CS 310 : Scalable Software Architectures

Week 03 (Oct 07 – 11)

October 2024

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

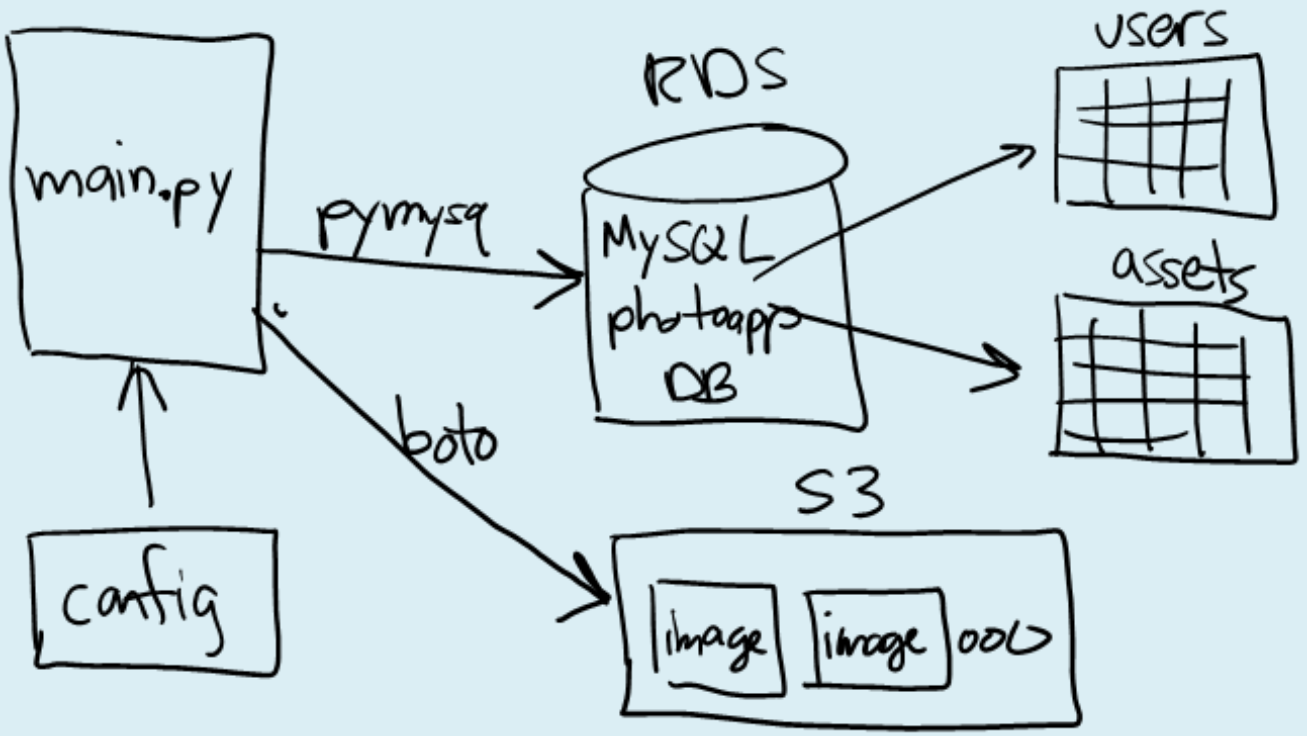
www.a-printable-calendar.com

This week in CS 310:

- ***Focus this week:***
  - *Web services*
- ***Class sessions *are* being recorded this week***
  - *Will be available under Panopto on Canvas*
- ***Project 01** due Wednesday Oct 9th @ 11:59pm*
  - *Building a simple client-server Photo app*
  - *Gradescope is open (unlimited submissions)*
  - *Can submit as late as Friday night*
- ***Office hours** have started --- we have 20+ TAs*
  - *See link on Canvas for hours and locations*

Northwestern University

Project 01

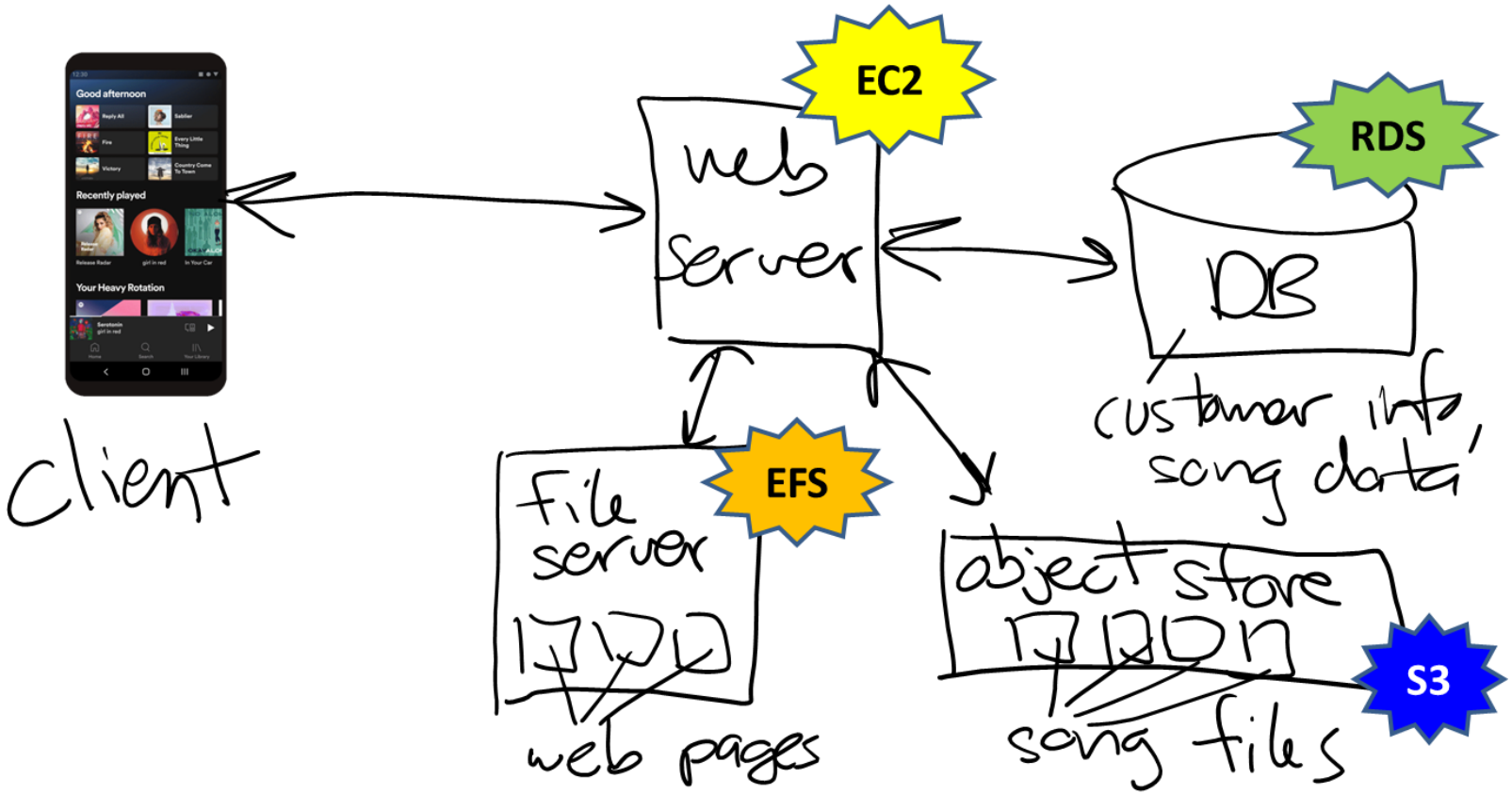


Goals?

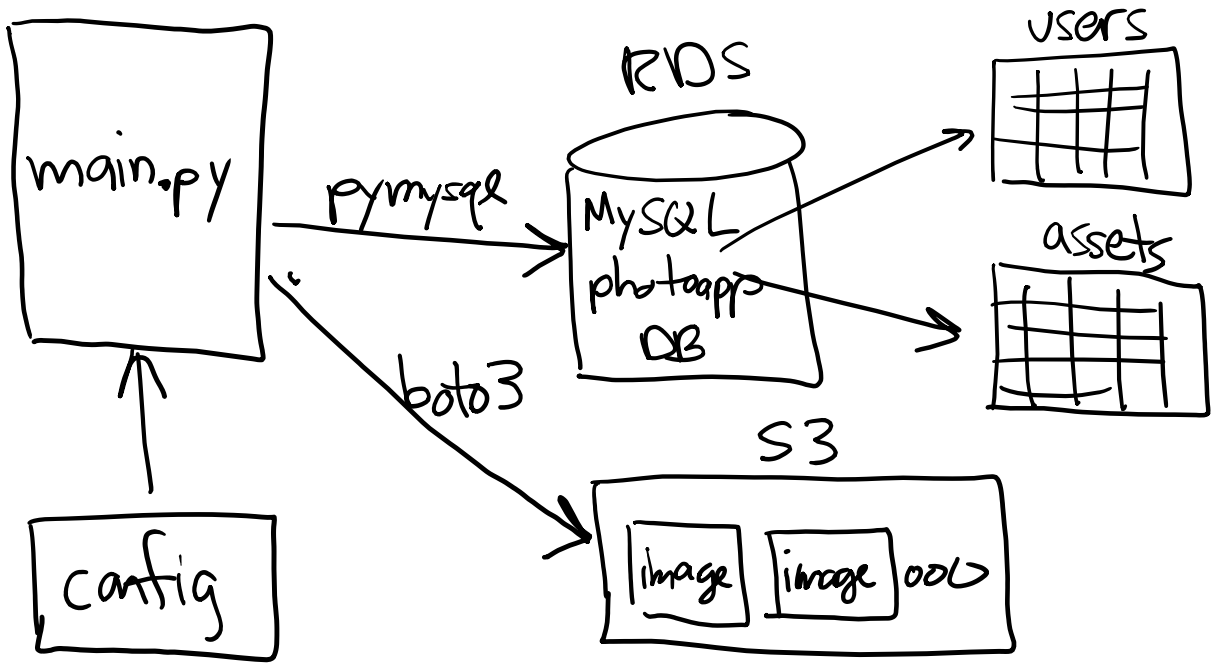
- **Start with a simpler, client-server architecture**
- **Experience with AWS, DB, SQL and Python**
- **Create infrastructure needed for future projects**

Multi-tier architecture

- **Recall that most software is multi-tier design…**



Project 01 => Project 02



In Project 2, there will be a web-server in between. In Project 1, client is directly accessing the database while now, the database access should only be with web-server. The client will make API calls to the web server, the web-server then interacts with database using functions written in it,

Topics

- Service-oriented architectures (SOA)
- Web services
- Building a web service using JavaScipt, Node.js and Express
- Serialization and JSON
- Examples and demos

Class sessions

- **Summarize key points of lecture**
- **Compare / contrast client-server vs. multi-tier**
- **Build two web services: a simple calculator and a more realistic service for MovieLens database**

- **Notes:**
  - *To work in class, make sure Docker Desktop is installed*
  - *Provided software uses Docker, download files from GitHub:*
    - https://github.com/joe-hummel/intro-web-services
    - Clone repo or download ZIP