no longer exists.
Student_Minor	College_Minor	CASCADE	CASCADE	If the College offered Minor is deleted, then there's no reason to keep one or more listings of a Student with a null or non-existing minor. A Student can be undeclared by having no entries in this

				table.
Student_Minor	Student	CASCADE	CASCADE	If a Student is deleted, there is no reason to keep a listing of a Student's assigned Minor if the Student no longer exists.
Supervisors	Employee	CASCADE	CASCADE	This is the FK that connects to Employees, that keeps track of Employees that are supervised by the PK of the Supervisor table. If an Employee is deleted, there's no reason to keep a listing of a Supervisor that is supervising a non-existing Employee.
Supervisors	Employee	CASCADE	CASCADE	This is the FK/PK that connects to the Employee table if the Employee is a Supervisor. If that Employee is deleted, then there is no reason to keep track of unsupervised Employees in the Supervisor table.
Assigned_Cleaning	Janitor	CASCADE	CASCADE	If a Janitor is deleted, there is no reason to keep their assigned cleaning tasks if there is no Janitor anymore.
Assigned_Cleaning	Campus	CASCADE	CASCADE	If a Campus is deleted, there's no reason to keep track of assigned cleaning duties for a campus that doesn't exist anymore.
Teacher	Faculty_Member	CASCADE	CASCADE	If the Faculty Member is deleted, then it assumes that the same person, aka the Teacher, no longer works at the college and doesn't exist. Thus, the record of the Teacher is also deleted.

Teaching_Courses	Teacher	CASCADE	CASCADE	If a Teacher is deleted, then all the listings of what courses the Teacher is teaching should be deleted as well.
Teaching_Courses	Course	CASCADE	CASCADE	If a Course is deleted, then all the listings that include the deleted Course should be deleted, as it makes no sense to keep listings of a Teacher that is going to teach a Course that doesn't exist.
Visiting_List	Visitor	CASCADE	CASCADE	If a Visitor is deleted, it makes no sense to keep their record in the visiting list anymore if they don't exist.
Visiting_List	Campus	CASCADE	CASCADE	If the Campus is deleted, all the viewing lists to visit the campus should be deleted as well, as you can't visit a Campus that doesn't exist anymore.

SECTION XI: TESTING TABLE

Entity	SQL Query	Pass/Fail	Error Description	Possible Solution
College	Delete	Pass	None	None
College	Update	Pass	None	None
Department	Delete	Pass	None	None
Department	Update	Pass	None	None
Employee	Delete	Pass	None	None
Employee	Update	Pass	None	None
Account	Delete	Pass	None	None
Account	Update	Pass	None	None
Faculty_Member	Delete	Pass	None	None
Faculty_Member	Update	Pass	None	None
Teacher	Delete	Pass	None	None
Teacher	Update	Fail	Error Code: 1452. Cannot add or update a child row: a foreign key constraint fails (`collegemanagementdb`.`teacher`, CONSTRAINT `FK_faculty_teacher` FOREIGN KEY (`faculty`) REFERENCES `faculty_member` (`faculty_id`) ON DELETE CASCADE ON UPDATE CASCADE)	Look into the relationship between Teacher and Faculty, as well as the foreign key and the ON UPDATE/DELETE actions.

Course	Delete	Pass	None	None
Course	Update	Pass	None	None
Lab	Delete	Pass	None	None
Lab	Update	Pass	None	None
Student	Delete	Pass	None	None
Student	Update	Pass	None	None
Researcher	Delete	Pass	None	None
Researcher	Update	Pass	None	None
Professor	Delete	Pass	None	None
Professor	Update	Fail	Error Code: 1054. Unknown column 'teacher_id' in 'field list'	Change teacher_id to teacher.
Lecturer	Delete	Pass	None	None
Lecturer	Update	Fail	Error Code: 1452. Cannot add or update a child row: a foreign key constraint fails (`collegemanagementdb`.`lecturer`, CONSTRAINT `FK_teacher_lecturer` FOREIGN KEY (`teacher`) REFERENCES `teacher` (`teacher_id`) ON DELETE CASCADE ON UPDATE	Look into the relationship between Lecturer and Teacher, as well as the foreign key and the ON UPDATE/DELETE actions.

			CASCADE)	
Paper	Delete	Pass	None	None
Paper	Update	Pass	None	None
Payment	Delete	Pass	None	None
Payment	Update	Pass	None	None
Credit_Card	Delete	Pass	None	None
Credit_Card	Update	Pass	None	None
Bank_Account	Delete	Pass	None	None
Bank_Account	Update	Pass	None	None
Address	Delete	Pass	None	None
Address	Update	Pass	None	None
Major	Delete	Pass	None	None
Major	Update	Pass	None	None
Minor	Delete	Pass	None	None
Minor	Update	Pass	None	None
Campus	Delete	Pass	None	None
Campus	Update	Pass	None	None
Building	Delete	Pass	None	None
Building	Update	Pass	None	None
Room	Delete	Pass	None	None
Room	Update	Pass	None	None
Office	Delete	Pass	None	None
Office	Update	Pass	None	None
Class	Delete	Pass	None	None

Class	Update	Pass	None	None
Visitor	Delete	Pass	None	None
Visitor	Update	Pass	None	None
Store	Delete	Pass	None	None
Store	Update	Pass	None	None
Product	Delete	Pass	None	None
Product	Update	Pass	None	None
Wellness_center	Delete	Pass	None	None
Wellness_center	Update	Pass	None	None
Janitor	Delete	Pass	None	None
Janitor	Update	Pass	None	None
Activities	Delete	Pass	None	None
Activities	Update	Pass	None	None
Assigned_cleaning	Delete	Pass	None	None
Assigned_cleaning	Update	Pass	None	None
College_major	Delete	Pass	None	None
College_major	Update	Pass	None	None
College_minor	Delete	Pass	None	None
College_minor	Update	Pass	None	None
Employee_addresses	Delete	Pass	None	None
Employee_addresses	Update	Pass	None	None
Enrollment	Delete	Pass	None	None
Enrollment	Update	Pass	None	None

Grader	Delete	Pass	None	None
Grader	Update	Pass	None	None
Publishing	Delete	Pass	None	None
Publishing	Update	Pass	None	None
Student_address	Delete	Pass	None	None
Student_address	Update	Pass	None	None
Student_major	Delete	Pass	None	None
Student_major	Update	Pass	None	None
Student_minor	Delete	Pass	None	None
Student_minor	Update	Pass	None	None
Supervisors	Delete	Pass	None	None
Supervisors	Update	Pass	None	None
Teaching_courses	Delete	Pass	None	None
Teaching_courses	Update	Pass	None	None
Visiting_list	Delete	Pass	None	None
Visiting_list	Update	Pass	None	None