**CS579 A1**

**Database Management**

**PROJECT PART 2**

Team Members – Aditya Malik, Yi Lee

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**ER – Diagram:**

![Diagram

Description automatically generated]()

**Relational Database Schema:**

![Diagram

Description automatically generated]()

**Data Types:**

HEADQUARTER:

* name – VARCHAR (30)
* address – VARCHAR (50)
* phone\_no – INT

ORDERS:

* order\_no – INT
* date – DATE
* amount – DECIMAL (10,2)
* hq\_name – VARCHAR (30)

EMPLOYEE:

* id – INT
* name – VARCHAR (30)
* salary – DECIMAL (10,2)
* address – VARCHAR (50)
* classification – VARCHAR (10)
* dob – DATE

PAPER:

* type\_no – INT
* size – VARCHAR (10)
* weight – DECIMAL (5,2)
* unit\_price – DECIMAL (10,2)

BRANCH:

* hq\_name – VARCHAR (30)
* branch\_no – INT
* phone\_no – INT
* address – VARCHAR (50)

SUBORDER:

* order\_no – INT
* suborder\_no – INT
* ac\_ship\_date – DATE
* req\_ship\_date – DATE
* hq\_name – VARCHAR (30)
* branch\_no – INT

HANDLED\_BY:

* order\_no – INT
* emp\_id – INT

INCLUDES:

* type\_no – INT
* order\_no – INT
* suborder\_no – INT
* quantity – INT

**List of Constraints (All constraints can be seen in the create statements below):**

HEADQUARTER:

Primary key - name

ORDERS:

Primary Key – order\_no

Foreign Key – hq\_name references HEADQUARTER (name)

EMPLOYEE:

Primary Key – id

PAPER:

Primary Key – type\_no

BRANCH:

Primary Key – hq\_name, branch\_no

Foreign Key – hq\_name references HEADQUARTER (name)

SUBORDER:

Primary Key – order\_no, suborder\_no

Foreign Key – order\_no references ORDERS (order\_no), hq\_name, branch\_no references BRANCH (hq\_name, branch\_no)

HANDLED\_BY:

Primary Key – order\_no, emp\_id

Foreign Key - order\_no references ORDERS (order\_no), emp\_id references EMPLOYEE (id)

INCLUDES:

Primary Key – type\_no, order\_no, suborder\_no

Foreign Key – type\_no references PAPER (type\_no), order\_no, suborder\_no references SUBORDER (order\_no, suborder\_no)

**Create Statements:**

**CREATE TABLE** HEADQUARTER(

name VARCHAR(30) **NOT NULL**,

address VARCHAR(50),

phone\_no INT **CHECK** (phone\_no between 1000000000 and 9999999999),

**PRIMARY KEY**(name));

**CREATE TABLE** ORDERS(

order\_no INT **NOT NULL,**

date DATE **NOT NULL**,

amount DECIMAL(10,2) **NOT NULL**,

hq\_name VARCHAR(30) **NOT NULL**,

**PRIMARY KEY**(order\_no),

**FOREIGN KEY** (hq\_name) REFERENCES HEADQUARTER(name)

**ON DELETE** CASCADE **ON UPDATE** CASCADE);

**CREATE TABLE** EMPLOYEE(

id INT **NOT NULL**,

name VARCHAR(30) **NOT NULL**,

salary DECIMAL (10,2),

address VARCHAR(50),

classification VARCHAR(10) **NOT NULL**,

dob DATE **NOT NULL**,

**PRIMARY KEY**(id));

**CREATE TABLE** PAPER(

type\_no INT **NOT NULL**,

size INT **NOT NULL**,

weight INT **NOT NULL**,

unit\_price INT **NOT NULL**,

**PRIMARY KEY**(type\_no));

**CREATE TABLE** BRANCH(

hq\_name VARCHAR(30) **NOT NULL**,

branch\_no INT **NOT NULL UNIQUE**,

phone\_no INT **CHECK** (phone\_no between 1000000000 and 9999999999),

address VARCHAR(50),

**PRIMARY KEY** (hq\_name, branch\_no),

**FOREIGN KEY** (hq\_name) **REFERENCES** HEADQUARTER(name)

**ON DELETE** CASCADE **ON UPDATE** CASCADE);

**CREATE TABLE** SUBORDER(

order\_no INT **NOT NULL**,

suborder\_no INT **NOT NULL UNIQUE**,

ac\_ship\_date DATE **NOT NULL**,

req\_ship\_date DATE **NOT NULL**,

hq\_name VARCHAR(30) **NOT NULL**,

branch\_no INT **NOT NULL**,

**PRIMARY KEY** (order\_no, suborder\_no),

**CONSTRAINT** SUBFK1

**FOREIGN KEY** (order\_no) **REFERENCES** ORDERS(order\_no)

**ON DELETE** CASCADE **ON UPDATE** CASCADE,

**CONSTRAINT** SUBFK2

**FOREIGN KEY** (hq\_name) **REFERENCES** BRANCH(hq\_name)

**ON DELETE** CASCADE **ON UPDATE** CASCADE,

**CONSTRAINT** SUBFK3

**FOREIGN KEY** (branch\_no) **REFERENCES** BRANCH(branch\_no)

**ON DELETE** CASCADE **ON UPDATE** CASCADE);

**CREATE TABLE** HANDLED\_BY(

order\_no INT **NOT NULL**,

emp\_id INT **NOT NULL**,

**PRIMARY KEY** (order\_no, emp\_id),

**CONSTRAINT** HANDFK1

**FOREIGN KEY** (order\_no) **REFERENCES** ORDERS(order\_no)

**ON DELETE** CASCADE **ON UPDATE** CASCADE,

**CONSTRAINT** HANDFK2

**FOREIGN KEY** (emp\_id) **REFERENCES** EMPLOYEE(id)

**ON DELETE** CASCADE **ON UPDATE** CASCADE);

**CREATE TABLE** INCLUDES(

order\_no INT **NOT NULL**,

suborder\_no INT **NOT NULL**,

type\_no INT **NOT NULL**,

quantity INT,

**PRIMARY KEY** (order\_no, suborder\_no, type\_no),

**CONSTRAINT** INCFK1

**FOREIGN KEY** (order\_no) **REFERENCES** SUBORDER(order\_no)

**ON DELETE** CASCADE **ON UPDATE** CASCADE,

**CONSTRAINT** INCFK2

**FOREIGN KEY** (suborder\_no) **REFERENCES** SUBORDER(suborder\_no)

**ON DELETE** CASCADE **ON UPDATE** CASCADE,

**CONSTRAINT** INCFK3

**FOREIGN KEY** (type\_no) **REFERENCES** PAPER(type\_no)

**ON DELETE** CASCADE **ON UPDATE** CASCADE);