Assignment 1

Thanh Tran

Due: Thursday, September 8th, 2022

Total: 10 Points

Question 1 (3 Points)

Given the table shown below, answer questions 1.1 to 1.3:

Student	address	email
Emmalee Welch	13893 Schulist Knoll Suite 081 Lisette Drives, Kossview,Idaho 71500	EWelch@gmail.com
Emmalee Welch	64005 Altenwerth Ramp Bashirian Common, Kossview,Idaho 71500	EWelch@gmail.com
Emmalee Welch	13893 Schulist Knoll Suite 081 Lisette Drives, Kossview,Idaho 71500	EWelch@live.com
Emmalee Welch	64005 Altenwerth Ramp Bashirian Common, Kossview,Idaho 71500	EWelch@live.com
Kenton Bednar	1151 Ratke Bypass Towne Corners, New Faefort,Michigan 11933-3783	KBednar@gmail.com
Kenton Bednar	4748 Kristian Shoal Suite 033 Berneice Fall, New Faefort,Michigan 11933-3783	KBednar@gmail.com
Kenton Bednar	1151 Ratke Bypass Towne Corners, New Faefort,Michigan 11933-3783	KBednar@live.com
Kenton Bednar	4748 Kristian Shoal Suite 033 Berneice Fall, New Faefort,Michigan 11933-3783	KBednar@live.com
Carley Hoeger	19116 Franecki Rue Cordie Forges, Glendafort,Michigan 14455	CHoeger@gmail.com
Carley Hoeger	74237 Parisian Village Ortiz Fall, Glendafort,Michigan 14455	CHoeger@gmail.com

1.1 (1 point) How many tuples does the table contain? How many attributes are there per tuple?

10 tuples / 3 attributes per tuples

1.2 (1 point) What problem would you encounter if you wanted to produce a listing by city? How would you solve this problem by altering the table structure?

If producing a listing by city, the table only detects one address of the student and omit all of the existing address.

1.3 (1 point) What data redundancies can you detect in the table? Explain why data redundancy is undesired?

Many email and address is showed with the same student.

Students are probably moving out after done with leasing term. That's why they're likely to have their change frequently.

Question 2 (3 Points)

Given the following database instance, answer questions 2.1 to 2.3:

Employee

emp_code	emp_lname	job_code
14	Rudell	2
15	McDade	1
16	Ruellardo	1
17	Smith	3
20	Smith	2

Plan

plan_code	plan_description
1	Term Life
2	Stock Purchase
3	Long-term disability
4	Dental

Job

job_code	job_description
1	Clerical
2	Technical
3	Manager

Benefit

emp_code	plan_code
15	2
15	3
16	1
17	1
17	3
17	4
20	3

Assume that the following attributes are the primary keys for the tables:

emp_code is the primary key for **Employee** table

job_code is the primary key for the **Job** table

plan_code is the primary key for the **Plan** table

emp_code, plan_code is a composite primary key for the **Benefit** table

2.1 (2 point) For each table in the database, identify foreign key(s) (if any). For each foreign key, state the referencing relation and the referenced relation.

Job_description , plan_description , emp_lname

2.2 (1 point) Do all tables exhibit referential integrity? Answer yes or no and then explain your answer.

Yes, Every table shows the connection among them and really consistent.

Question 3 (4 Points)

3.1 (1 Point) There several major advantages of a database system. What are two disadvantages?

- Difficult to back up and recovery / • Cost of hardware and Software

3.2 (2 points) List three ways in which the type declaration system of a language such as Java or C++ differs from the data definition language used in a database.

- Java don't support access rights to different users.
- Java don't allow consistency constraints to be specified
- Java has more complex types (array, objects)

3.3 (1 Point) List three major steps that you would take in setting up a database for a particular enterprise.

- Define the integrity constraints
- Define a schema for model
- Create and initialize the database

Submission

Compress(Zip) your completed project into a Zip by using the native windows compressor or an application like 7-zip. You should do this at the folder level to include all your source files and any instructions on how to use the site. Submit this compressed zip on D2L under Assignment1.

Assessment

1. 10 points - All questions are answered correctly. Points will be deducted for questions that are answered incorrectly or not answered at all.

Learning Outcomes

This assignment is designed to test your knowledge of the basic understanding the design of database schemas, as well as general understanding of the functionality of databases.

Disclaimer

Please review the syllabus on academic integrity and the submission policy. I will follow both strictly, so please adhere to the policy for each subsequent assignment or project.