Review Uploading

- Uploading example
  - Request vs. SA object
  - Saving files
Sending an Email

- Pretty easy to do
- Using CDONTS
- Setting up, sending, clearing mail object
- Demonstrate
Scalability

**Defined:**
- **Web Definition**
  - The ability to expand the number of users or increase the capabilities of a computing solution users without making major changes to the systems or application software.
- **Computing Dictionary**
  - How well a solution to some problem will work when the size of the problem increases
- **Cognitive Understanding**
  - An architecture is considered to be scalable if, unchanged, it can handle increasingly complex problems that demand a greater amount of knowledge. Often scaling yields problems such as efficiency
Scalability

What does scalability mean?

- You can add more to it without increasing cost
  - More Users
  - Larger Database
  - More pages, etc.
Scalability

Attributes

- Can handle large # of users
- Does that without increasing cost
Scalability

How to Scale

- ASP is scalable
- Start with the correct software
Scalability

- Hardware
  - Adding more computers to a non-scalable system won’t help
    - “Oh, it’s not handling the load?… add another computer.”
  - Doesn’t work that way.
What is a Tier?
- A ‘level’ or ‘layer’

3 tiers
Two-Tier Design
N-TIER DESIGN

N-Tier

- Refers to the different levels of responsibility in a system’s design
- N, as in Math, can be any number above 1
- N-Tier, simply put, is:
  - Any number of tiers, no limits
- Most common is a 3-Tier system
N-Tier Design

→ n tiers
3-Tier Design

Client apps are written to communicate with the middle tier

Middle tier offers a layer of abstraction

DBMS can change from SQL Server to MySQL (or other), etc

Meaning the client does not depend on the DBMS or the type of server

Meaning the client is not directly dependent upon the server

But only the Middle tier would require modification. The client tier would go untouched
A 3-TIER SYSTEM

- Aesthetics
- HTML, CSS
- Server-Side Code
- ASP
- PHP, other, etc.
- Data

User Interface

Business Logic

Database

- All Interaction with Users
- Visual Aspects
- Where data comes from
- Data Format
- Business Rules
- Data Storage
- Domain constraints on data (user accounts, DSN’s)
- No Business Logic
Web Farms

Defined:

- **What is Definition**
  - On the Internet, a Web server farm, or simply *Web farm*, may refer to a Web site that uses two or more servers to handle user requests. Typically, serving user requests for the files (pages) of a Web site can be handled by a single server. However, larger Web sites may require multiple servers.

  - Web farm is a term that is also simply used to mean a business that performs Web site hosting on multiple servers. Some Web farms allow you to put your own server on their site, a service known as colocation.
Web Farms

What is it?

- Several identical Web servers acting as ONE
  - Connected by switch or cluster
  - Scalable, in terms of hardware
  - Redundant, data stored/backed up in multiple locations
  - Load Balancing
Web Farms

- Web Site Hosted on a Web Farm
  - Login Functionality
    - In a Web farm environment an e-commerce Web site should provide a single log-on feature so that its client won't have to re-authenticate each time an unvisited Web server will take in charge their request.
    - A robust system provides an authentication token to its user to authenticate them and insure an access control to the resources. In an Internet environment, one of the common ways to provide such token is the use of cookies.
Web Farms

- Load Balancing

  - A server gets 1,000 hits at once
    - That server must handle all hits simultaneously

  - A web farm gets 1,000 hits at once
    - Let’s say a web farm has 10 web servers
    - Load is split up so each server handles 100 hits.
Web Farms

IIS Server 1
ASP Script

IIS Server 2
ASP Script

IIS Server 3
ASP Script

Director

Browser
Client 1

Browser
Client 2

Browser
Client 3
More on web farms in the additional reading for this week.