

# Model View Controller

## { ASP.NET

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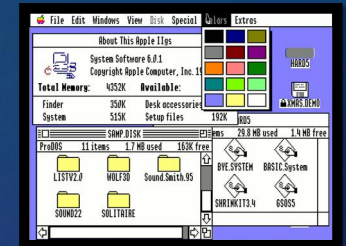
Overview {  
MVC{  
Concept and Origin;  
Execution Process;  
Popular Frameworks;

};  
ASP.NET MVC{  
MVC vs. Web Forms;  
Features;  
Music Store;

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First Prototype of a Computer Mouse



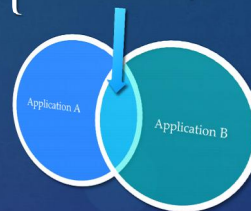
Early Apple GUI

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.

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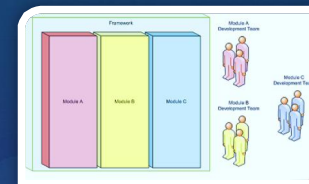
{ Code Reusability



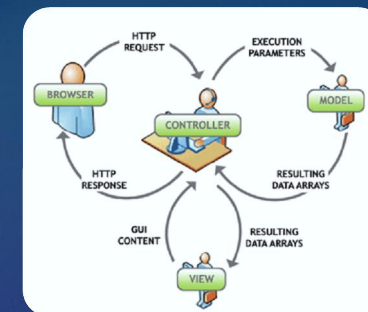
- ↳ Shortens development
- ↳ Code Libraries
- ↳ Design Patterns
- ↳ Frameworks

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{ Separation of Concerns



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



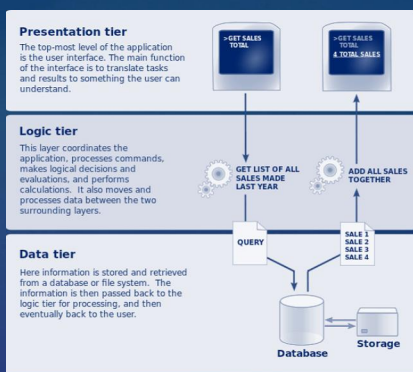
{ Controller – Mediates  
input and commands for  
the model or view

Model – Application  
data, business rules, logic,  
and functions.

View – Output and  
representation of data

## Execution Process

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Common 3-Tier Architecture Model

{ Separates representation  
of information from user  
interaction.

- Promotes:
- Code Reusability
  - Separation of Concerns

## Software Architecture Pattern

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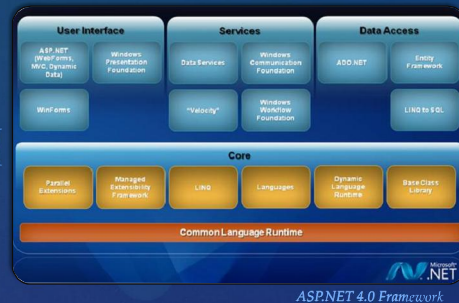
## Frameworks {

ASP.NET;

PHP (Zend, Symfony, CakePHP, CodeIgniter);

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

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

## ASP.NET MVC

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{ 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

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

## Advantages

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

## Controllers in ASP.NET MVC

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

## Models

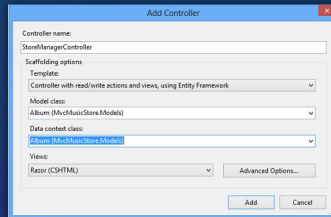
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- ↳ Razor
  - Compact, Expressive, and Fluid
  - Easy to Learn
  - Has great Intellisense
- ↳ ASPX Engine
- ↳ Dynamic or Strongly Typed
- ↳ Partial Views

## Views

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- ↳ Scaffolding
- ↳ Test Driven Development
- ↳ Internationalization
- ↳ Many More



## Other Features

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

## MVC Music Store

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