**Chapter Eight Questions:**

**Q2:** Explain why it might be more appropriate to declare an attribute that contains only digits as a character data type instead of a numeric data type.

**Ans:** For some data like zip-code and area-code, even they only contain digits, adding or subtracting these number is meaningless. Also, some zip-code start with 0, which will be dropped if stored in numerical data type.

**Q5:** What is the purpose of a CHECK constraint?

**Ans:** It is used to validate data when an attribute is entered. It checks to see that a specified condition exists.

**Q7:** What is the difference between an INSERT command and an UPDATE command?

**Ans:** INSERT creates new rows in the table but UPDATE only changes existing rows.

**Rick’s Problems:**

**Q1:**

DROP TABLE EMPLOYEE;

DROP TABLE JOB;

CREATE TABLE JOB(

Job\_Code INT NOT NULL AUTO\_INCREMENT,

Job\_Description VARCHAR(200),

Job\_Chg\_Hour FLOAT,

Job\_Last\_Update DATE,

PRIMARY KEY(Job\_Code)

);

CREATE TABLE EMPLOYEE(

Emp\_Num INT NOT NULL AUTO\_INCREMENT,

Emp\_LName VARCHAR(20),

Emp\_FName VARCHAR(20),

Emp\_Initial VARCHAR(1),

Emp\_HireDate DATE,

Job\_Code INT NOT NULL,

Emp\_Years INT,

PRIMARY KEY(Emp\_Num),

FOREIGN KEY(Job\_Code)

REFERENCES JOB(Job\_Code)

ON DELETE NO ACTION

ON UPDATE CASCADE

);

INSERT INTO JOB (Job\_Description, Job\_Chg\_Hour, Job\_Last\_Update) VALUE ('TEST JOB ONE', 12.3, '20211102');

INSERT INTO JOB (Job\_Description, Job\_Chg\_Hour, Job\_Last\_Update) VALUE ('TEST JOB TWO', 14.1, '20211101');

INSERT INTO JOB (Job\_Description, Job\_Chg\_Hour, Job\_Last\_Update) VALUE ('TEST JOB THREE', 20.0, '20211104');

SELECT \* FROM JOB;

INSERT INTO EMPLOYEE (Emp\_LName, Emp\_FName, Emp\_Initial, Emp\_HireDate, Job\_Code, Emp\_Years) VALUE ('yulong', 'wang', 'I', '20211104', 1, '12');

INSERT INTO EMPLOYEE (Emp\_LName, Emp\_FName, Emp\_Initial, Emp\_HireDate, Job\_Code, Emp\_Years) VALUE ('tony', 'john', 'H', '20211102', 2, '1');

INSERT INTO EMPLOYEE (Emp\_LName, Emp\_FName, Emp\_Initial, Emp\_HireDate, Job\_Code, Emp\_Years) VALUE ('tom', 'jack', 'Q', '20211111', 3, '20');

SELECT \* FROM EMPLOYEE;

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**a):** What happens if you create the EMPLOYEE table before the JOB table? Why?

**Ans:** When creating EMPLOYEE table first, the system raise an erroe because the EMPLOYEE table requires a not null foreign key so system is looking for the Job\_Code in JOB which has not been created yet.

**b):** What happens if you add an employee record with a JOB \_CODE not present in the JOB table? Why?

**Ans:** The system raises an error because the DBMS is maintaining reference integrity which require foreign to refer to a valid record in another table. However, we are referring to an non-exist record in this situation.

**Q2:**

a). Create a table in your MySQL/MariaDB account, Schools, as shown below:

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b).Create and test three types of SQL statements. Show your work from the command line (i.e. correct command and result).

1:

INSERT INTO schools (name, province, language, level) VALUE ('University of New Brunswick', 'NB', 'EN','University');

INSERT INTO schools (name, province, language, level) VALUE ('Miami University', 'OH', 'EN','University');

INSERT INTO schools (name, province, language, level) VALUE ('Columbia University', 'NY', 'EN','University');

SELECT \* FROM schools;

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2.

UPDATE schools

SET province = 'Manitoba'

WHERE schoolId = 2;

SELECT \* FROM schools;

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3.

DELETE FROM schools WHERE province = 'Manitoba';

SELECT \* FROM schools;

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