

## Quiz 8: Constraints &amp; Views (10 points), 10 minutes

Consider three tables W, H, and D, storing the weight (in pounds), height (in centimeters), and demographic information (gender and age) of people. Example data are shown below.

Name	Weight
John	170
Mary	110
David	180

(a) Table W

Name	Height
John	175
Mary	160
Bill	170

(b) Table H

Name	Gender	Age
John	M	30
Mary	F	25
Bill	M	20
David	M	28

(c) Table D

Suppose all three tables have the “name” attribute as the primary key. In addition, “name” attributes of tables W and H are foreign keys referring to “name” of table D.

1. [3 points] Write the “create table ...” command for tables W and H. Using the “cascade” method to enforce the foreign key constraints.

Create Table W (

```
Name varchar(50),
Height int(5) DEFAULT NULL,
PRIMARY KEY (Name),
FOREIGN KEY (Name) REFERENCES D(Name)
ON DELETE CASCADE
ON UPDATE CASCADE
```

);

Create Table H (

```
Name varchar(50),
Height int(5) DEFAULT NULL,
PRIMARY KEY (Name),
FOREIGN KEY (Name) REFERENCES D(Name)
ON DELETE CASCADE
ON UPDATE CASCADE
```

);

2. [2 points] Can we use the “set null” method instead? Explain your answer.


No, primary key cannot be null in W or H table. If we use the “set null” method, any update/delete on the name in table D will then set the same name in table W or H to null

In a database management system (DBMS), the **SET NULL** method or operation is used to set the value of a column or set of columns to **NULL** for one or more rows in a table.

The **SET NULL** operation is typically used when updating data in a table. It allows you to explicitly replace the existing value(s) of a column with the **NULL** value, which represents an absence of data or an unknown value.

The syntax for using the **SET NULL** method in SQL (Structured Query Language) typically follows this pattern:

sql

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```
UPDATE table_name
SET column1 = NULL, column2 = NULL, ...
WHERE condition;
```

Here's a breakdown of the syntax:

- **UPDATE table\_name**: Specifies the name of the table you want to modify.
- **SET column1 = NULL, column2 = NULL, ...**: Specifies the columns you want to set to **NULL** and assigns the **NULL** value to them.
- **WHERE condition**: An optional clause that filters the rows to be updated based on a specified condition. If omitted, the **SET NULL** operation will be applied to all rows in the table.

Name: \_\_\_\_\_

USC ID: \_\_\_\_\_

3. [3 points] Write a view named WHD that generates the name, weight, height for males who is 25 or older.

Create View WHD AS

```
select D.Name, W.Weight, H.Height from W,H,D
```

```
where D.Name = W.Name and D.Name = H.Name and D.Age >= 25 and D.Gender = "M";
```

4. [2 points] Write an SQL query that uses the above view to find the name and weight of males whose age is between 25 and 30.

```
select WHD.Name, WHD.Weight from WHD, D
```

```
where WHD.Name = D.Name and D.Age <= 30;
```

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