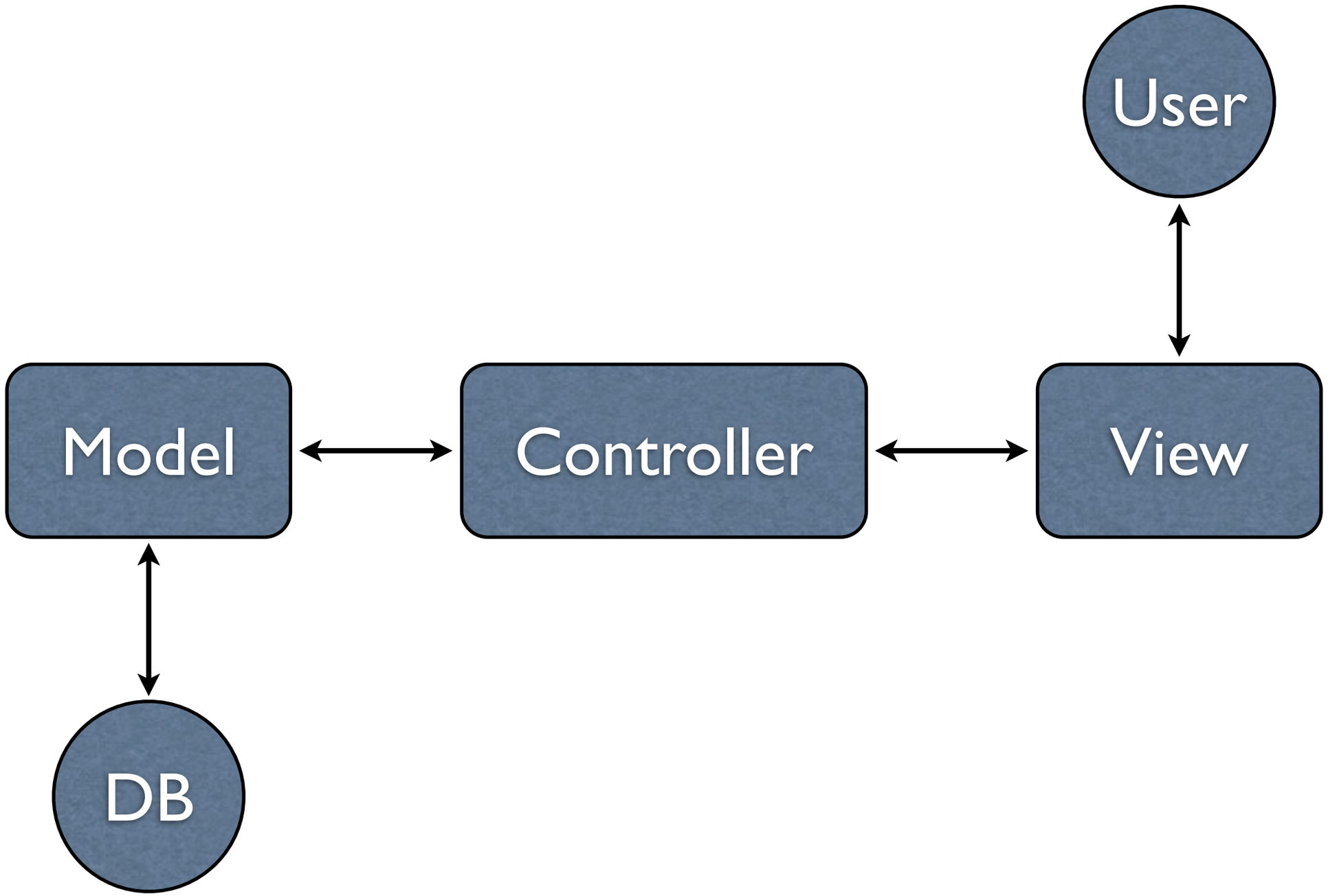
Beginning Ruby on Rails

Session Four

Controllers

- Controllers connect models and views

1. Requests come in to controller
2. Controller gets data from model
3. Controller renders the appropriate view


User
Model
Controller
View
DB

REST

Representational State Transfer

REST

- Client-Server software architecture style introduced in 2000 by Dr. Roy Fielding
  - One of the authors of the HTTP spec
- Deals with the representation of *resources*
- Clients initiate requests to servers
- Servers process requests, return responses

REST

- Remember CRUD?
  - Create
  - Read
  - Update
  - Delete

REST

- Corresponding HTTP verbs:
  - Create => POST
  - Read => GET
  - Update => PUT
  - Delete => DELETE

Routing

Connecting URLs to Code

Resources

- Edit config/routes.rb
  - Ignoring comments, it's only 3 lines:

```
Blog::Application.routes.draw do
  resources :posts
end
```

Viewing Routes

- rake routes

```
Tonys-Macbook:blog tony$ rake routes
(in /Users/tony/Sites/rails-class/blog)
    posts GET    /posts(.:format)          {:action=>"index", :con
          POST   /posts(.:format)          {:action=>"create", :co
 new_post GET    /posts/new(.:format)      {:action=>"new", :contr
edit_post GET    /posts/:id/edit(.:format) {:action=>"edit", :cont
     post GET    /posts/:id(.:format)      {:action=>"show", :cont
          PUT    /posts/:id(.:format)      {:action=>"update", :co
          DELETE /posts/:id(.:format)      {:action=>"destroy", :c
```

Nested Resources

- Useful when one resource belongs to another resource.
- config/routes.rb:

```
resources :posts do
  resources :comments
end
```

Restricted Resources

- For now, we'll only worry about creating new comments.
- config/routes.rb:

```
resources :posts do
  resources :comments, :only => :create
end
```

Custom Routes

- Also called non-resourceful routes
- Useful for mapping old URLs to Rails or to simplify URLs for complex actions

```
match ‘login’  => ‘user_sessions#new’

match ‘logout’ => ‘user_sessions#destroy’
```

The Root Route

- The Root Route sets the home page for your application
- Delete the file public/index.html
- Add this near the end of config/routes.rb

```
root :to => "posts#index"
```

Paths and URLs

- Adding a route also automatically create helpers for use in your views:

```
posts_path                  posts_url

new_post_path               new_post_url

edit_post_path(id)          edit_post_url(id)

post_path(id)               post_url(id)
```

Default Actions

Remember: “Convention Over Configuration”

RESTful Methods

- Index
- Show
- New
- Edit
- Create
- Update
- Destroy

RESTful Methods

- Index List all records
- Show Show one record
- New Form to create a record
- Edit Form to edit a record
- Create Create a new record
- Update Update an existing record
- Destroy Delete a record

RESTful Methods

• Index	List all records	GET
• Show	Show one record	GET
• New	Form to create a record	GET
• Edit	Form to edit a record	GET
• Create	Create a new record	POST
• Update	Update an existing record	PUT
• Destroy	Delete a record	DELETE

```ruby
def index
  @posts = Post.all

  respond_to do |format|
    format.html # index.html.erb
    format.xml  { render :xml => @posts }
  end
end
```

```ruby
def show
  @post = Post.find(params[:id])

  respond_to do |format|
    format.html # show.html.erb
    format.xml  { render :xml => @post }
  end
end
```

```ruby
def new
  @post = Post.new

  respond_to do |format|
    format.html # new.html.erb
    format.xml  { render :xml => @post }
  end
end
```

```ruby
def edit
  @post = Post.find(params[:id])
end
```

```ruby
def create
  @post = Post.new(params[:post])

  respond_to do |format|
    if @post.save
      format.html { redirect_to(@post,
        :notice => 'Post was successfully created.') }
      format.xml  { render :xml => @post,
        :status => :created, :location => @post }
    else
      format.html { render :action => "new" }
      format.xml  { render :xml => @post.errors,
        :status => :unprocessable_entity }
    end
  end
end
```

```ruby
def update
  @post = Post.find(params[:id])

  respond_to do |format|
    if @post.update_attributes(params[:post])
      format.html { redirect_to(@post,
        :notice => 'Post was successfully updated.') }
      format.xml  { head :ok }
    else
      format.html { render :action => "edit" }
      format.xml  { render :xml => @post.errors,
        :status => :unprocessable_entity }
    end
  end
end
```

```ruby
def destroy
  @post = Post.find(params[:id])
  @post.destroy

  respond_to do |format|
    format.html { redirect_to(posts_url) }
    format.xml  { head :ok }
  end
end
```

More Controller Info

Stuff that didn’t fit anywhere else

Parameters

- Parameters are sent to the controller as a Hash named “params”

- These can be seen in the output from the rails server command

```
@post = Post.find(params[:id])

@post = Post.new(params[:post])
```

Render / Redirect

- Every action must either render a view or redirect to another action
- Rails will look for a view with the same name as the action by default

```
render :action => "edit"


redirect_to(posts_url)
```

Response Formats

- Rails can generate responses in other formats besides HTML
- Scaffold generated controllers include XML responses useful for creating APIs
- Other examples formats include Javascript and JSON.

The Flash

- These are messages to the user that are only valid for a single request
- Usually styled differently to stand out
- These are usually set on a redirect:

```
redirect_to @post,:notice => 'Post was
successfully updated.'
```

Adding Comments

- We added a route for the create comment action earlier.
- We still need to add a form and a simple controller.

The Form

```
<h3>Add A Comment</h3>
<%= form_for([@post, @post.comments.build]) do |f| %>
  <div class="field">
    <%= f.label :author %><br />
    <%= f.text_field :author %>
  </div>
  <div class="field">
    <%= f.label :body %><br />
    <%= f.text_area :body %>
  </div>
  <div class="actions">
    <%= f.submit %>
  </div>
<% end %>
```

CommentsController

- rails generate controller comments
- app/controllers/comments_controller.rb

```ruby
class CommentsController < ApplicationController
  def create
    @post = Post.find(params[:post_id])
    @comment = @post.comments.create(params[:comment])
    redirect_to post_path(@post)
  end
end
```

Homework

There may be a test next time...

Homework

- We're going to build a new app for the second half of the class. I am thinking building a Twitter clone. If you'd rather we build something else, let me know.
- Make sure you understand everything inside the "app" directory and how models, views and controllers interact.