Model View Controller

{ ASP.NET

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Overview {

MVC{

Concept and Origin;

Execution Process;

Popular Frameworks;

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ASP.NET MVC{

MVC vs. Web Forms;

Features;

Music Store;

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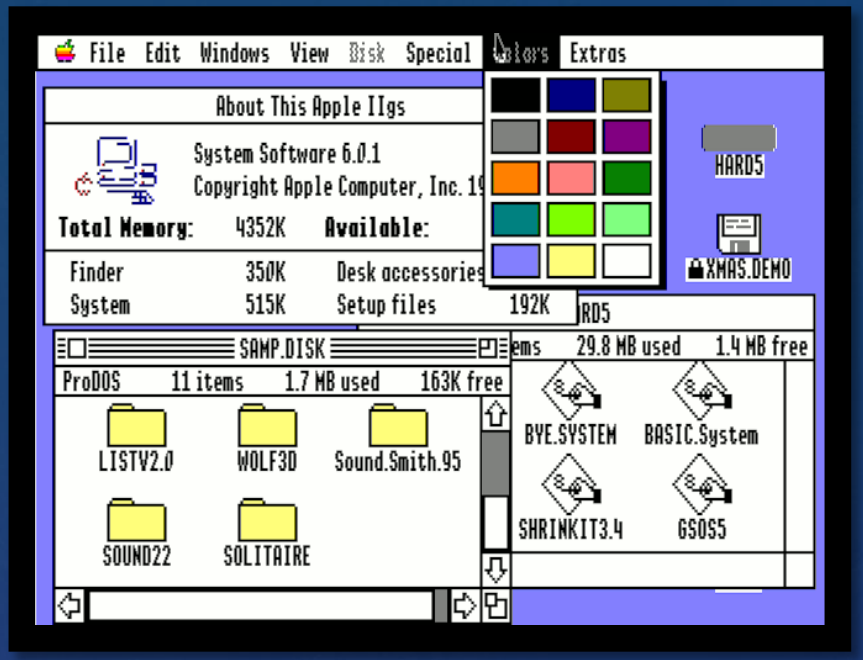
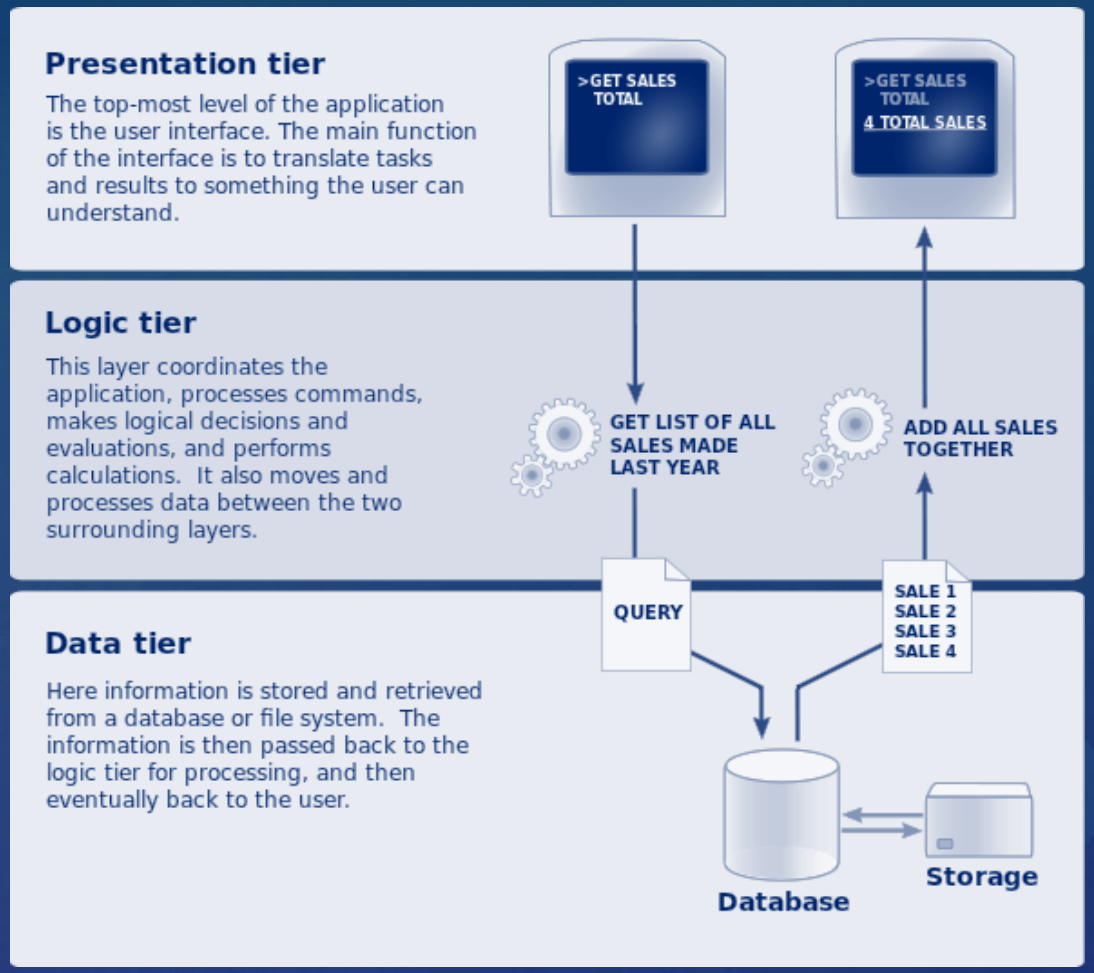
Fist Prototype of a Computer Mouse



Early Apple GUI

Introduction of graphic "views" in computing { 1979

Formulated by Norwegian computer scientist Trygve Reenskaug for Graphic User Interphase (GUI) software design, the MVC architecture was one of the primary outcomes of GUI development.



Common 3-Tier Architecture Model

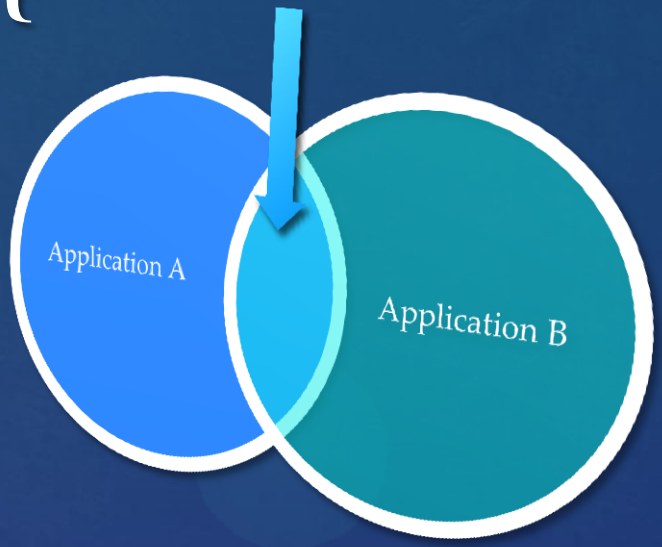
{ Separates representation of information from user interaction.

Promotes:

- Code Reusability
- Separation of Concerns

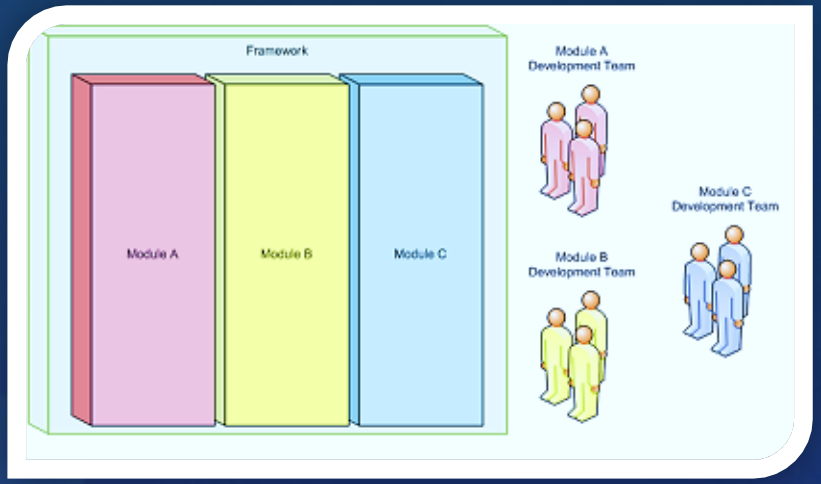
Software Architecture Pattern

Code Reusability

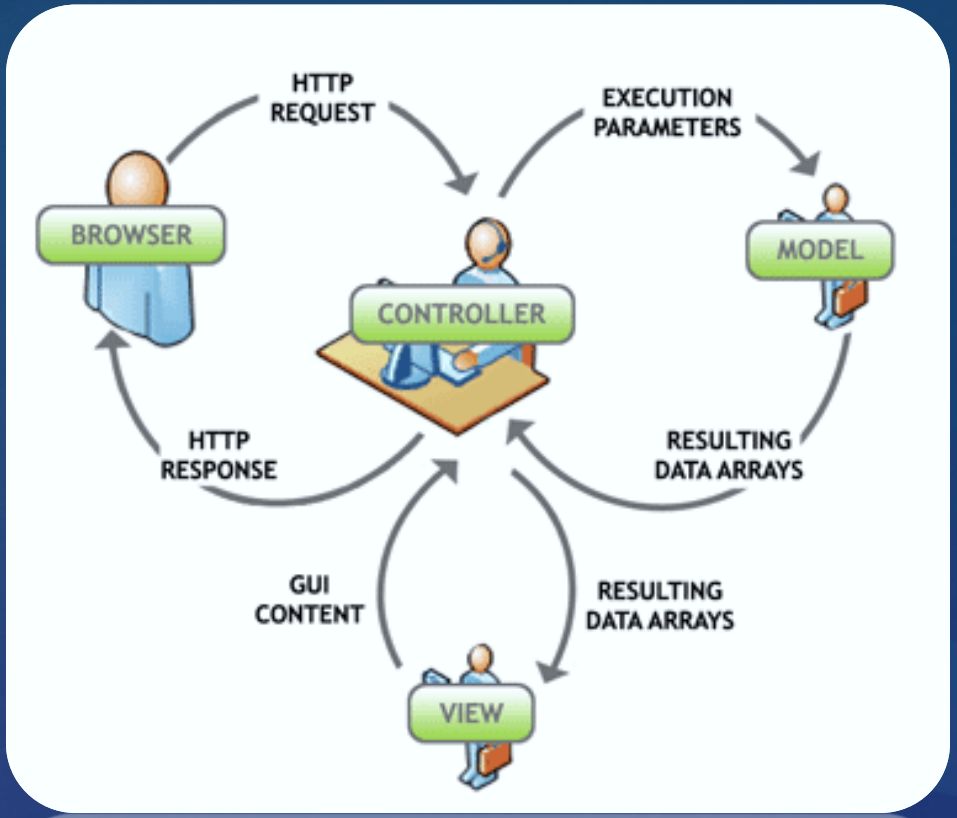


- Shortens development
- Code Libraries
- Design Patterns
- Frameworks

Separation of Concerns



- Improves code clarity and organization
- Helps troubleshooting by isolating issues
- Allows for multiple teams to develop simultaneously

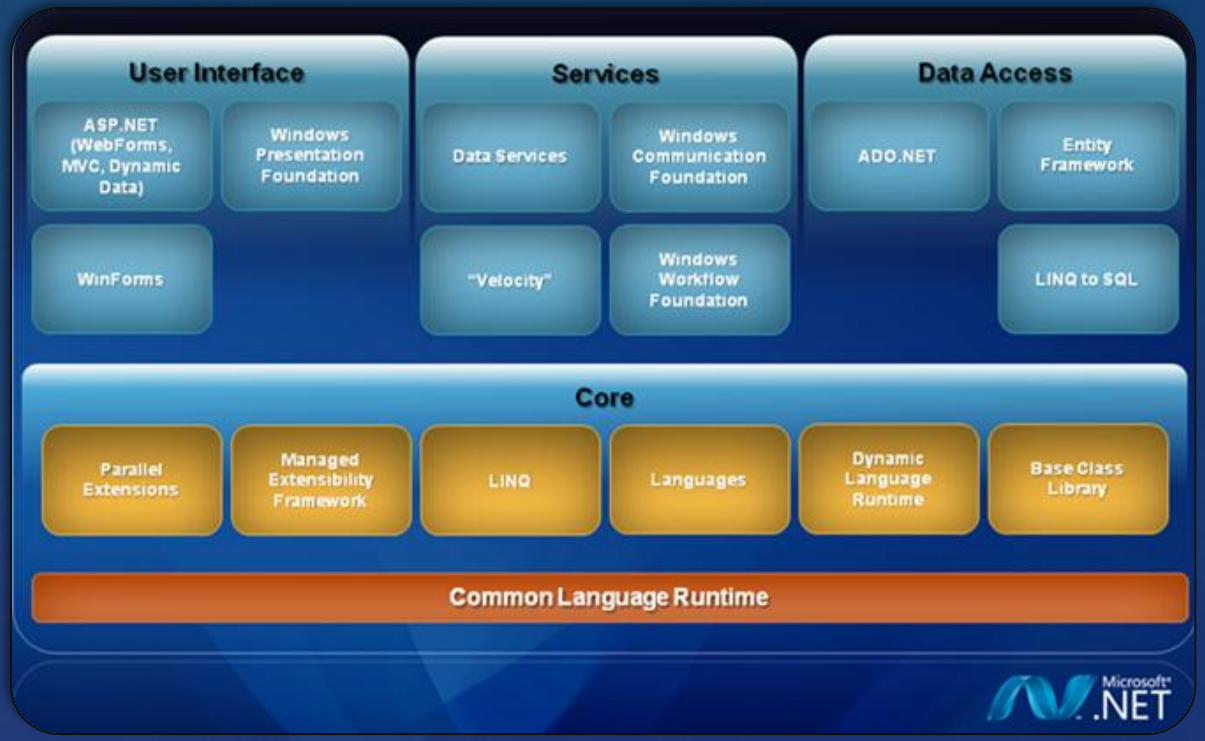


- **Controller** – Mediates input and commands for the model or view
- **Model** – Application data, business rules, logic, and functions.
- **View** – Output and representation of data

Execution Process

Frameworks {

ASP.NET;



ASP.NET 4.0 Framework

PHP (Zend, Symfony, CakePHP, CodeIgniter);

Javascript (Backbone.js, Ember.js, JavascriptMVC);

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ASP.NET MVC

- Implements Model-View-Controller Paradigm
- Integrates with Existing ASP.NET Features
  - Master Pages
  - Membership-Based Authentication

Advantages

MVC

- Easier to Manage Complexity
- Does not use view state or server based forms
- Rich Routing Structure
- Support for Test-Driven Development
- Supports Large Teams Well

WebForms

- Preservers State over HTTP
- Page Controller Pattern
- View state or server based forms
- Works well for small teams
- Development is less complex

Controllers in ASP.NET MVC

- Requests routed to Controller::Action
  - Action Methods
  - Action Results
- RESTful

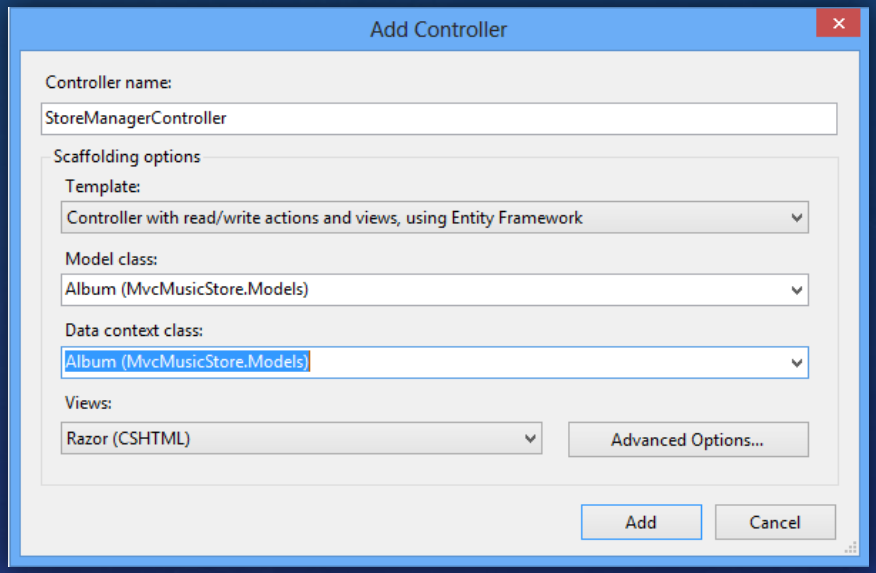
Models

- Uses Entity Framework
  - Database First
  - Model First
  - Code First
- Database Context
  - Describes interactions between entities
- Data Annotations
  - Describes additional requirements for the model

Views

- Razor
  - Compact, Expressive, and Fluid
  - Easy to Learn
  - Has great Intellisense
- ASPX Engine
- Dynamic or Strongly Typed
- Partial Views

- Scaffolding
- Test Driven Development
- Internationalization
- Many More



Other Features

MVC Music Store

- ASP.NET MVC Implementation
- http://www.asp.net/mvc/tutorials/mvc-music-store