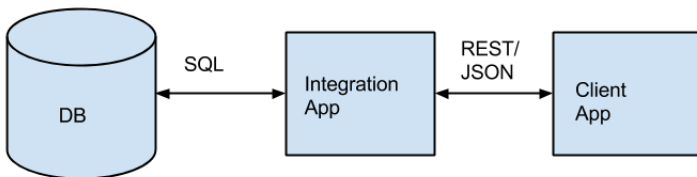# Accessing Models with REST and JSON

Databases Three

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Application stack

We want to start on the integration app

- How to we communicate with the DB using SQL? We use our ORM library, *ActiveRecord*.
- How to we implement the REST/JSON API? We use the capabilities of the Rails controller, *ActionController*.

REST

- Representational State Transfer
- Defined by Roy Fielding in 2000[1].
- Abstraction of the structure of a certain type of "well behaved" web applications.

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[1]http://www.ics.uci.edu/~fielding/pubs/dissertation/rest_arch_style.htm

REST

Suppose we have a data model that we wish to act upon:

- Create
- Read
- Update
- Delete

REST

We can use HTTP to act on the model, mapping HTTP request types, or *verbs*, to CRUD operations.

- Create ⇒ POST
- Read ⇒ GET
- Update ⇒ PUT
- Delete ⇒ DELETE

JSON

- JavaScript Object Notation
- Described by Douglas Crockford, ca. 2002
- Specified in RFC 7159

JSON

```
{
  "firstname" : "Tom",
  "lastname" : "Clark",
  "numberOfCats" : 2,
  "contact" : {
    "email" : "tom.clark@op.ac.nz",
    "phone" : "+64 3 470 4356"
  }
}
```

Lab

In today's lab we will create a simple application that lets us access a simple data model. We will route HTTP requests to controller methods based on the HTTP verbs.

We will use JSON to send and receive data about our models.

We will also see how to use *curl* to interact with our application.