

# Intro to SQL

Final Week

# Foreign Keys

- Reminder: Foreign Keys are when one table references another

Customers			
ID	CustomerName	CustomerAge	CustomerCountry
1	Salvador	23	Brazil
2	Lawrence	60	China
3	Ernest	38	India

CustomerOrders			
ID	OrderDate	CustomerID	Amout
1	2019-04-29 00:00:00.000	1	968
2	2019-05-10 00:00:00.000	2	898
3	2019-10-21 00:00:00.000	3	47

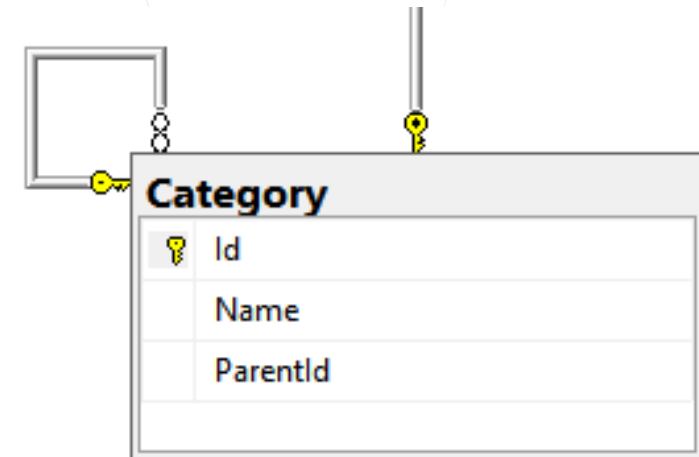
# Parent Ids

- Parent Ids are self-referential

When a table has a foreign key back to itself

Ex: When publishing books with multiple sequels, the 'child' entries will set the `parent_id` as the main book first published

	Id	Name	Order	ParentId
1	1	Level 1 - 1	1	NULL
2	2	Level 1 - 2	2	NULL
3	3	Level 1 - 3	3	NULL
4	4	Level 2 - 1	1	3
5	5	Level 2 - 2	2	3
6	6	Level 3 - 1	3	4
7	7	Level 4 - 1	1	6
8	8	Level 1 - 4	4	NULL
9	9	Level 1 - 5	5	NULL
10	10	Level 1 - 6	6	NULL



# More SQL functions\Clauses

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## SQL Function: Sum, Aliases & Pseudo Cols

```
Select
product.name,
sum(product.amount) as
sumamt,
count(product.amount) as
totalproducts,
FROM
product left join type
group by type.name
order by type.name
```

<https://www.sqlshack.com>

## AVG

```
Select avg(orders.amount)
from orders
```

## Distinct

```
Select distinct names from
product;
```

## LIMIT

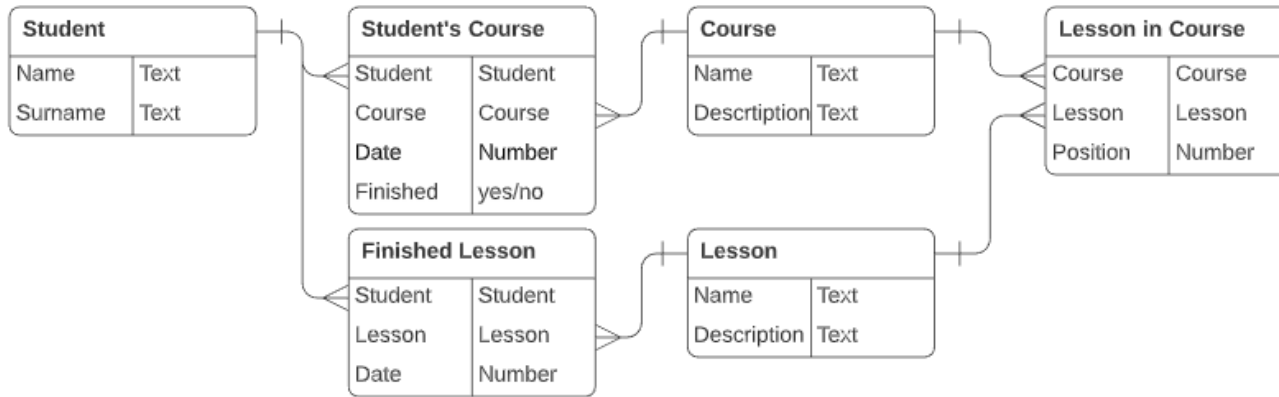
```
Select names from product
LIMIT 5;
```

## SQL FUNCTION: UPPER & DOING MATH

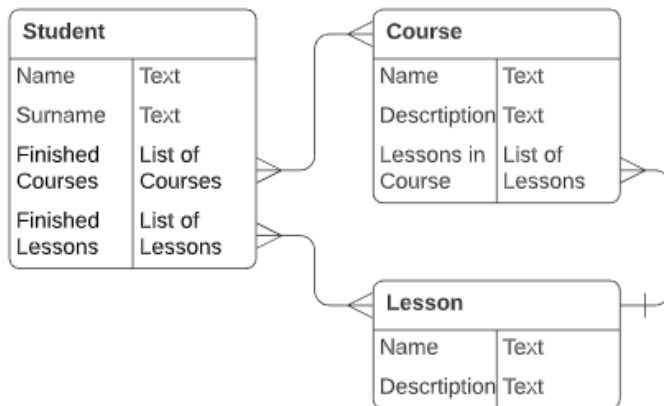
```
CREATE VIEW vw_invoice as
select products.id,
upper(products.name),
type.name,
orders.productamount,
users.username ,
orders.productamount * products.cost
as totalcost
FROM
products
join type on products.typeid=type.id
join orders on products.id =
orders.productid
join users on orders.userid =
users.userid
```

# 1. Identify the db you want to build<sup>5</sup>

## Approach 1



## Approach 2



This database should have at least three-four tables. This database should contain at least a main table and a type table.

Focus on your hobby or profession and create a database to track that information

- Do you like sports? Build a database to track NBA team members, their teams and locations
- Do you like watching TV? Recreate IMDB or Netflix
- Like shopping? building an ecommerce site like Coach USA, Amazon or Walmart (with fields of productname, producttype, productcost)

Once you've identified the type of database to create

1. Identify the name of the database, the names of the tables, the fields and their types.
2. Make certain each table has a primary key
3. Write this down or enter into word, excel or lucidcharts

REMINDER: YOU CANNOT USE SPACES OR SPECIAL CHARACTERS (slashes, asterisks) in the name of any database object

## 2. Build your db tables!

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1. Open Sql Lite
2. Click create new db - enter the name of your database  
i.e. ecommerce.db or sports.db
3. Now create your tables either with SQL or the UI

### Sample DB Structure

```
create table TABLERNAME
(  
  COLUMNNAME integer NOT NULL PRIMARY KEY,  
  COLUMNNAME DATATYPE  
);
```

### Sample Code

```
create table product (  
  id integer NOT NULL PRIMARY KEY,  
  name varchar(255),  
  description varchar(255),  
  cost double,  
  typeid integer  
);
```

### #3. INSERT DATA

Insert 4 rows of sample data into your database

Structure:

```
INSERT INTO TABLENAME (col1, col2) values  
(value1, value2, ...)
```

Example:

```
INSERT INTO DOGS (id, name) values (1, 'spot');
```

### #4. BUILD SQL

Run a couple sample queries.  
Select \* from YOURTABLENAME;

**Select data alphabetically**

```
SELECT column1, column2 FROM YOURTABLE  
ORDER BY column1;
```

**Do a pattern match search on the title field**

- ```
SELECT column1, column2, column3 FROM  
YOURTABLE WHERE column1 LIKE  
'%YOURSEARCHWORD% ';
```