

- ❖ Define your models and their attributes in `db/models.yml`
- ❖ If you don't have `db/models.yml` just run **rails db:migrate** to generate it
- ❖ Whenever you change `db/models.yml`, be sure to **rails db:migrate** to update your database
- ❖ Models are simple Ruby classes that represent real-world things
- ❖ In Rails, model class definitions are expected to be under **/app/models**
- ❖ Database-backed models should derive from `ApplicationRecord`
- ❖ Database-backed models map object instances to rows, and attributes to columns
- ❖ Every column in a table corresponds to an object property of the same name
- ❖ Use **rails console** to load your Rails app and interact with your database
- ❖ Learn how to CRUD: **create**, **read**, **update**, and **delete**
- ❖ Creating a new row can also be a 2-step process: **.new** and then **.save**
- ❖ Read rows of data using **.where** or find a single row using **.find\_by**
- ❖ Every model has a primary key column named **id**
- ❖ You will sometimes need to learn a bit of SQL for **where()** fragments
- ❖ Typical usage: **where(title: "Apollo 13")**
- ❖ Use **LIKE** with **%** wildcards to perform fuzzy searches
- ❖ Typical usage: **where("title LIKE %ollo%")**
- ❖ When two real-world things are related to each other in a one-to-many relationship, put a foreign-key column on the “many” side of the relationship
- ❖ Use **<input>** tags within a form
- ❖ You can use **<button type="submit">** or **<input type="submit">**
- ❖ You can use a **<select>** tag in HTML to help the user associate things together

```
new      save      create      delete      update
        delete_all  count      all
        where      find_by    limit      order
```

Suppose we are building Amazon.com and we identify that we will need a software domain model named *product* to represent real-world products.

Here is a simple 3-Step Recipe:

1. Add the model and its attributes to **db/models.yml**:

```
Product
  title: string
  sku: string
  price: integer
  photo: string
```

2. **rails db:migrate**

3. **Verify Everything**

Verify that you now have a file named **app/models/product.rb**

Finally verify that your local database has your new table defined:

```
$ rails console
> Product.count
=> 0
```

**Models are Always Singular!**

**Product**

not

**Products**

config/models.yml

```
Movie
  title: text
  year: integer
  poster_url: text
```

app/models/movie.rb

```
class Movie < ActiveRecord::Base

end
```

movies_			
id	title	year	poster_url
1	Apollo 13	1995	http://....
2	Guardians of the Galaxy	2014	http://....
3	Backdraft	1991	http://....
4	Star Wars	1977	http://....
5	Toy Story	1995	http://....

```
irb> Movie.count
=> 5
```

```
irb> Movie.where(:year => 1995).count
=> 2
```

```
irb> Movie.find_by(:id => 4).title
=> "Star Wars"
```

```
irb> Movie.where("title LIKE %St%").count
=> 2
```

config/models.yml

**Movie**

```
title: text
year: integer
poster_url: text
studio_id: integer
```

**Studio**

```
name: string
```

movies				
id	title	year	poster_url	studio_id
1	Apollo 13	1995	http://....	4
2	Guardians of the Galaxy	2014	http://....	2
3	Backdraft	1991	http://....	4
4	Star Wars	1977	http://....	1
5	Toy Story	1995	http://....	3

studios	
id	name
1	LucasFilm
2	Marvel
3	Pixar
4	Other

```
irb> m = Movie.find_by(:id => 5)
irb> Studio.find_by(:id => m.studio_id).name
```

```
=> "Pixar"
```