

# Midterm review

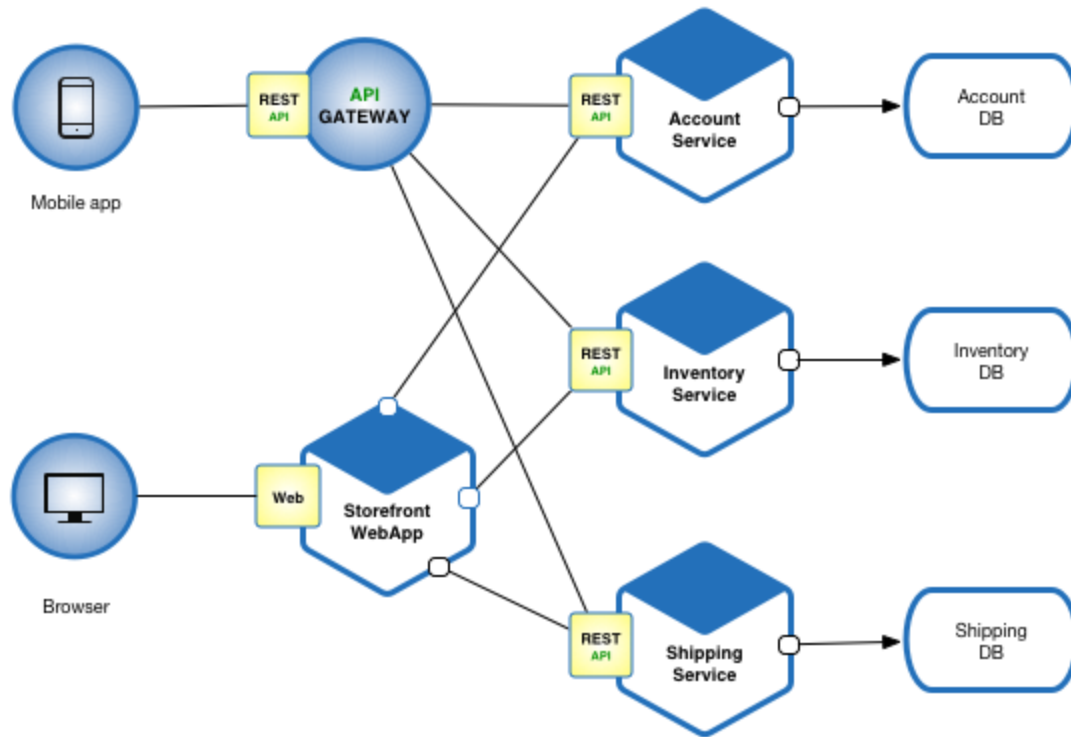
# Week 1: Agile

- concepts:
  - Epics roadmap
  - user stories
- skills:
  - Code management with Git
  - Planning with Gitlab

# Week 2: Architecture and data modeling

- Architecture and data modeling
  - microservices architecture
  - modeling and data relationships
  - Data validation
- skills:
  - Data modeling and validation with Pydantic

# Microservices architecture



# Pydantic models

```
user:
    username: str
    password: str

course:
    dept_code: str
    number: int
    people: [(user_id, role)]
```

# Weeks 3-4: Databases

- Databases
  - database CRUD operations
  - data relationships with document databases
- Skills:
  - Database management with PyMongo

# Database

```
create( user ):  
    result = db.insert( user )  
    return result
```

# Weeks 5-6: API development and deployment

- concepts:
  - REST APIs
  - Serverless / FaaS
- Skills:
  - API development with FastAPI



# API dev

```
@app.post( "/user" ):  
    create_user( user )  
        result = dbm.create( user )  
        return result
```