galvanize

Module 2

Week 7 | Day 3 | **RESTful API** & Bounded Contexts

Goals for the Week

Monday

* Modeling a hotel management system

* **Domain-Driven Design**: Entities & Value Objects

* JSON

* **Lab:** Intro to Conference GO

Tuesday

* Building a blog & shopping cart

* **Domain-Driven Design**: Aggregates & Factory Pattern

* **Lab:** Build your own JSON library

Wednesday

* RESTful API's

* **Domain-Driven Design**: Bounded Contexts

* **Lab:** RESTful-ize your app!

Thursday

* HTTP

* More REST

* **Domain-Driven Design**: Anti-Corruption Layers

* **Lab:** Integrate 3rd Party data

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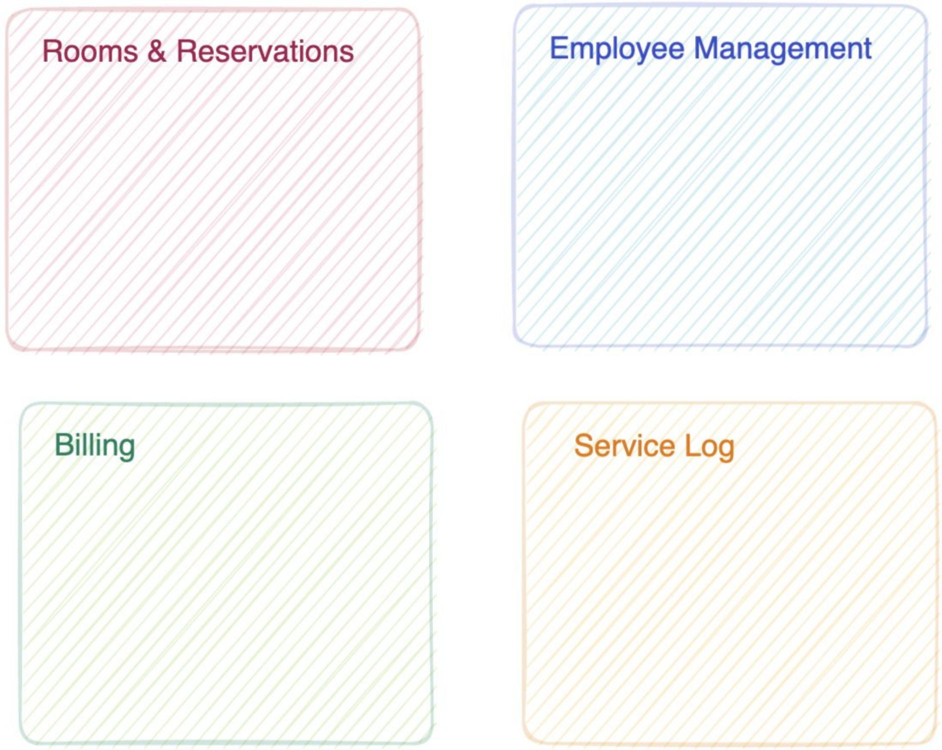
A **Bounded Context** is a group of models, relationships, and processes...

...for a **particular business concern.**

Examples

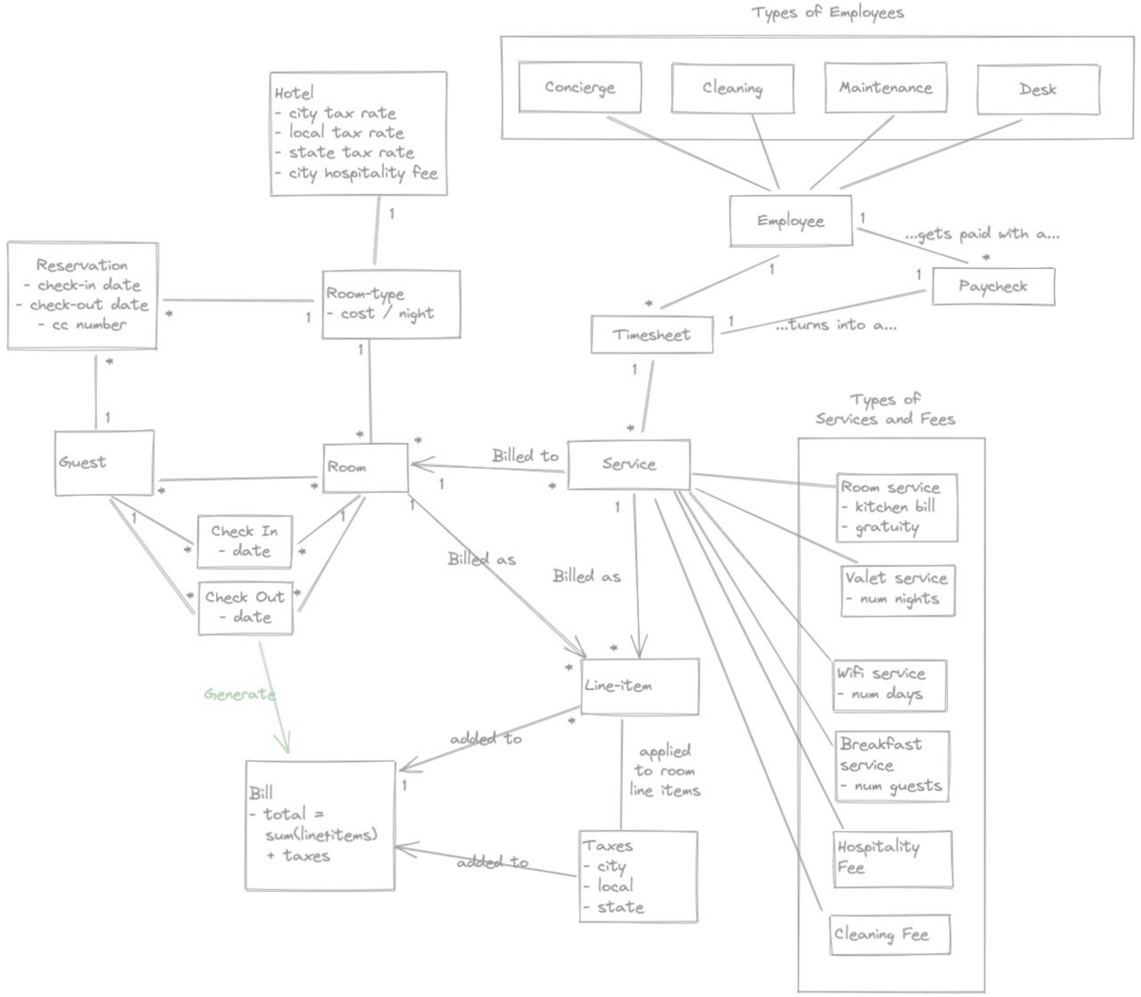
Departments / People:

- Finance department
- Cleaning staff
- Concierge
- Management



Breakout

Let’s go to ExCalidraw…



Building Blocks of Domain-Driven Design

1. **Ubiquitous Language**

   Agreed upon language by all stakeholders in a software project.

2. **Entities**

   Objects with persistent Identities in a data model. (**Ex.** a specific car)

3. **Value Objects**

   Attributes that describe an entity in a data model. (**Ex.** red, Toyota)

4. **Aggregate**

   A group of related entities, treated as a single object.

   (**Ex.** a receipt with line items)

5. **Aggregate Root**

   The anchor of an aggregate.

   (**Ex.** a receipt ID number)

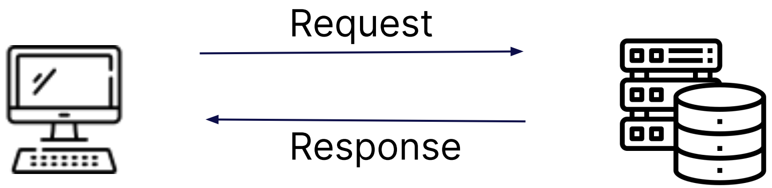
6. **Bounded Context**

   A group of models, relationships, and processes for a particular business concern.

   (**Ex.** billing microservice)

RESTful API

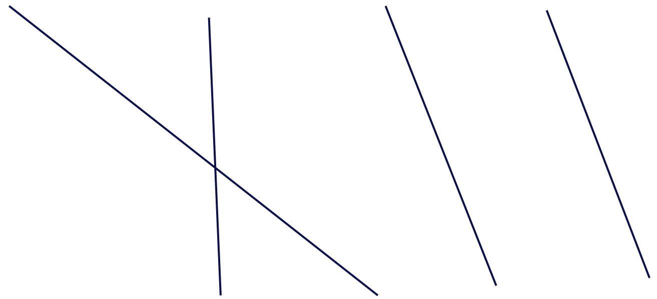
Application Programming Interface



- A convention for sending data (**resources**) between a **client** and **server**.

Each **request / response** has:

1. URL path
2. HTTP method: **Get | Post | Put | Delete**
3. Body *(optional)*



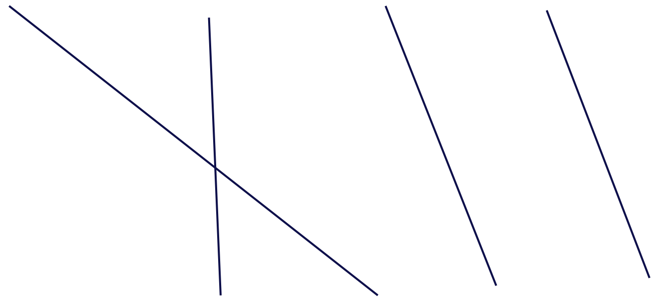
CreateReadUpdateDelete

R E S T

Representational State Transfer

A consistent **URL structure** for CRUD

1. URL path
2. HTTP method: **Get | Post | Put | Delete**
3. Body *(optional)*



Create Read Update Delete

The Pattern

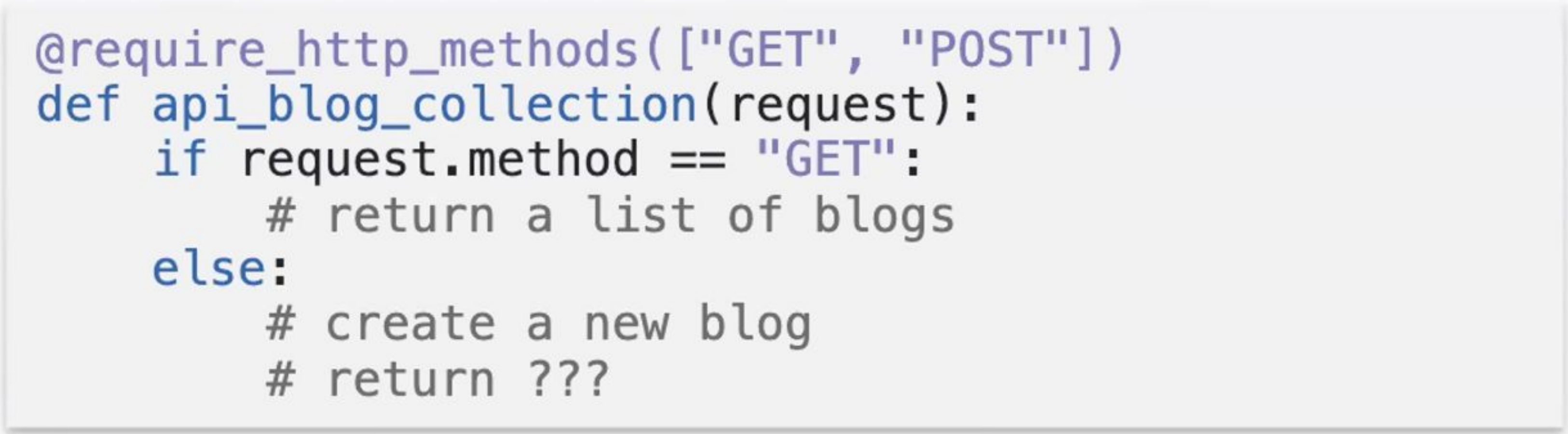
Method	URL	Meaning
GET	`/api/blogs/`	Get all blogs
POST	`/api/blogs/`	Create a new blog
GET	`/api/blogs/1/`	Get a single blog
PUT	`/api/blogs/1/`	Update a single blog
DELETE	`/api/blogs/1/`	Remove a single blog

In Django URLs

```
# settings.py

path("api/", include("blogs.api_urls"))
```

```
# blogs/api_urls.py

path("blogs/", api_blog_collection, name="api_blog_collection"),

path(
  "blogs/<int:pk>/",
  api_blog_item,
  name="api_blog_item"
),
```

Views.py



```python
@require_http_methods(["GET", "POST"])
def api_blog_collection(request):
    if request.method == "GET":
        # return a list of blogs
    else:
        # create a new blog
        # return ???
```