software
studio

model view controller

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what does a web app do?

routing
› translates URLs to actions, and vice versa

presentation
› uses HTML, CSS to display data

interaction & control
› determines what user can do next

data access & storage
› defines effect of operations on persistent state
MVC structure

- **Model**
  - What data is stored?
  - What operations?

- **Controller**
  - What happens next?
  - What if not logged in?
  - Session state?

- **View**
  - What data is displayed?
  - How is data displayed?
  - Appearance, themes?

Acceptable dependence

Undesirable but common dependence
MVC in Rails

controller
app/controllers

view
app/views

model
app/models
example: restaurant review app

in MVC, where to make these changes?
› increase font size of reviews
› allow editing if logged in as author
› change rating of zero to mean no rating
most common flaw in Rails code

putting model code in controller

› example: web analytics

```ruby
class SitesController < ApplicationController
  def visit
    @address = params[:address]
    unless Site.exists?(['site = ?', @address])
      @site = Site.create(site => @address, visits => 0)
    end
    @site = Site.find(:first, conditions => ['site = ?', @address])
    if params.has_key?(:visit_time)
      @visit_time = params[:visit_time]
      unless @site.avg_visit_time.nil?
        @site.avg_visit_time = ((@site.avg_visit_time * (@site.visits)) + @visit_time.to_i) / (@site.visits + 1)
      else
        @site.avg_visit_time = @visit_time.to_i
      end
    end
    @site.visits += 1
    @site.save
  end
end
```
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