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Quiz 8: Constraints & 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

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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;
```