CS 411 Project Overview

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Announcements

- **Homework 1 due date: Tuesday Sept 14th** at noon.

- There will be an optional **Problem Tutorial** with sample problems related to Homework 1, Thursday Sept 9th, 5:30pm-6:30pm at 1302SC
- Keep an eye on Announcements/Calendar

Course Project

- **Project (Application Oriented):** Building a Database-Driven Web Information System
- **Project Option 2 (System Oriented):** System Project Over Open Source DBMS
- More details, visit: https://agora.cs.illinois.edu/display/cs411fa10/Course+Projects

Building a Database-Driven Web Information System

Overview

- Project expectations
- Example system:
  - Google shopping (product search)
  - Expedia (fly ticket search)

Project

- Database-Driven Web Information System
  - Web-based application that needs a database
  - Must be useful and realistic

How to Choose a Good Project Topic?

- Usefulness
  - Is your system useful? Why should people use your system?
- Realness
  - Are the data real?
  - Does your system have enough data to make it useful and interesting?
    - A reasonable amount of data, so that interesting user scenarios can be shown in your final demo

Topic Example 1: Product Search

- Product Search
- Find products
  - Why is it useful?
    - Provide a comprehensive search on products that people want to buy daily
  - Why is it real?
    - A huge amount of products online

Topic Example 2: Fly ticket Search

- Fly ticket Search
- Find fly tickets
  - Why is it useful?
    - It will help you to find the cheapest and most convenient fly ticket for your trip
    - More: restaurants, car rental, etc
  - Why is it real?
    - Many airlines and tickets

Functionality Criteria

- Basic Functions (must meet all)
  - Search database and list records
  - Insert, update, delete records into the database
- Advanced Functions (must have at least 2)
  - Examples:
    - “Cool” user feature that goes beyond the basic functionalities
    - Support multi-users at a time
    - Batch loads from other datasets
    - Additional administrative interface or role-based interface

Basic Functions

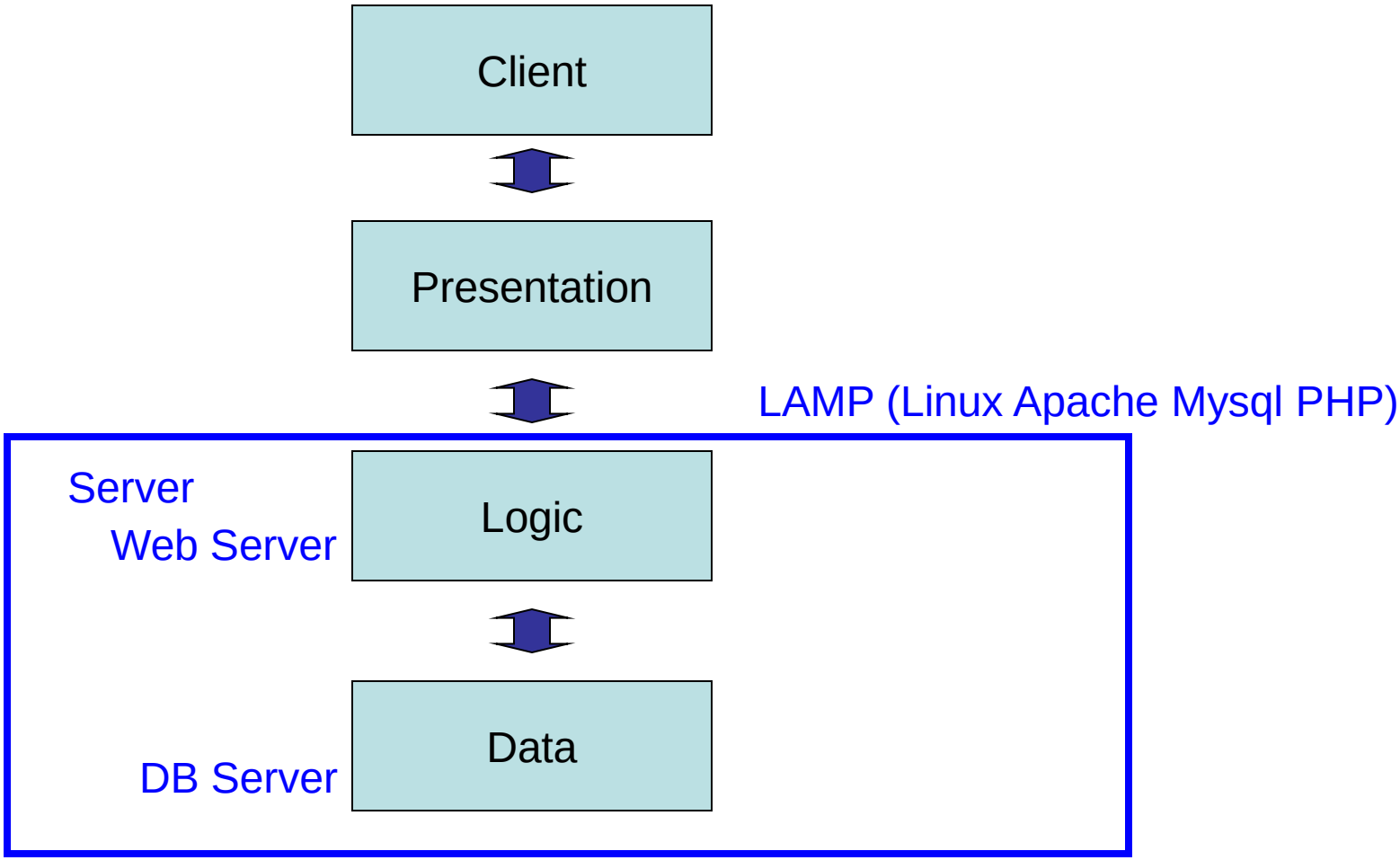
- **Search** products by its name, category, price range, store, etc
  - Input: form query
  - Output: a list of product records

- **Insert**/**Update**/**Delete** records at the back end

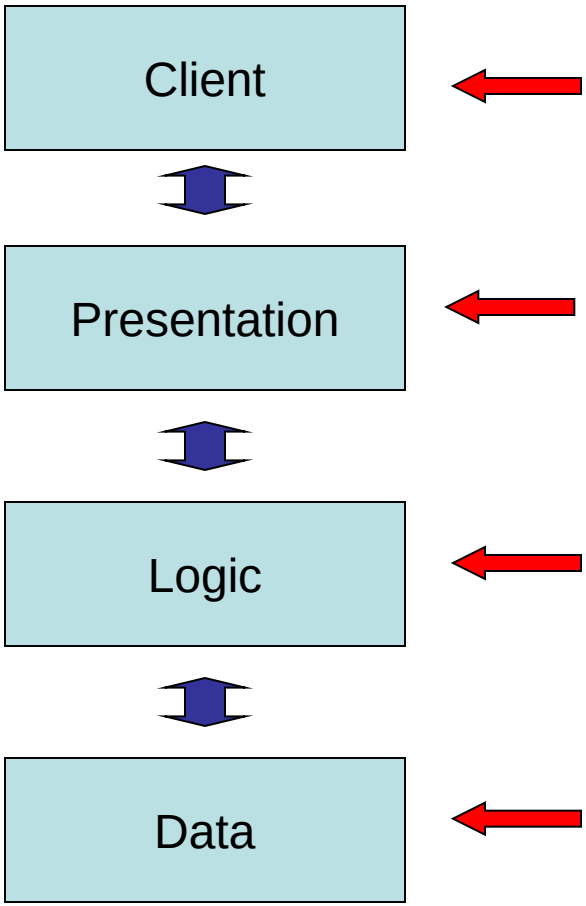
Some Advanced Functions

- **Sort** products by its price, posting date
  - Input: a list of product records, user-specified sorting criteria
  - Output: a sorted list of product records
- **Visualize** apartments with a ranked list, on a map
  - Input: a list of apartments with addresses
  - Output: map

Common Software Bundle for Building Web Apps



Web Apps
Share One Common Architecture



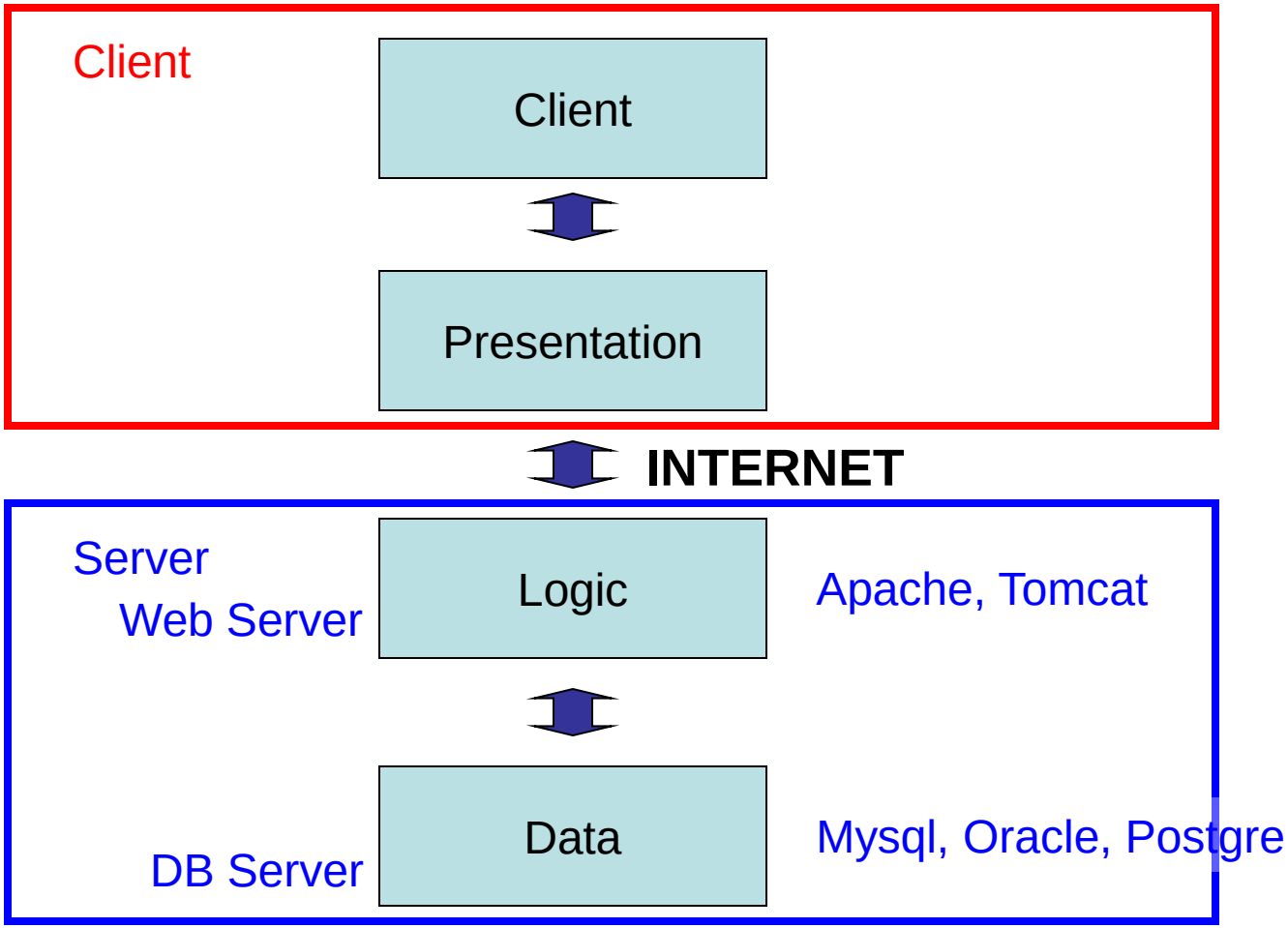
Web Browser
Example: IE, Firefox

Renders information, generates webpages
Example: HTML, DHTML, XSL, XML, javascript

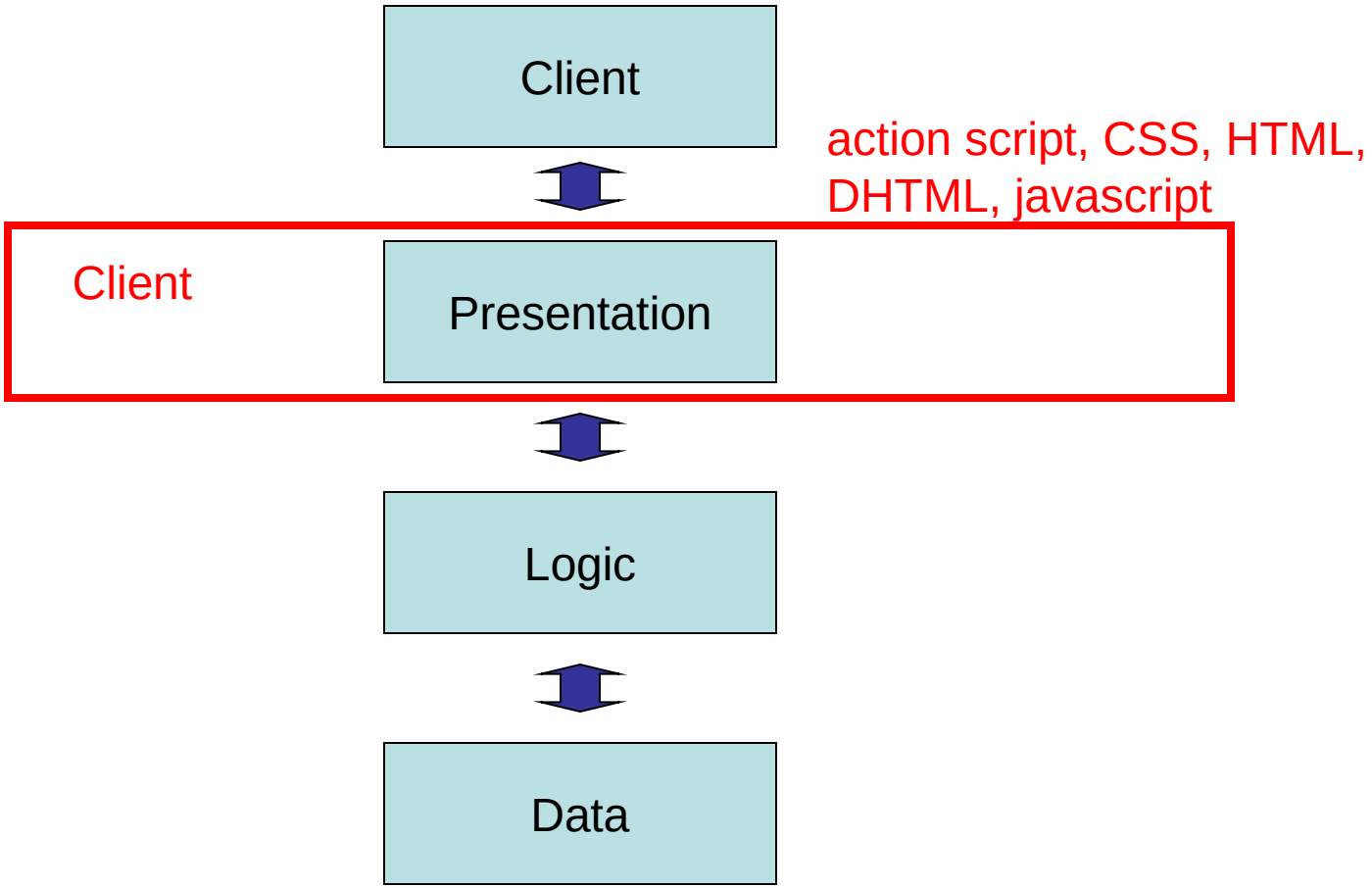
Manages data access between 2 layers, processes data, performs calculations, makes logical decisions,
Example: ASP, PHP, Perl

Stores and manages data
Example: mysql, oracle

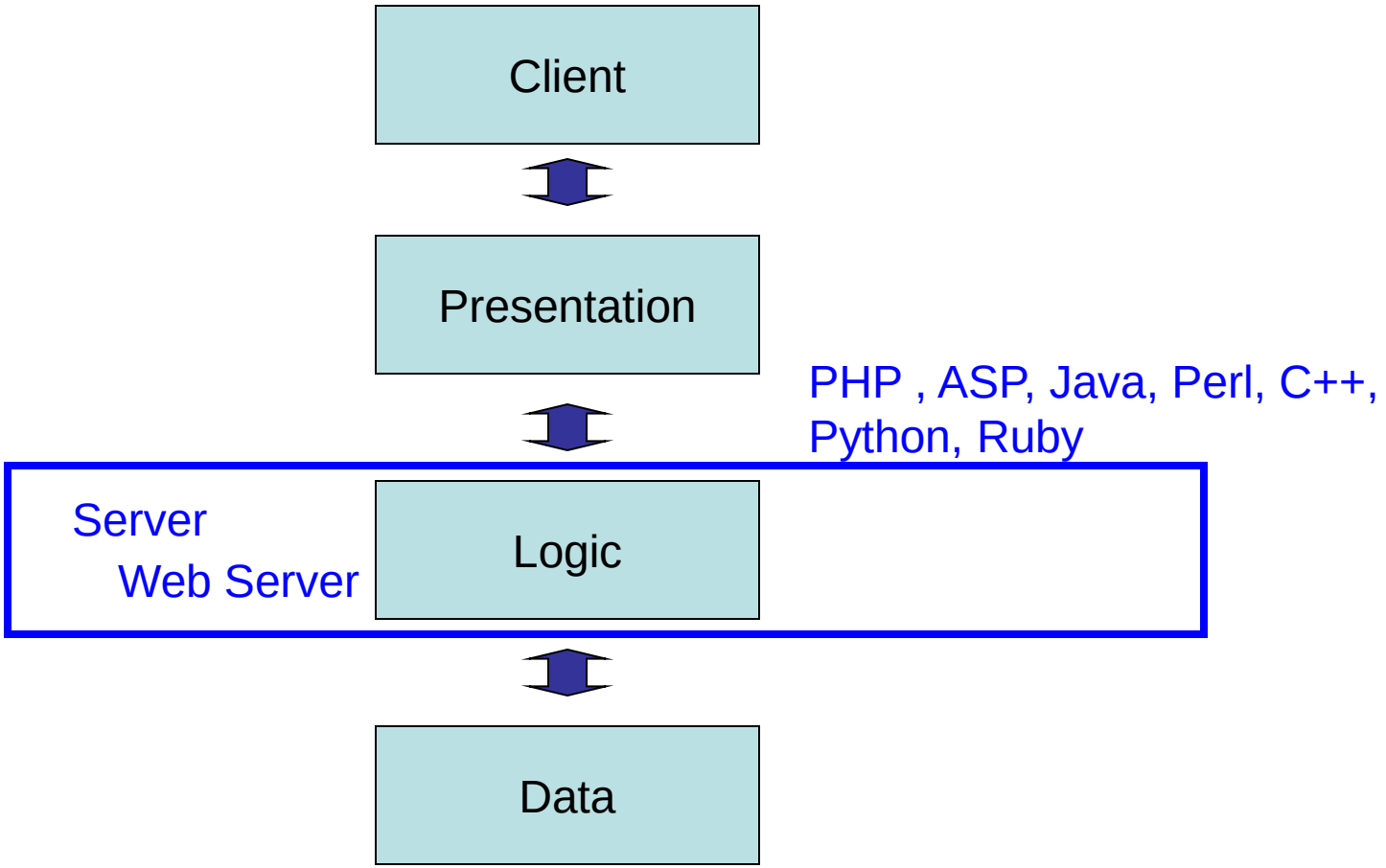
Client vs Server



Client Side Scripting



Server Side Scripting



Common Tools for Building Web Apps

- Summary
  - Framework
    - LAMP
  - Client side
    - Examples: HTML, javascript, action script, CSS, DHTML
  - Server side
    - Examples: PHP, ASP, Java, C++, Perl, Python, Ruby
  - Web server
    - Examples: Apache, tomcat
  - Database
    - Examples: mysql, oracle, postgre
- Tool resources will be on projects page

Project Stages

- Project:
  - https://agora.cs.illinois.edu/display/cs411fa10/Projects
- Stage 0 Form groups
  - https://agora.cs.illinois.edu/display/cs411fa10/Project+Teams
- Stage 1 Functional description & ER design
- Stage 2 Development plan
- Stage 3 Initial demo
- Stage 4 Final demo

How to find partners for project

- Group size 3-4 is recommended
- Talk to your fellow classmates in class
- Newsgroup
  - Give a short intro about your background, and your interest on project
- Visit/Email/Talk to me if any difficulties

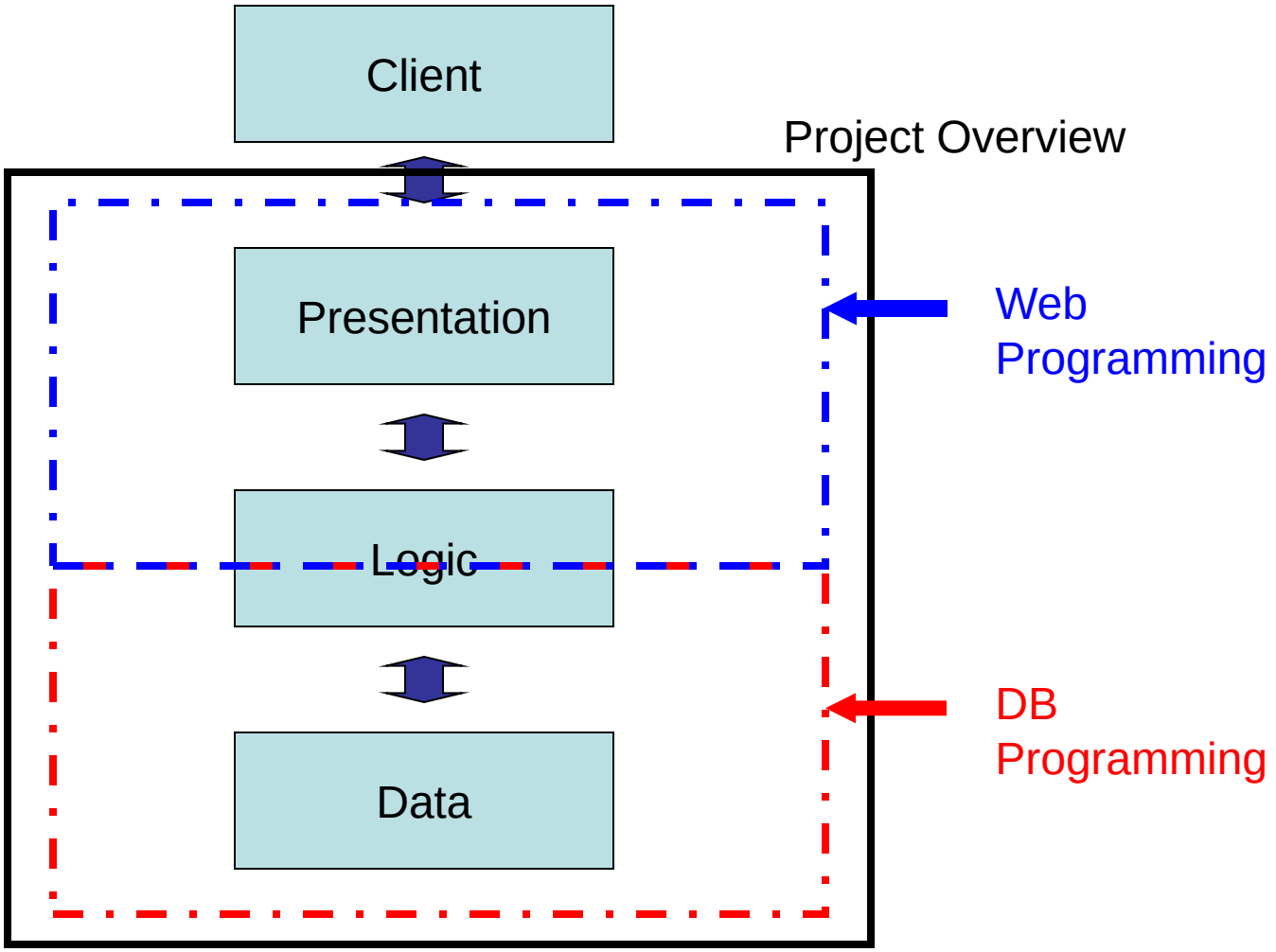
Project Tips

- Start early
  - "Unexpected issues"
  - Data collection can take some time
  - Schema may change
  - Web space, database access will take some time to get familiar with
- Final demo is a complete working system
  - Not a functional demo
  - Demo in class

FAQs

- Can we use Java, C, Python, etc?
  - Yes. We are open on the programming lanuage.
- Can we use Access as the data storage?
  - No. Must use a DBMS that supports SQL.
- Can we use our own servers?
  - Yes. In fact, we do not support ASP, .Net.

More Project Tutorials in the Future



- Feel free to contact me, or visit me during my office hour (Thursday 5pm-6pm 0207SC) in case you have concerns about the project.

- Have fun doing the project!