## The Model View Controller Framework

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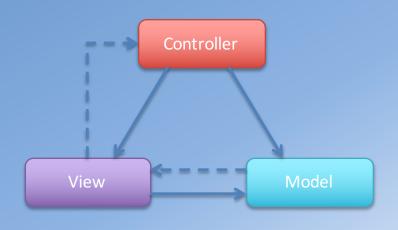
## Design Patterns

- Well-documented solution to a recurring problem
  - Also referred to as an architectural pattern
- Software design pattern
  - Reusable solution to commonly occurring problems
  - Gang of four: E. Gamma et al. Design Patterns: Elements of Reusable Object-Oriented Software, Addison-Wesley, 1994

https://en.wikipedia.org/wiki/Software design pattern

# The Model-View-Controller (MVC) Framework

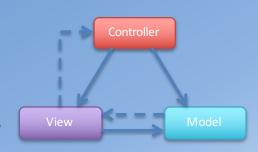
- Software engineering architecture pattern
  - Isolation of domain logic from user interface
  - Permits independent development, testing and maintenance (separation of concerns)



## **MVC** Framework

#### Model

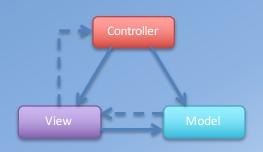
- manages the behavior and data of the application domain
- responds to requests for information about its state (usually from the view)
- responds to instructions to change state (usually from the controller)
- In event-driven systems, the model notifies observers (usually views) when the information changes so that they can react



#### **MVC Framework**

#### View

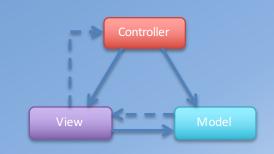
- renders the model into a form suitable for interaction, typically a user interface element
- Multiple views can exist for a single model for different purposes
- A viewport typically has a one to one correspondence with a display surface and knows how to render to it



### **MVC** Framework

#### Controller

- receives user input and initiates a response by making calls on model objects
- A controller accepts input from the user and instructs the model and viewport to perform actions based on that input



# Model View View-Model (MVVM)

- Descendent of MVC
- Sometimes called Model-View-Binder
- View model
  - Abstraction of the view that exposes public properties and commands
  - Declarative data binding

