

**FLASHBACK: WE ALSO SPOKE ABOUT  
TWO RELATED TABLES..**

**..BUT INTENTIONALLY GLOSSED OVER  
EXACTLY WHAT THAT RELATIONSHIP  
WAS**

# WE ALREADY HAVE A TABLE WITH STUDENT DATA

COLUMNS ARE NAMED 'STUDENTID', 'FIRSTNAME', 'LASTNAME', 'GENDER' AND 'EMAIL'

| StudentID | FirstName | LastName   | Gender | Email  |
|-----------|-----------|------------|--------|--|
| 1         | Janani    | Ravi       | F      | <a href="mailto:janani@loonycorn.com">janani@loonycorn.com</a>   |
| 2         | Swetha    | Kolalapudi | F      | <a href="mailto:swetha@loonycorn.com">swetha@loonycorn.com</a>   |
| 3         | Navdeep   | Singh      | M      | <a href="mailto:navdeep@loonycorn.com">navdeep@loonycorn.com</a> |
| 4         | Vitthal   | Srinivasan | M      | <a href="mailto:vitthal@loonycorn.com">vitthal@loonycorn.com</a> |

THIS IS A TABLE NAMED 'STUDENTS'

LET'S SAY WE HAVE ANOTHER TABLE WITH ADDRESS DATA  
COLUMNS ARE NAMED 'STUDENTID', 'DORMITORYNAME', 'APTNUMBER'

| StudentID | DormitoryName | AptNumber |
|-----------|---------------|-----------|
| 1         | Gandhi House  | 110       |
| 2         | Akbar Hall    | 231       |
| 3         | Gandhi House  | 345       |
| 4         | NULL          | NULL      |

THIS IS A TABLE NAMED 'CAMPUS\_HOUSING'

# SO! WE HAVE TWO TABLES NOW

THIS IS A TABLE NAMED 'CAMPUS\_HOUSING'

| StudentID | DormitoryName | AptNumber |
|-----------|---------------|-----------|
| 1         | Gandhi House  | 110       |
| 2         | Akbar Hall    | 231       |
| 3         | Gandhi House  | 345       |
| 4         | NULL          | NULL      |

COLUMNS ARE NAMED 'STUDENTID',  
'DORMITORYNAME', 'APTNUMBER'

THIS IS A TABLE NAMED 'STUDENTS'

| StudentID | FirstName | LastName   | Gender | Email                  |
|-----------|-----------|------------|--------|------------------------|
| 1         | Janani    | Ravi       | F      | janani@loonycorn.com   |
| 2         | Swetha    | Kolalapudi | F      | swetha@loonycorn.com   |
| 3         | Navdeep   | Singh      | M      | navdeep@loonyvcorn.com |
| 4         | Vitthal   | Srinivasan | M      | vitthal@loonycorn.com  |

COLUMNS ARE NAMED  
'STUDENTID', 'FIRSTNAME',  
'LASTNAME', 'GENDER' AND 'EMAIL'

# THE TWO TABLES ARE LINKED VIA THE COLUMN STUDENTID

| StudentID | DormitoryName | AptNumber |
|-----------|---------------|-----------|
| 1         | Gandhi House  | 110       |
| 2         | Akbar Hall    | 231       |
| 3         | Gandhi House  | 345       |
| 4         | NULL          | NULL      |

| StudentID | FirstName | LastName   | Gender | Email  |
|-----------|-----------|------------|--------|--|
| 1         | Janani    | Ravi       | F      | <a href="mailto:janani@loonycorn.com">janani@loonycorn.com</a>   |
| 2         | Swetha    | Kolalapudi | F      | <a href="mailto:swetha@loonycorn.com">swetha@loonycorn.com</a>   |
| 3         | Navdeep   | Singh      | M      | <a href="mailto:navdeep@loonvcorn.com">navdeep@loonvcorn.com</a> |
| 4         | Vitthal   | Srinivasan | M      | <a href="mailto:vitthal@loonycorn.com">vitthal@loonycorn.com</a> |

# THE TWO TABLES ARE LINKED VIA THE COLUMN STUDENTID

| StudentID | DormitoryNa  | AptNumber |
|-----------|--------------|-----------|
| 1         | Gandhi House | 110       |
| 2         | Akbar Hall   | 231       |
| 3         | Gandhi House | 345       |
| 4         | NULL         | NULL      |

| StudentID | FirstName | LastName   | Gender | Email                 |
|-----------|-----------|------------|--------|-----------------------|
| 1         | Janani    | Ravi       | F      | janani@loonycorn.com  |
| 2         | Swetha    | Kolalapudi | F      | swetha@loonycorn.com  |
| 3         | Navdeep   | Singh      | M      | navdeep@loonycorn.com |
| 4         | Vitthal   | Srinivasan | M      | vitthal@loonycorn.com |

# WHAT EXACTLY IS THE LINK BETWEEN THESE TWO TABLES?

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TWO TABLES?

THE TABLE STUDENTS CONTAINS  
ONE ROW PER STUDENT.

THE TABLE CAMPUS\_HOUSING CONTAINS ONE ROW  
FOR THE HOUSING INFORMATION OF EACH STUDENT

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QUICK ASIDE: DO WE REALLY NEED TWO  
TABLES?

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YES. MORE LATER :-)

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CONTAIN ROWS FOR STUDENTS WHO EXIST IN  
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WHY? BECAUSE THE CAMPUS\_HOUSING TABLE  
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TO THE STUDENTS TABLE.

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WHY? BECAUSE THE CAMPUS\_HOUSING TABLE  
ONLY MAKES SENSE WHEN VIEWED IN RELATION  
TO THE STUDENTS TABLE.

THE STUDENTS TABLE WILL EXIST EVEN IF THE  
CAMPUS\_HOUSING TABLE DOES NOT, BUT THE  
REVERSE IS NOT TRUE

THE CAMPUS\_HOUSING TABLE SHOULD ONLY  
CONTAIN ROWS FOR STUDENTS WHO EXIST IN  
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WHY? BECAUSE THE CAMPUS\_HOUSING TABLE  
ONLY MAKES SENSE WHEN VIEWED IN RELATION  
TO THE STUDENTS TABLE.

THE STUDENTS TABLE WILL EXIST EVEN IF THE  
CAMPUS\_HOUSING TABLE DOES NOT, BUT THE  
REVERSE IS NOT TRUE

EACH VALUE IN THE STUDENTID COLUMN OF  
CAMPUS\_HOUSING **MUST** ALREADY EXIST IN THE  
STUDENTID COLUMN OF THE STUDENTS TABLE

# THE TWO TABLES ARE LINKED VIA THE COLUMN STUDENTID

| StudentID | DormitoryNa  | AptNumber |
|-----------|--------------|-----------|
| 1         | Gandhi House | 110       |
| 2         | Akbar Hall   | 231       |
| 3         | Gandhi House | 345       |
| 4         | NULL         | NULL      |

| StudentID | FirstName | LastName   | Gender | Email                 |
|-----------|-----------|------------|--------|-----------------------|
| 1         | Janani    | Ravi       | F      | janani@loonycorn.com  |
| 2         | Swetha    | Kolalapudi | F      | swetha@loonycorn.com  |
| 3         | Navdeep   | Singh      | M      | navdeep@loonycorn.com |
| 4         | Vitthal   | Srinivasan | M      | vitthal@loonycorn.com |

EACH VALUE IN THE STUDENTID COLUMN OF CAMPUS\_HOUSING **MUST** ALREADY EXIST IN THE STUDENTID COLUMN OF THE STUDENTS TABLE

# THE TWO TABLES ARE LINKED VIA THE COLUMN STUDENTID

| StudentID | DormitoryNa  | AptNumber |
|-----------|--------------|-----------|
| 1         | Gandhi House | 110       |
| 2         | Akbar Hall   | 231       |
| 3         | Gandhi House | 345       |
| 4         | NULL         | NULL      |

| StudentID | FirstName | LastName   | Gender | Email                 |
|-----------|-----------|------------|--------|-----------------------|
| 1         | Janani    | Ravi       | F      | janani@loonycorn.com  |
| 2         | Swetha    | Kolalapudi | F      | swetha@loonycorn.com  |
| 3         | Navdeep   | Singh      | M      | navdeep@loonycorn.com |
| 4         | Vitthal   | Srinivasan | M      | vitthal@loonycorn.com |

EACH VALUE IN THE STUDENTID COLUMN OF CAMPUS\_HOUSING **MUST** ALREADY EXIST IN THE STUDENTID COLUMN OF THE STUDENTS TABLE

# THE TWO TABLES ARE LINKED VIA THE COLUMN STUDENTID

| StudentID | DormitoryNa  | AptNumber |
|-----------|--------------|-----------|
| 1         | Gandhi House | 110       |
| 2         | Akbar Hall   | 231       |
| 3         | Gandhi House | 345       |
| 4         | NULL         | NULL      |

| StudentID | FirstName | LastName   | Gender | Email                 |
|-----------|-----------|------------|--------|-----------------------|
| 1         | Janani    | Ravi       | F      | janani@loonycorn.com  |
| 2         | Swetha    | Kolalapudi | F      | swetha@loonycorn.com  |
| 3         | Navdeep   | Singh      | M      | navdeep@loonycorn.com |
| 4         | Vitthal   | Srinivasan | M      | vitthal@loonycorn.com |

EACH VALUE IN THE STUDENTID COLUMN OF CAMPUS\_HOUSING **MUST** ALREADY EXIST IN THE STUDENTID COLUMN OF THE STUDENTS TABLE

THE TWO TABLES ARE LINKED VIA THE COLUMN STUDENTID

| StudentID | DormitoryNa  | AptNumber |
|-----------|--------------|-----------|
| 1         | Gandhi House | 110       |
| 2         | Akbar Hall   | 231       |
| 3         | Gandhi House | 345       |
| 4         | NULL         | NULL      |

| StudentID | FirstName | LastName   | Gender | Email                 |
|-----------|-----------|------------|--------|-----------------------|
| 1         | Janani    | Ravi       | F      | janani@loonycorn.com  |
| 2         | Swetha    | Kolalapudi | F      | swetha@loonycorn.com  |
| 3         | Navdeep   | Singh      | M      | navdeep@loonycorn.com |
| 4         | Vitthal   | Srinivasan | M      | vitthal@loonycorn.com |

EACH VALUE IN THE STUDENTID COLUMN OF CAMPUS\_HOUSING **MUST** ALREADY EXIST IN THE STUDENTID COLUMN OF THE STUDENTS TABLE

THE TWO TABLES ARE LINKED VIA THE COLUMN STUDENTID

| StudentID | DormitoryNa  | AptNumber |
|-----------|--------------|-----------|
| 1         | Gandhi House | 110       |
| 2         | Akbar Hall   | 231       |
| 3         | Gandhi House | 345       |
| 4         | NULL         | NULL      |

| StudentID | FirstName | LastName   | Gender | Email                 |
|-----------|-----------|------------|--------|-----------------------|
| 1         | Janani    | Ravi       | F      | janani@loonycorn.com  |
| 2         | Swetha    | Kolalapudi | F      | swetha@loonycorn.com  |
| 3         | Navdeep   | Singh      | M      | navdeep@loonycorn.com |
| 4         | Vitthal   | Srinivasan | M      | vitthal@loonycorn.com |

EACH VALUE IN THE STUDENTID COLUMN OF CAMPUS\_HOUSING **MUST** ALREADY EXIST IN THE STUDENTID COLUMN OF THE STUDENTS TABLE

THE TWO TABLES ARE LINKED VIA THE COLUMN STUDENTID

| StudentID | DormitoryNa  | AptNumber |
|-----------|--------------|-----------|
| 1         | Gandhi House | 110       |
| 2         | Akbar Hall   | 231       |
| 3         | Gandhi House | 345       |
| 4         | NULL         | NULL      |

| StudentID | FirstName | LastName   | Gender | Email                 |
|-----------|-----------|------------|--------|-----------------------|
| 1         | Janani    | Ravi       | F      | janani@loonycorn.com  |
| 2         | Swetha    | Kolalapudi | F      | swetha@loonycorn.com  |
| 3         | Navdeep   | Singh      | M      | navdeep@loonycorn.com |
| 4         | Vitthal   | Srinivasan | M      | vitthal@loonycorn.com |

WE COULD ADD ROWS TO STUDENTS WITHOUT  
ADDING THEM TO CAMPUS\_HOUSING..

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| StudentID | DormitoryNa  | AptNumber |
|-----------|--------------|-----------|
| 1         | Gandhi House | 110       |
| 2         | Akbar Hall   | 231       |
| 3         | Gandhi House | 345       |
| 4         | NULL         | NULL      |

AND THE CONTENTS OF THE 2 TABLES WOULD STILL MAKE SENSE..

| StudentID | FirstName | LastName   | Gender | Email  |
|-----------|-----------|------------|--------|--|
| 1         | Janani    | Ravi       | F      | <a href="mailto:janani@loonycorn.com">janani@loonycorn.com</a>   |
| 2         | Swetha    | Kolalapudi | F      | <a href="mailto:swetha@loonycorn.com">swetha@loonycorn.com</a>   |
| 3         | Navdeep   | Singh      | M      | <a href="mailto:navdeep@loonycorn.com">navdeep@loonycorn.com</a> |
| 4         | Vitthal   | Srinivasan | M      | <a href="mailto:vitthal@loonycorn.com">vitthal@loonycorn.com</a> |
| 5         | Ahmad     | Mateen     | NULL   | <a href="mailto:mateenwa@gmail.com">mateenwa@gmail.com</a>       |
| 99        | Anu       | Radha      | NULL   | <a href="mailto:anuradha@gmail.com">anuradha@gmail.com</a>       |
| 100       | Pradeep   | Shetty     | NULL   | <a href="mailto:pradeep@loonycorn.com">pradeep@loonycorn.com</a> |

WE COULD ADD ROWS TO STUDENTS WITHOUT  
ADDING THEM TO CAMPUS\_HOUSING..

AND THE CONTENTS OF THE 2  
TABLES WOULD STILL MAKE SENSE..

MAKE SENSE IS NOT A TECHNICAL  
TERM - JUST COMMON SENSE!

BUT THIS ALSO HAS A TECHNICAL  
TERM (MORE IN A MINUTE)

WE COULD ADD ROWS TO STUDENTS WITHOUT  
ADDING THEM TO CAMPUS\_HOUSING..

AND THE CONTENTS OF THE 2  
TABLES WOULD STILL MAKE SENSE..

BUT IF WE ADDED ROWS TO CAMPUS\_HOUSING  
WITHOUT ADDING THEM TO STUDENTS..

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WITHOUT ADDING THEM TO STUDENTS..

| StudentID | DormitoryName        | RoomNumber |
|-----------|----------------------|------------|
| 1         | Ganesh House         | 110        |
| 2         | Akbar Hall           | 231        |
| 3         | Ganesh House         | 345        |
| 4         | The Bat Cave, Gotham | 1007       |
| 666       |                      |            |

STUDENTID **666** DOES NOT APPEAR IN  
THE STUDENTS DATABASE!

| StudentID | FirstName | LastName   | Gender | Email                 |
|-----------|-----------|------------|--------|-----------------------|
| 1         | Janani    | Ravi       | F      | janani@loonycorn.com  |
| 2         | Swetha    | Sakshi     | F      | swetha@loonycorn.com  |
| 3         | Navdeep   | Singh      | M      | navdeep@loonycorn.com |
| 4         | Utttha    | Prinavasan | M      | uttthal@loonycorn.com |
| 5         | Ahmed     | Mateen     | NUL    | mataeenwa@gmail.com   |
| 9         | Alice     | Padma      | NUL    | aliceash@gmail.com    |
| 100       | Pradeep   | Shetty     | NUL    | pradeep@loonycorn.com |

HOLY IMPOSSIBILITY!!  
THERE'S A STUDENT MISSING FROM THE  
STUDENTS TABLE - AND IT MAYBE BATMAN!

BUT IF WE ADDED ROWS TO CAMPUS\_HOUSING  
WITHOUT ADDING THEM TO STUDENTS..

| StudentID | DormitoryName        | ApartmentNumber |
|-----------|----------------------|-----------------|
| 1         | Gandhi House         | 100             |
| 2         | Akbar Hall           | 231             |
| 3         | Gandhi House         | 345             |
| 4         | NULL                 | NULL            |
| 666       | The Bat Cave, Gotham | 1007            |

THE CONTENTS  
WOULD NOT

OF THE 2 TABLES  
MAKE SENSE..

| StudentID | FirstName | LastName   | Gender | Email                 |
|-----------|-----------|------------|--------|-----------------------|
| 1         | Janani    | Ravi       | F      | janani@loonycorn.com  |
| 2         | Swetha    | Kolalapudi | F      | swetha@loonycorn.com  |
| 3         | Navdeep   | Singh      | M      | navdeep@loonycorn.com |
| 4         | Vitthal   | Srinivasan | M      | vitthal@loonycorn.com |
| 5         | Ahmad     | Mateen     | NULL   | mateenwa@gmail.com    |
| 99        | Anu       | Radha      | NULL   | anuradha@gmail.com    |
| 100       | Pradeep   | Shetty     | NULL   | pradeep@loonycorn.com |

BUT IF WE ADDED ROWS TO CAMPUS\_HOUSING  
WITHOUT ADDING THEM TO STUDENTS..

THE CONTENTS OF THE 2 TABLES  
WOULD NOT MAKE SENSE..

AND THIS NEEDS TO BE EXPLICITLY  
SPECIFIED IN  
THE TABLE SPECIFICATION OF THE  
CAMPUS\_HOUSING TABLE

# THE TABLE SPECIFICATION OF THE CAMPUS\_HOUSING TABLE

THAT GETS US TO THE SQL CREATE TABLE  
STATEMENT FOR A TABLE LIKE THIS..

| StudentID | DormitoryName | AptNumber |
|-----------|---------------|-----------|
|           |               |           |

# HOW DO WE CREATE TABLES?

THAT GETS US TO THE SQL **CREATE TABLE** STATEMENT FOR A TABLE LIKE THIS..

| StudentID | DormitoryName | AptNumber |
|-----------|---------------|-----------|
|           |               |           |

```
CREATE TABLE Campus_Housing
(
    StudentID INT NOT NULL,
    DormitoryName VARCHAR(50) ,
    AptNumber INT ,
    CONSTRAINT fk_students_studentid
    FOREIGN KEY (StudentID)
    REFERENCES Students (StudentID)
)
```

# HOW DO WE CREATE TABLES?

THAT GETS US TO THE SQL **CREATE TABLE** STATEMENT FOR A TABLE LIKE THIS..

| StudentID | DormitoryName | AptNumber |
|-----------|---------------|-----------|
|           |               |           |

**CREATE TABLE Campus\_Housing**

```
(  
    StudentID INT NOT NULL,  
    DormitoryName VARCHAR(50),  
    AptNumber INT,  
    CONSTRAINT fk_students_studentid  
        FOREIGN KEY (StudentID)  
            REFERENCES Students (StudentID)  
)
```

THIS BIT IS PRETTY STANDARD..

# HOW DO WE CREATE TABLES?

THAT GETS US TO THE SQL **CREATE TABLE** STATEMENT FOR A TABLE LIKE THIS..

| StudentID | DormitoryName | AptNumber |
|-----------|---------------|-----------|
|           |               |           |

CREATE TABLE Campus\_Housing

(

**StudentID INT NOT NULL,**  
    **DormitoryName VARCHAR(50) ,**  
    **AptNumber INT ,**

        CONSTRAINT fk\_students\_studentid

            FOREIGN KEY (StudentID)

                REFERENCES Students (StudentID)

)

AND SO ARE THE  
COLUMN SPECS

# HOW DO WE CREATE TABLES?

THAT GETS US TO THE SQL **CREATE TABLE** STATEMENT FOR A TABLE LIKE THIS..

| StudentID | DormitoryName | AptNumber |
|-----------|---------------|-----------|
|           |               |           |

```
CREATE TABLE Campus_Housing
(
    StudentID INT NOT NULL,
    DormitoryName VARCHAR(50),
    AptNumber INT,
    CONSTRAINT fk_students_studentid
    FOREIGN KEY (StudentID)
    REFERENCES Students (StudentID)
)
```

NOTE THAT STUDENTID  
WON'T ACCEPT NULLS, BUT  
THE OTHER COLUMNS WILL

# HOW DO WE CREATE TABLES?

THAT GETS US TO THE SQL CREATE TABLE STATEMENT FOR A TABLE LIKE THIS..

| StudentID | DormitoryName | AptNumber |
|-----------|---------------|-----------|
|           |               |           |

CREATE TABLE Campus\_Housing

(  
StudentID INT NOT NULL,  
DormitoryName VARCHAR(50) ,  
AptNumber INT ,

**CONSTRAINT fk\_students\_studentid  
FOREIGN KEY (StudentID)  
REFERENCES Students (StudentID)**

BUT THIS IS WHERE IT  
GETS SUPER-  
INTERESTING

)

**THIS LINE CREATES THE LINK BETWEEN  
CAMPUS\_HOUSING AND STUDENTS**

## Campus\_Housing

| StudentID | DormitoryName | AptNumber |
|-----------|---------------|-----------|
|           |               |           |



## Students

| StudentID | FirstName | LastName | Gender | Email |
|-----------|-----------|----------|--------|-------|
|           |           |          |        |       |

```
CREATE TABLE Campus_Housing
(
    StudentID INT NOT NULL,
    DormitoryName VARCHAR(50),
    AptNumber INT,
```

**CONSTRAINT fk\_students\_studentid  
FOREIGN KEY (StudentID)  
REFERENCES Students (StudentID)**

**THIS LINE CREATES THE LINK BETWEEN  
CAMPUS\_HOUSING AND STUDENTS**

## Campus\_Housing

| StudentID | DormitoryName | AptNumber |
|-----------|---------------|-----------|
|           |               |           |



## Students

| StudentID | FirstName | LastName | Gender | Email |
|-----------|-----------|----------|--------|-------|
|           |           |          |        |       |

```
CREATE TABLE Campus_Housing
(
    StudentID INT NOT NULL,
    DormitoryName VARCHAR(50),
    AptNumber INT,
```

**CONSTRAINT fk\_students\_studentid  
FOREIGN KEY (StudentID)  
REFERENCES Students (StudentID)**

THIS LINE CREATES A CONSTRAINT, THAT MUST BE SATISFIED BY THE TABLE CAMPUS\_HOUSING

Campus\_Housing

| StudentID | DormitoryName | AptNumber |
|-----------|---------------|-----------|
|           |               |           |

CREATE TABLE Campus\_Housing

```
(  
    StudentID INT NOT NULL,  
    DormitoryName VARCHAR(50),  
    AptNumber INT,
```

**CONSTRAINT fk\_students\_studentid  
FOREIGN KEY (StudentID)  
REFERENCES Students (StudentID)**

)

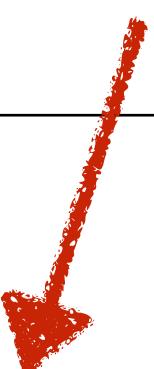
Students

| StudentID | FirstName | LastName | Gender | Email |
|-----------|-----------|----------|--------|-------|
|           |           |          |        |       |

THIS LINE CREATES A **CONSTRAINT**, THAT MUST BE SATISFIED BY THE TABLE **CAMPUS\_HOUSING**

**Campus\_Housing**

| StudentID | DormitoryName | AptNumber |
|-----------|---------------|-----------|
|           |               |           |



**Students**

| StudentID | FirstName | LastName | Gender | Email |
|-----------|-----------|----------|--------|-------|
|           |           |          |        |       |

THAT CONSTRAINT IS THAT: EACH VALUE IN THE STUDENTID COLUMN OF CAMPUS\_HOUSING **MUST** ALREADY EXIST IN THE STUDENTID COLUMN OF THE STUDENTS TABLE

THIS LINE CREATES A **CONSTRAINT**, THAT MUST BE SATISFIED BY THE TABLE **CAMPUS\_HOUSING**

THAT CONSTRAINT IS THAT: EACH VALUE IN THE **STUDENTID** COLUMN OF **CAMPUS\_HOUSING** **MUST** ALREADY EXIST IN THE **STUDENTID** COLUMN OF THE STUDENTS TABLE

**Campus\_Housing**

| StudentID | DormitoryName | AptNumber |
|-----------|---------------|-----------|
|           |               |           |

**Students**

| StudentID | FirstName | LastName | Gender | Email |
|-----------|-----------|----------|--------|-------|
|           |           |          |        |       |

SUCH CONSTRAINTS ARE CALLED FOREIGN KEY CONSTRAINTS, OR REFERENTIAL INTEGRITY CONSTRAINTS

THIS LINE CREATES A **CONSTRAINT**, THAT MUST BE SATISFIED BY THE TABLE **CAMPUS\_HOUSING**

THAT CONSTRAINT IS THAT: EACH VALUE IN THE **STUDENTID** COLUMN OF **CAMPUS\_HOUSING** **MUST** ALREADY EXIST IN THE **STUDENTID** COLUMN OF THE STUDENTS TABLE

SUCH CONSTRAINTS ARE CALLED FOREIGN KEY CONSTRAINTS, OR REFERENTIAL INTEGRITY CONSTRAINTS

**Campus\_Housing**

| StudentID | DormitoryName | AptNumber |
|-----------|---------------|-----------|
|           |               |           |



**Students**

| StudentID | FirstName | LastName | Gender | Email |
|-----------|-----------|----------|--------|-------|
|           |           |          |        |       |

“FOREIGN KEY” BECAUSE THE CONSTRAINT IS ABOUT A COLUMN THAT IS A KEY IN ANOTHER TABLE

THIS LINE CREATES A **CONSTRAINT**, THAT MUST BE SATISFIED BY THE TABLE **CAMPUS\_HOUSING**

THAT CONSTRAINT IS THAT: EACH VALUE IN THE STUDENTID COLUMN OF CAMPUS\_HOUSING **MUST** ALREADY EXIST IN THE STUDENTID COLUMN OF THE STUDENTS TABLE

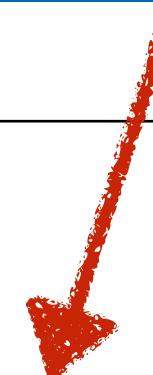
SUCH CONSTRAINTS ARE CALLED FOREIGN KEY CONSTRAINTS, OR REFERENTIAL INTEGRITY CONSTRAINTS

“FOREIGN KEY” BECAUSE THE CONSTRAINT IS ABOUT A COLUMN THAT IS A KEY IN ANOTHER TABLE

“REFERENTIAL INTEGRITY” BECAUSE ONE TABLE REFERS TO ANOTHER TO CHECK ITS INTEGRITY

Campus\_Housing

| StudentID | DormitoryName | AptNumber |
|-----------|---------------|-----------|
|           |               |           |



Students

| StudentID | FirstName | LastName | Gender | Email |
|-----------|-----------|----------|--------|-------|
|           |           |          |        |       |

# Campus\_Housing

| StudentID | DormitoryName | AptNumber |
|-----------|---------------|-----------|
|           |               |           |



## Students

| StudentID | FirstName | LastName | Gender | Email |
|-----------|-----------|----------|--------|-------|
|           |           |          |        |       |

Students . StudentID is a key in Students and referenced by Campus\_Housing . StudentID to check if its integrity is maintained

**Students . StudentID** is a key in Students and referenced by **Campus Housing . StudentID** to check if its integrity is maintained

**Campus\_Housing**

| StudentID | DormitoryName | AptNumber |
|-----------|---------------|-----------|
|           |               |           |
|           |               |           |

**Students**

| StudentID | FirstName | LastName | Gender | Email |
|-----------|-----------|----------|--------|-------|
|           |           |          |        |       |
|           |           |          |        |       |

CREATE TABLE Campus\_Housing

```
    < StudentID INT NOT NULL,  
      DormitoryName VARCHAR(50),  
      AptNumber INT,
```

CONSTRAINT fk\_students\_studentid  
FOREIGN KEY **(StudentID)**  
REFERENCES Students (StudentID)

)

**Students . StudentID** is a key in Students and referenced by Campus\_Housing . StudentID to check if its integrity is maintained

## Campus\_Housing

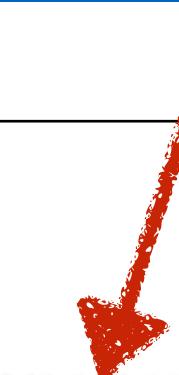
| StudentID | DormitoryName | AptNumber |
|-----------|---------------|-----------|
|           |               |           |

```
CREATE TABLE Campus_Housing  
(  
    StudentID INT NOT NULL,  
    DormitoryName VARCHAR(50) ,  
    AptNumber INT ,
```

**CONSTRAINT fk\_students\_studentid  
FOREIGN KEY (StudentID)**

**REFERENCES Students (StudentID)**

| StudentID | FirstName | LastName | Gender | Email |
|-----------|-----------|----------|--------|-------|
|           |           |          |        |       |



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## Campus\_Housing

| StudentID | DormitoryName | AptNumber |
|-----------|---------------|-----------|
|           |               |           |

## Students

| StudentID | FirstName | LastName | Gender | Email |
|-----------|-----------|----------|--------|-------|
|           |           |          |        |       |

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OKEY-DOKEY - SO HOW CAN WE CREATE DATABASES AND TABLES, AND PUT STUFF INTO THEM?

AHA! THAT'S AN AMAZING QUESTION.

IN FACT, ITS THREE AMAZING QUESTIONS

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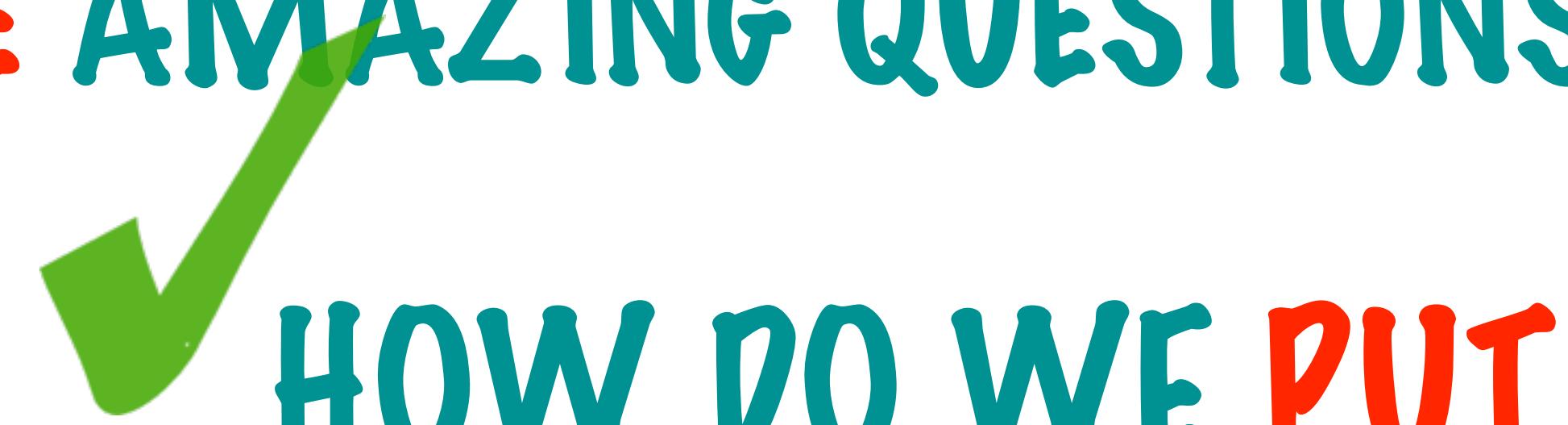
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