



CS 1103 - FR02B

Assignment 5

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March 2021

Review Questions:

Question 2: 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.

The attributes are declared as numeric data types only when they must do some mathematical functions. Some attributes as phone numbers, security codes do not have to do that, so they should be declared as character data types.

Question 5: What is the purpose of a CHECK constraint?

A CHECK constraint is used to validate data when an attribute value is entered.

Question 7: What is the difference between an INSERT command and an UPDATE command?

- ▶ INSERT command is used to add new data in a table, while UPDATE command is used to modify data in a table.
- ▶ An UPDATE statement can use a WHERE clause, but INSERT cannot.

Problems:

1. Using Figure P7.1 in the text as a guide, write the SQL/DDL to create the Job and EMPLOYEE tables. Note the cardinality requirements for the relationship indicates a foreign key and values are required. Write the SQL commands to add the first three records to the JOB table and the first three records to the EMPLOYEE table. Consider using your personal database (mysql> use <username>;) on cs1103.cs.unb.ca to test your work.

FIGURE P7.1 THE CH07_CONSTRUCTCO DATABASE

Relational diagram

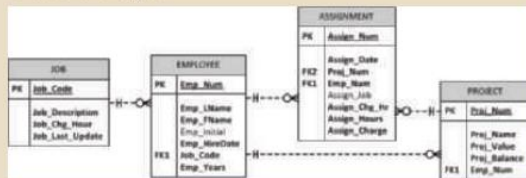


Table name: JOB

JOB_CODE	JOB_DESCRIPTION	JOB_CHG_HOUR	JOB_LAST_UPDATE
980	Programmer	35.75	26-Nov-17
981	Systems Analyst	96.75	26-Nov-17
992	Database Designer	125.00	24-Mar-18
993	Electrical Engineer	84.50	26-Nov-17
994	Mechanical Engineer	67.90	26-Nov-17
995	Civil Engineer	55.78	26-Nov-17
996	Clerical Support	26.87	26-Nov-17
997	DSS Analyst	45.95	26-Nov-17
998	Applications Designer	48.10	26-Mar-18
999	Bio Technician	34.55	26-Nov-17
910	General Support	18.36	26-Nov-17

Table name: PROJECT

PROJ_NUM	PROJ_NAME	PROJ_VALUE	PROJ_BALANCE	EMP_NUM
15	Evergreen	1453500.00	1002350.00	103
18	Amber Wave	3500900.00	2110346.00	100
22	Rolling Tide	809000.00	500345.20	102
25	Starlight	2649500.00	2309880.00	107

Table name: EMPLOYEE

EMP_NUM	EMP_LNAME	EMP_FNAME	EMP_INITIAL	EMP_HIREDATE	JOB_CODE	EMP_YEARS
101	News	John	G	08-Nov-00	502	17
102	Senior	David	H	12-Jul-89	501	28
103	Aubough	June	E	01-Dec-96	500	21
104	Ramoras	Anne	K	15-Nov-87	501	30
105	Johnson	Alice	K	01-Feb-93	502	25
106	Smithfield	William		22-Jun-04	500	13
107	Alonso	Maria	D	10-Oct-92	500	24
108	Washington	Ralph	B	22-Aug-91	501	26
109	Smith	Larry	vW	18-Jul-97	501	20
110	Olenko	Gerald	A	11-Dec-95	505	22
111	vibash	Oeffr	B	04-Apr-91	506	27
112	Smithson	Darlene	M	23-Oct-94	507	23
113	Joelbrood	Delbert	K	15-Nov-96	508	21
114	Jones	Annette		20-Aug-93	508	24
115	Bewangi	Travis	B	25-Jan-92	501	26
116	Pratt	Gerald	L	05-Mar-97	510	21
117	vBlanson	Angie	H	19-Jun-96	509	21
118	Frommer	James	J	04-Jan-05	510	13

Table name: ASSIGNMENT

ASSIGN_NUM	ASSIGN_DATE	PROJ_NUM	EMP_NUM	ASSIGN_JOB	ASSIGN_CHG_HR	ASSIGN_HOURS	ASSIGN_CHARGE
1001	22-Mar-18 18	992	923		84.5	3.5	295.75
1002	22-Mar-18 22	117	509		34.55	4.2	145.11
1003	22-Mar-18 18	117	509		34.55	2	69.1
1004	22-Mar-18 18	993	503		84.5	5.9	498.55
1005	22-Mar-18 25	998	501		96.75	2.2	212.85
1006	22-Mar-18 22	994	501		96.75	4.2	406.35
1007	22-Mar-18 25	113	508		60.75	3.8	182.85
1008	22-Mar-18 18	993	503		84.5	9.9	76.05
1009	23-Mar-18 15	115	501		96.75	5.6	541.8
1010	23-Mar-18 15	117	509		34.55	2.4	82.92
1011	23-Mar-18 25	995	502		105	4.3	451.5
1012	23-Mar-18 18	998	501		96.75	3.4	328.85
1013	23-Mar-18 25	115	501		96.75	2	193.5
1014	23-Mar-18 22	994	501		96.75	2.8	278.9
1015	23-Mar-18 15	993	503		84.5	8.1	615.45
1016	23-Mar-18 22	995	502		105	4.7	493.5
1017	23-Mar-18 18	117	509		34.55	3.6	131.29
1018	23-Mar-18 25	117	509		34.55	2.2	76.01
1019	24-Mar-18 25	994	501		110.5	4.9	541.45
1020	24-Mar-18 15	991	502		125	3.1	387.5
1021	24-Mar-18 22	998	501		110.5	2.7	298.35
1022	24-Mar-18 22	115	501		110.5	4.9	541.45
1023	24-Mar-18 22	995	502		125	3.5	437.5
1024	24-Mar-18 15	993	503		84.5	3.3	279.85
1025	24-Mar-18 18	117	509		34.55	4.2	145.11

Figure 1: The Ch07_ConstructCo Database

a. Create JOB table:

```
CREATE TABLE JOB
```

```
(
```

```
    JOB_CODE VARCHAR(3),
    JOB_DESCRIPTION VARCHAR(50),
    JOB_CHG_HOUR DECIMAL(10,2),
    JOB_LAST_UPDATE DATE,
    PRIMARY KEY (JOB_CODE)
```

```
);
```

b. Create EMPLOYEE table:

```
CREATE TABLE EMPLOYEE
(
    EMP_NUM VARCHAR(3),
    EMP_LNAME VARCHAR(15),
    EMP_FNAME VARCHAR(15),
    EMP_INITIAL VARCHAR(1),
    EMP_HIREDATE DATE,
    JOB_CODE VARCHAR(3),
    EMP_YEARS INT(3),
    PRIMARY KEY (EMP_NUM),
    FOREIGN KEY (JOB_CODE)
        REFERENCES JOB (JOB_CODE)
        ON DELETE NO ACTION
        ON UPDATE CASCADE
);
```

c. Insert the first three records to the JOB table:

```
INSERT INTO JOB
VALUES('500','Programmer',35.75,'2017-11-20');

INSERT INTO JOB
VALUES('501','Systems Analyst',96.75,'2017-11-20');

INSERT INTO JOB
VALUES('502','Database Designer',125.00,'2018-03-24');
```

#	JOB_CODE	JOB_DESCRIPTION	JOB_CHG_HOUR	JOB_LAST_UPDATE
1	500	Programmer	35.75	2017-11-20
2	501	Systems Analyst	96.75	2017-11-20
3	502	Database Designer	125.00	2018-03-24

Figure 2: Output result of the JOB table

d. Insert the first three records to the EMPLOYEE table:

```
INSERT INTO EMPLOYEE
VALUES('101', 'News', 'John', 'G','2000-11-08','502',17);

INSERT INTO EMPLOYEE
VALUES('102', 'Senior', 'David', 'H','1989-07-12','501',28);

INSERT INTO EMPLOYEE
VALUES('103', 'Arbough', 'June', 'E','1969-12-01','500',21);
```

#	EMP_NUM	EMP_LNAME	EMP_FNAME	EMP_INITIAL	EMP_HIREDATE	JOB_CODE	EMP_YEARS
1	101	News	John	G	2000-11-08	502	17
2	102	Senior	David	H	1989-07-12	501	28
3	103	Arbough	June	E	1969-12-01	500	21

Figure 3: Output result of the EMPLOYEE table

2. What happens if you create the EMPLOYEE table before the JOB table? Why?

If we create the EMPLOYEE table before the JOB table, the tables are not going to be created, because the foreign key in EMPLOYEE table references to JOB_CODE in JOB table, but it has not existed yet.

3. What happens if you add an employee record with a JOB_CODE not present in the JOB table? Why?

If we add an EMPLOYEE record with a JOB_CODE which does not present in the JOB table, the action cannot be done. Because that JOB_CODE record does not exist in the JOB table, it does not reference to there.