Agile Software Development

Produced by

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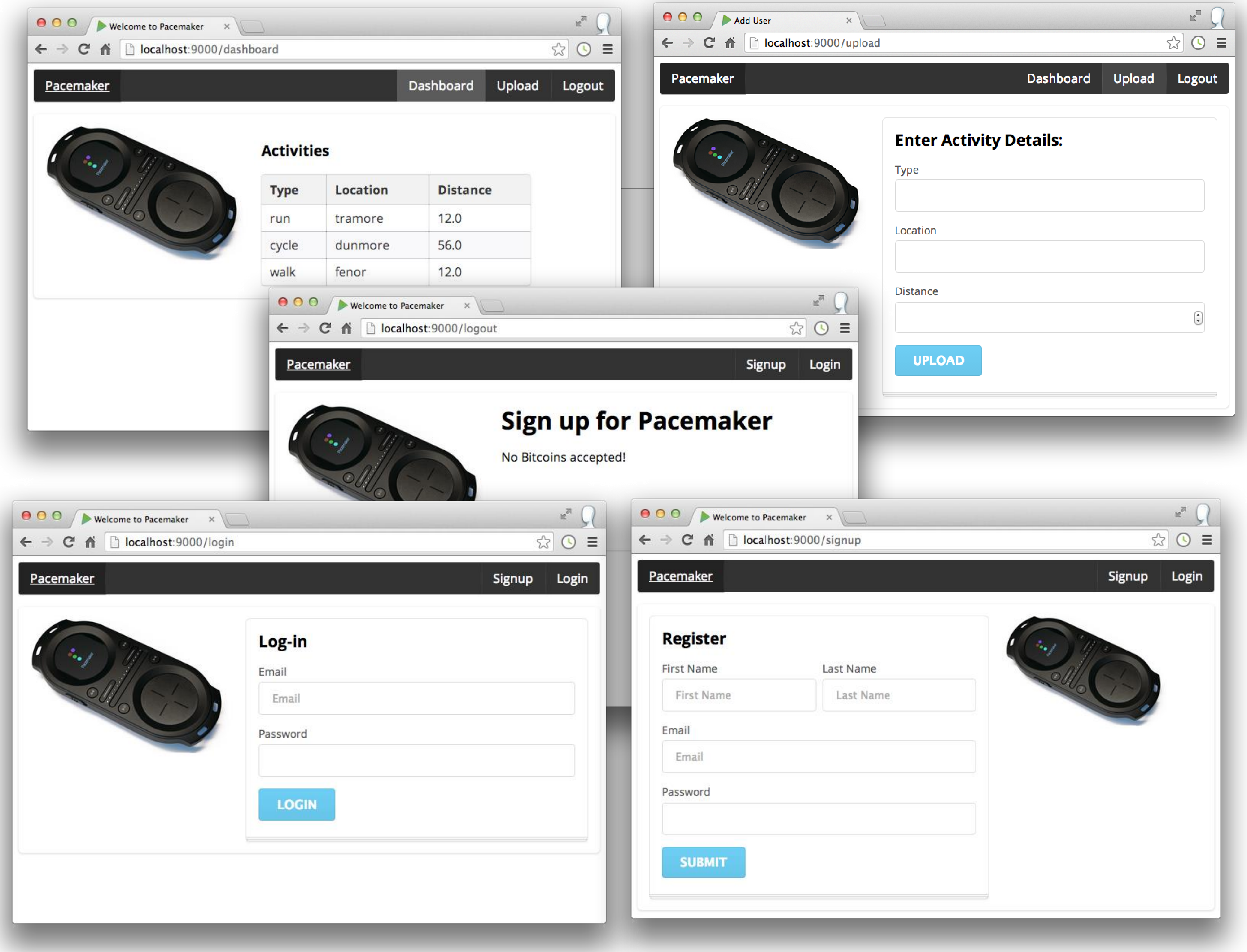
eLearning
support unit

pacemakerplay



Activities

Type	Location	Distance
run	tramore	12.0
cycle	dunmore	56.0
walk	fenor	12.0

Enter Activity Details:

Type

Location

Distance

Sign up for Pacemaker

No Bitcoins accepted!

Log-in

Email

Email

Password

Register

First Name

First Name

Last Name

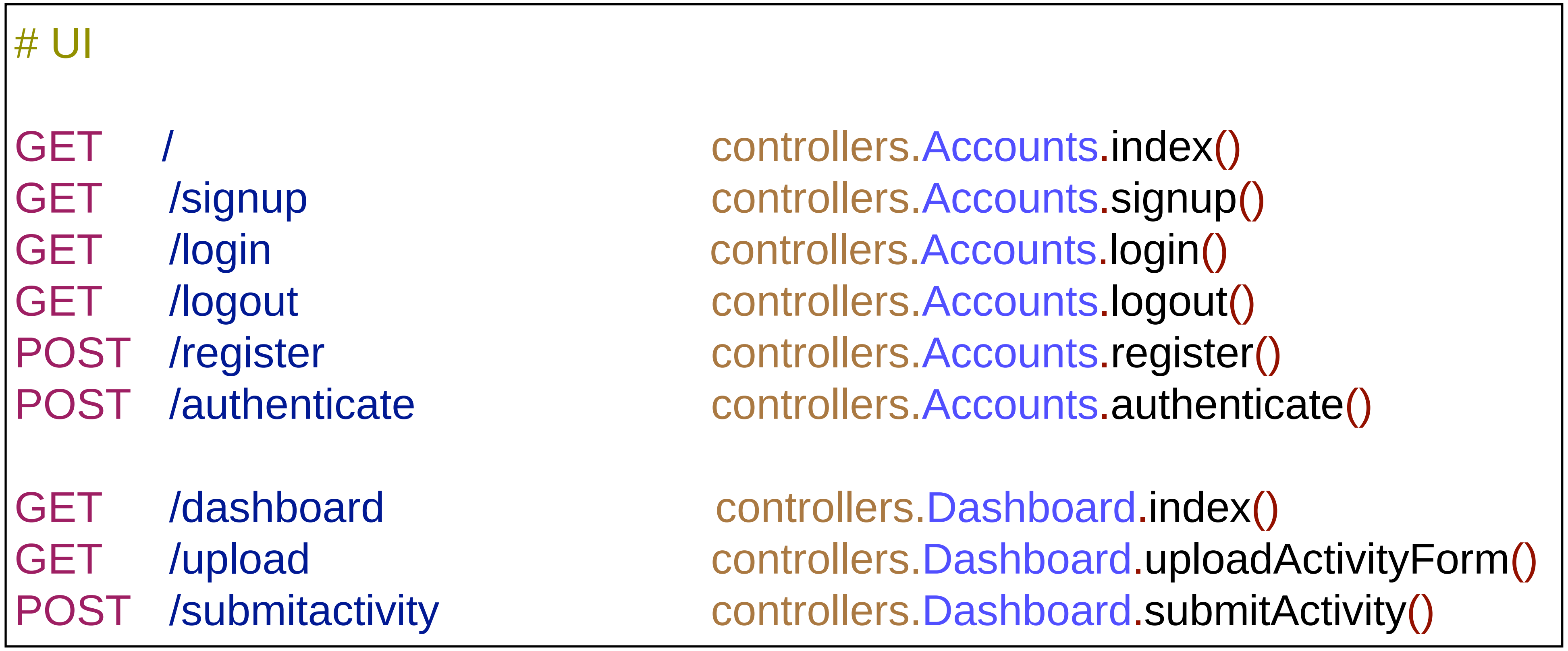
Last Name

Email

Email

Password

Routes - UI



```
# UI

GET     /                    controllers.Accounts.index()
GET     /signup              controllers.Accounts.signup()
GET     /login               controllers.Accounts.login()
GET     /logout              controllers.Accounts.logout()
POST    /register            controllers.Accounts.register()
POST    /authenticate        controllers.Accounts.authenticate()

GET     /dashboard           controllers.Dashboard.index()
GET     /upload              controllers.Dashboard.uploadActivityForm()
POST    /submitactivity      controllers.Dashboard.submitActivity()
```

- Routes to deliver UI.
- Each of these routes appears in views.
- Each of these actions generates and returns a complete HTML page.

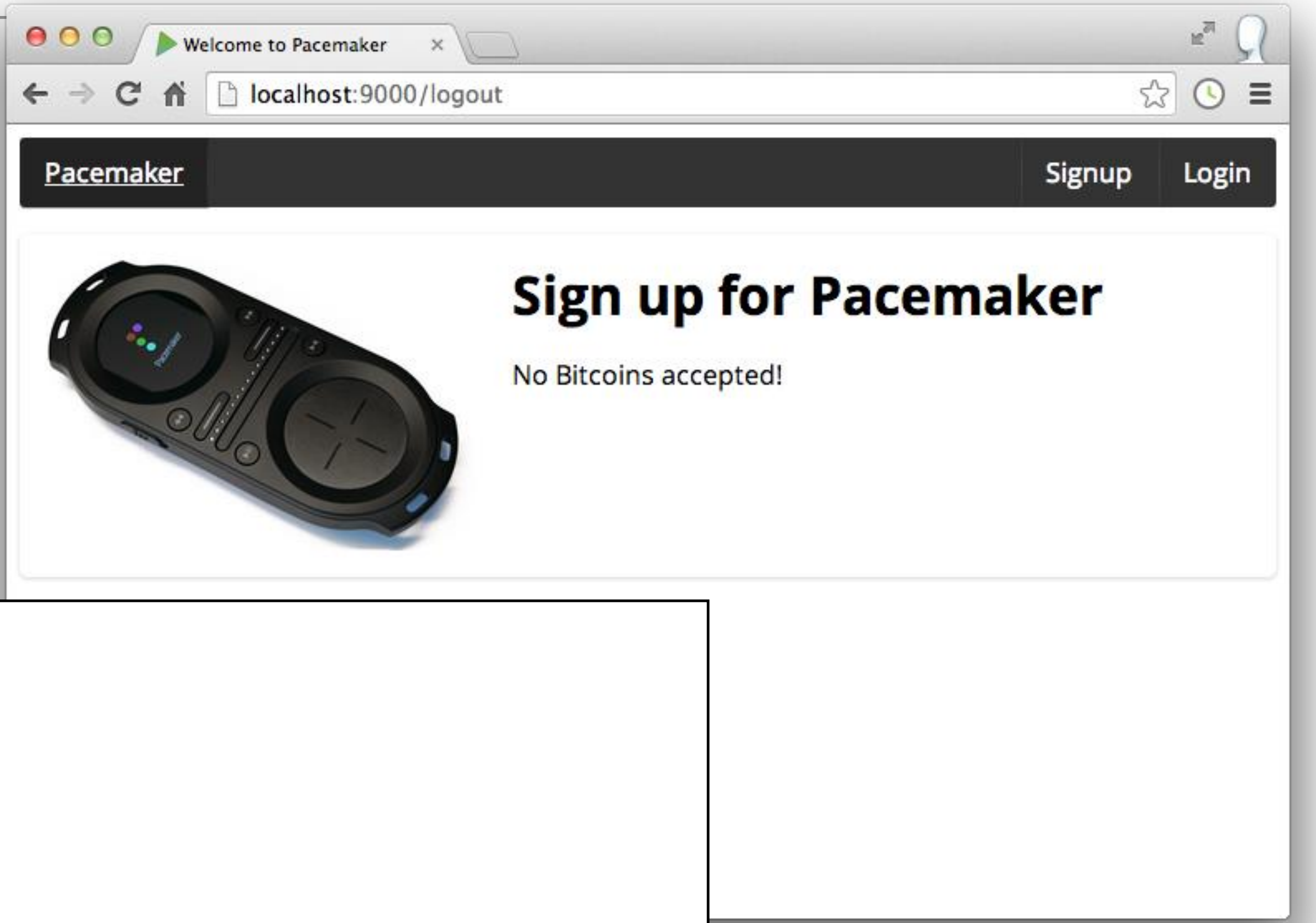
Welcome

routes

```
GET     /                    controllers.Accounts.index()
```

Accounts.java

```
public class Accounts extends Controller
{
  public static Result index()
  {
    return ok(welcome_main.render());
  }
...
}
```



Sign up for Pacemaker

No Bitcoins accepted!

```
@()

@main("Welcome to Pacemaker") {
  @welcome_menu()

<section class="ui raised segment">
  <div class="ui grid">
    <aside class="six wide column">
      <img src="@routes.Assets.at("images/pacemaker.jpg")" class="ui medium image">
    </aside>
    <article class="ten wide column">
      <h1 class="ui  header"> Sign up for Pacemaker  </h1>
      <p> No Bitcoins accepted! </p>
    </article>
  </div>
</section>
}
```

welcome_main.scala.html

templating

Entire view is inserted into **@content** section of page

```
@(title: String)(content: Html)
<!DOCTYPE html>
<html>
        <head>
          <title>@title</title>
          <meta charset="utf-8">
          <meta http-equiv="X-UA-Compatible" content="IE=edge,chrome=1" />
          <meta name="viewport" content="width=device-width, initial-scale=1.0, maximum-scale=1.

          <link rel="stylesheet" type="text/css" href="@routes.Assets.at("semantic/css/semantic.css"
          <link rel="stylesheet" type="text/css" href="@routes.Assets.at("stylesheets/main.css")">
          <link href='http://fonts.googleapis.com/css?family=Source+Sans+Pro:400,700|Open+Sans:
    <link rel="shortcut icon" type="image/png" href="@routes.Assets.at("images/favicon.png")">

    <script src="@routes.Assets.at("javascripts/jquery-2.0.3.min.js")"></script>
    <script src="@routes.Assets.at("semantic/javascript/semantic.min.js")"></script>
        </head>

  <body>
    @content
   </body>
</html>
```

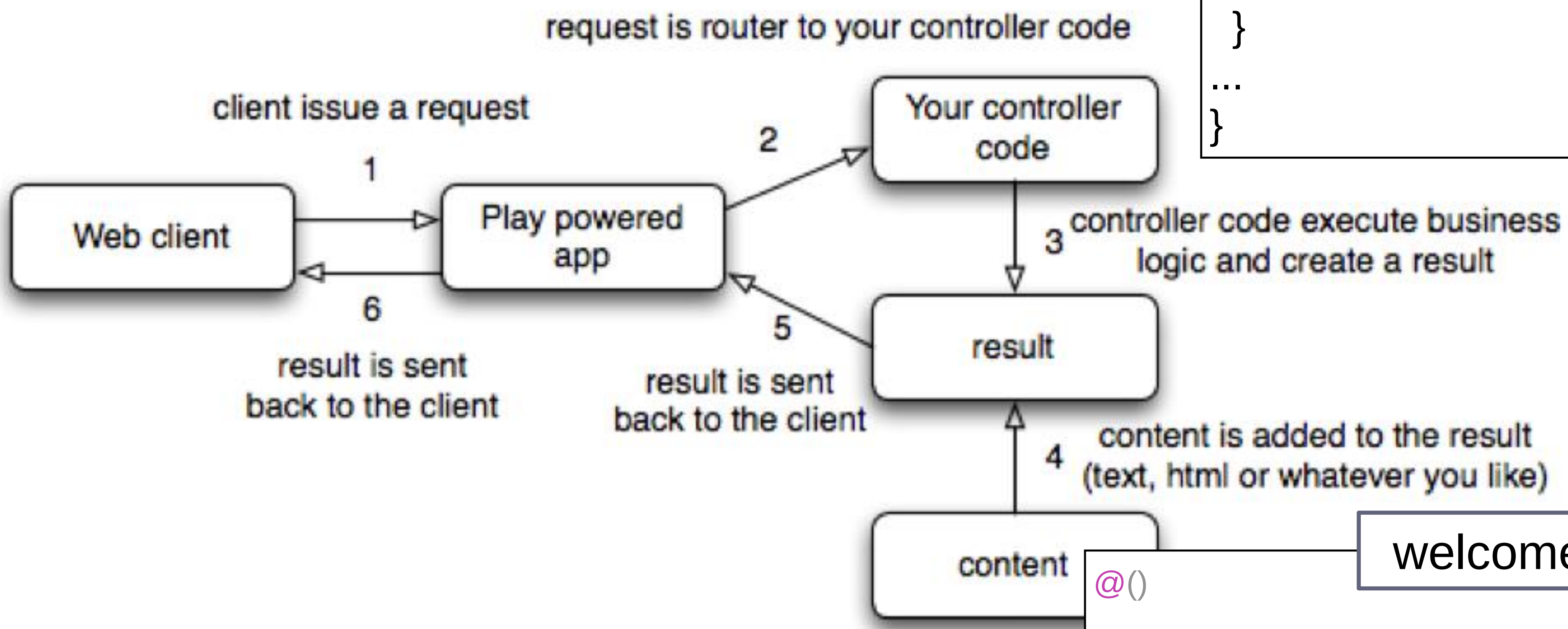
main.scala.html

```
@()

@main("Welcome to Pacemaker") {
  @welcome_menu()

<section class="ui raised segment">
  <div class="ui grid">
    <aside class="six wide column">
      <img src="@routes.Assets.at("images/pacemaker.jpg")" class="ui medium image">
    </aside>
    <article class="ten wide column">
      <h1 class="ui  header"> Sign up for Pacemaker  </h1>
      <p> No Bitcoins accepted! </p>
    </article>
  </div>
</section>
}
```

welcome_main.scala.html

@main implies that main.scala.html will define the structure of the generated page

```
GET   /    controllers.Accounts.index()
```


request is router to your controller code
client issue a request
1
2
Web client
Play powered app
Your controller code
3
controller code execute business logic and create a result
result
6
5
result is sent back to the client
result is sent back to the client
4
content is added to the result (text, html or whatever you like)
content

Accounts.java

```java
public class Accounts extends Controller
{
  public static Result index()
  {
    return ok(welcome_main.render());
  }
...
}
```

welcome_main.scala.html

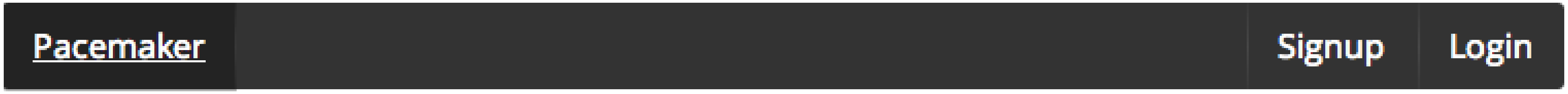
```html
@()

@main("Welcome to Pacemaker") {
  @welcome_menu()

<section class="ui raised segment">
  <div class="ui grid">
    <aside class="six wide column">
      <img src="@routes.Assets.at("images/pacemaker.jpg")" cl
    </aside>
    <article class="ten wide column">
      <h1 class="ui  header"> Sign up for Pacemaker  </h1>
      <p> No Bitcoins accepted! </p>
    </article>
  </div>
</section>
}
```

Includes

```
@()

@main("Welcome to Pacemaker") {
  @welcome_menu()

<section class="ui raised segment">

ges/pacemaker.jpg")" class="ui medium image">

 Pacemaker  </h1>

  </div>
</section>
}
```

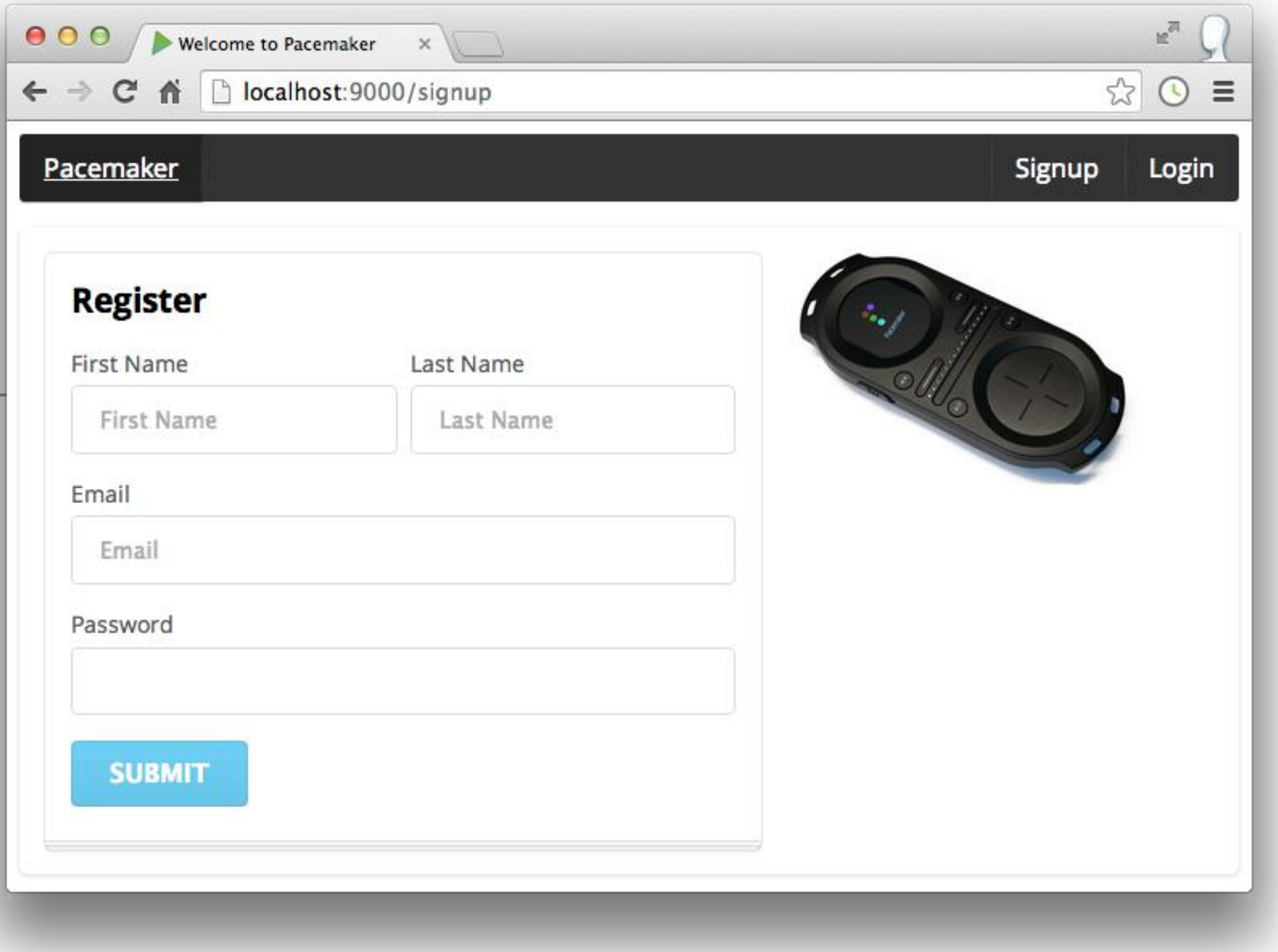
```
@()

<nav class="ui inverted menu">
  <div class="header item"> <a href="/"> Pacemaker </a> </div>
  <div class="right menu">
    <a class="item" href="/signup"> Signup</a>
    <a class="item" href="/login">  Login</a>
  </div>
</nav
```

welcome_menu.scala.html



Signup

```
@()

@main("Welcome to Pacemaker") {
  @welcome_menu()

<section class="ui raised segment">
  <div class="ui grid">
    <div class="ui ten wide column">
      <div class="ui stacked fluid form segment">
        <form action="/register" method="POST">
          <h3 class="ui header">Register</h3>
          <div class="two fields">
            <div class="field">
              <label>First Name</label>
              <input placeholder="First Name" type="text" name="firstname">
            </div>
            <div class="field">
              <label>Last Name</label>
              <input placeholder="Last Name" type="text" name="lastname">
            </div>
          </div>
          <div class="field">
            <label>Email</label>
            <input placeholder="Email" type="text" name="email">
          </div>
          <div class="field">
            <label>Password</label>
            <input type="password" name="password">
          </div>
          <button class="ui blue submit button">Submit</button>
        </form>
      </div>
    </div>
    <aside class="ui five wide column">
      <img src="@routes.Assets.at("images/pacemaker.jpg")" class="ui medium image">
    </aside>
  </div>
</section>
}
```



```
GET     /signup        controllers.Accounts.signup()
```

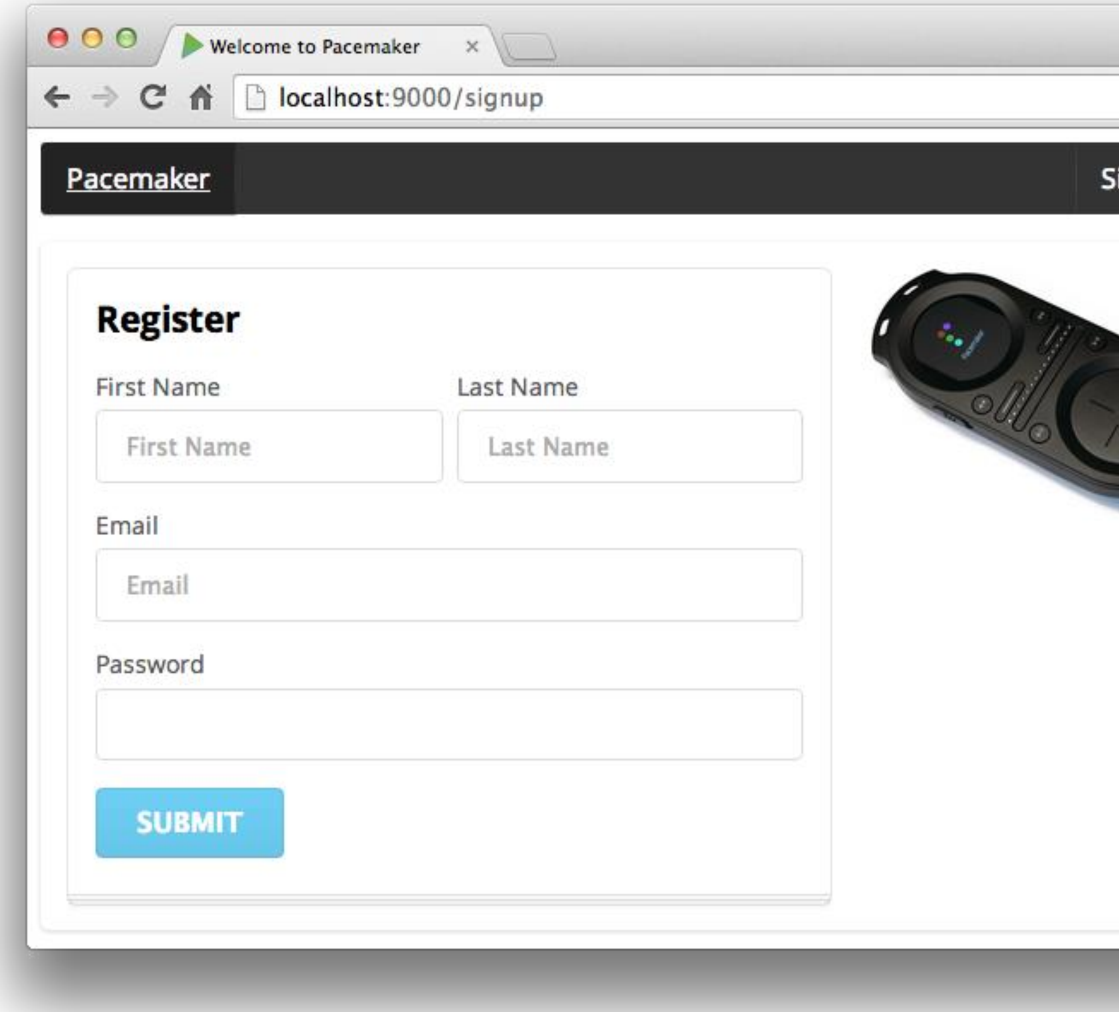
```
public static Result signup()
{
  return ok(accounts_signup.render());
}
```

Signup

```
GET     /signup        controllers.Accounts.signup()
```

```
<form action="/register" method="POST">
  <h3 class="ui header">Register</h3>
  <div class="two fields">
    <div class="field">
      <label>First Name</label>
      <input placeholder="First Name" type="text"    name=“firstname" >
    </div>
    <div class="field">
      <label>Last Name</label>
      <input placeholder="Last Name" type="text"    name=“lastname">
    </div>
  </div>
  <div class="field">
    <label>Email</label>
    <input placeholder="Email"      type="text"       name=“email">
  </div>
  <div class="field">
    <label>Password</label>
    <input type="password"                            name=“password" >
  </div>
  <button class="ui blue submit button">Submit</button>
</form>
```

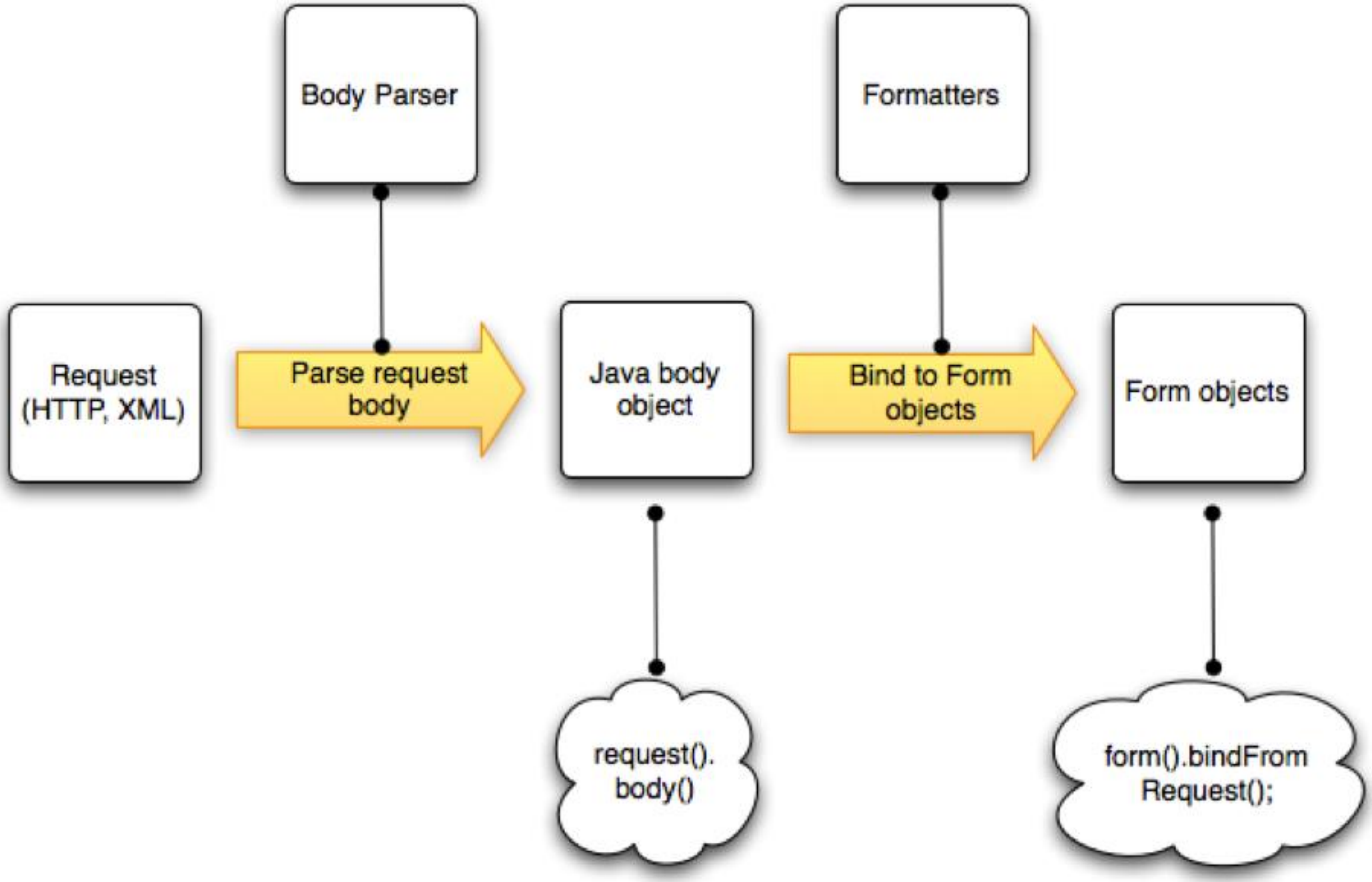
accounts_signup.scala.html



```
public static Result signup()
{
  return ok(accounts_signup.render());
}
```

Signup

```
public class Accounts extends Controller
{
  private static final Form<User> userForm = Form.form(User.class);
  //...

  public static Result register()
  {
    Form<User> boundForm = userForm.bindFromRequest();
    if(loginForm.hasErrors())
    {
      return badRequest(accounts_login.render());
    }
    else
    {
      User user = boundForm.get();
      Logger.info ("User = " + user.toString());
      user.save();
      return ok(welcome_main.render());
    }
  }

//...
```



Body Parser

Formatters

Request (HTTP, XML)

Parse request body

Java body object

Bind to Form objects

Form objects

request(). body()

form().bindFrom Request();

Signup Form Processing

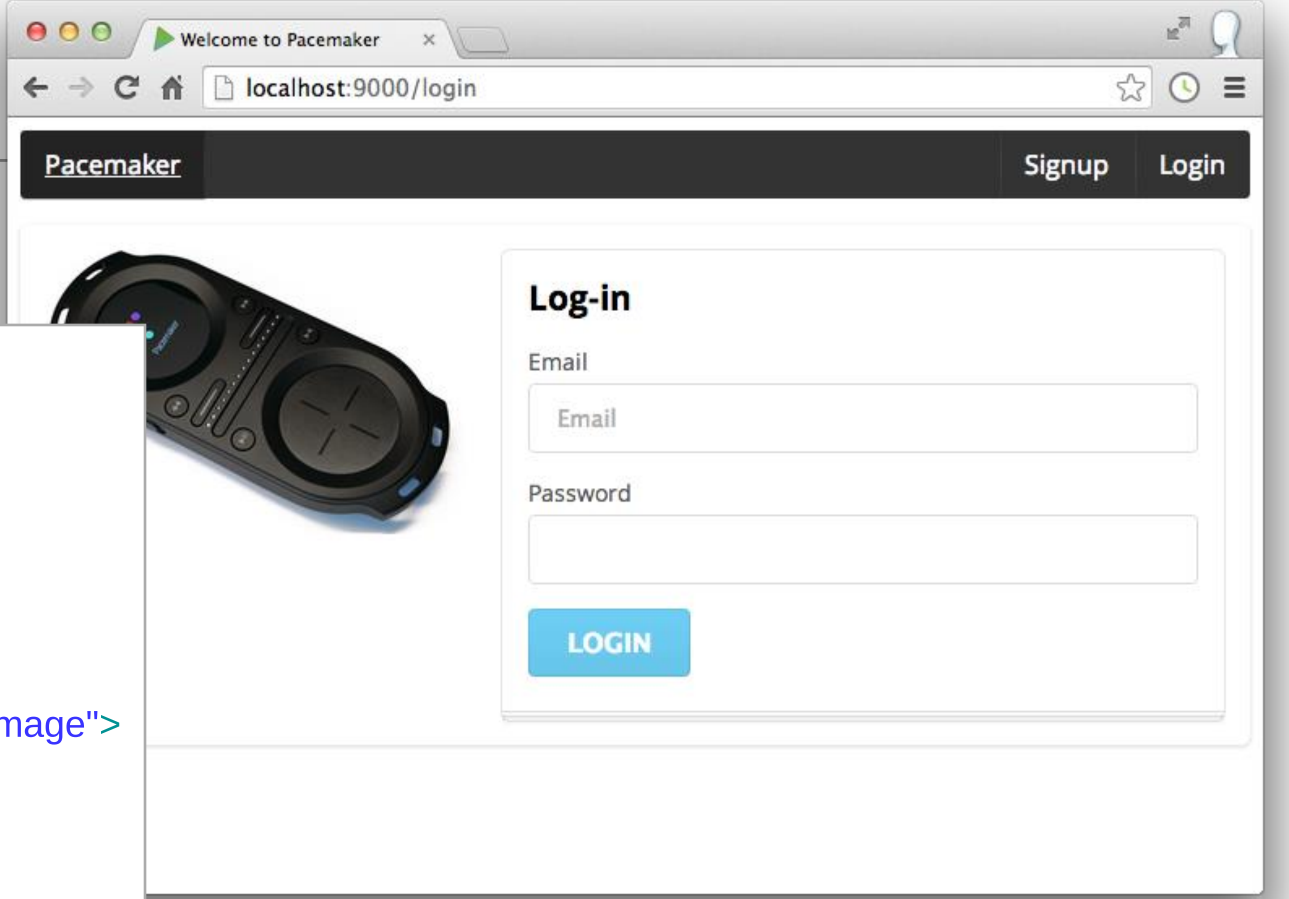
- Recover named form input items from request.

- Extract these elements into a Java object

```
public class Accounts extends Controller
{
  private static final Form<User> userForm = Form.form(User.class);
  //...

  public static Result register()
  {
    Form<User> boundForm = userForm.bindFromRequest();
    if(loginForm.hasErrors())
    {
      return badRequest(accounts_login.render());
    }
    else
    {
      User user = boundForm.get();
      Logger.info ("User = " + user.toString());
      user.save();
      return ok(welcome_main.render());
    }
  }

//...
```

```
GET     /login          controllers.Accounts.login()
```

Login



```
@()

@main("Welcome to Pacemaker") {
  @welcome_menu()

 <section class="ui raised segment">
   <div class="ui grid">
     <aside class="ui six wide column">
      <img src="@routes.Assets.at("images/pacemaker.jpg")" class="ui medium image">
     </aside>
     <div class="ui ten wide column fluid form">
       <div class="ui stacked segment">
         <form action="/authenticate" method="POST">
           <h3 class="ui header">Log-in</h3>
           <div class="field">
             <label>Email</label>
             <input placeholder="Email" type="text" name="email">
           </div>
           <div class="field">
             <label>Password</label>
             <input type="password" name="password">
           </div>
           <button class="ui blue submit button">Login</button>
         </form>
       </div>
     </div>
   </div>
</section>
}
```

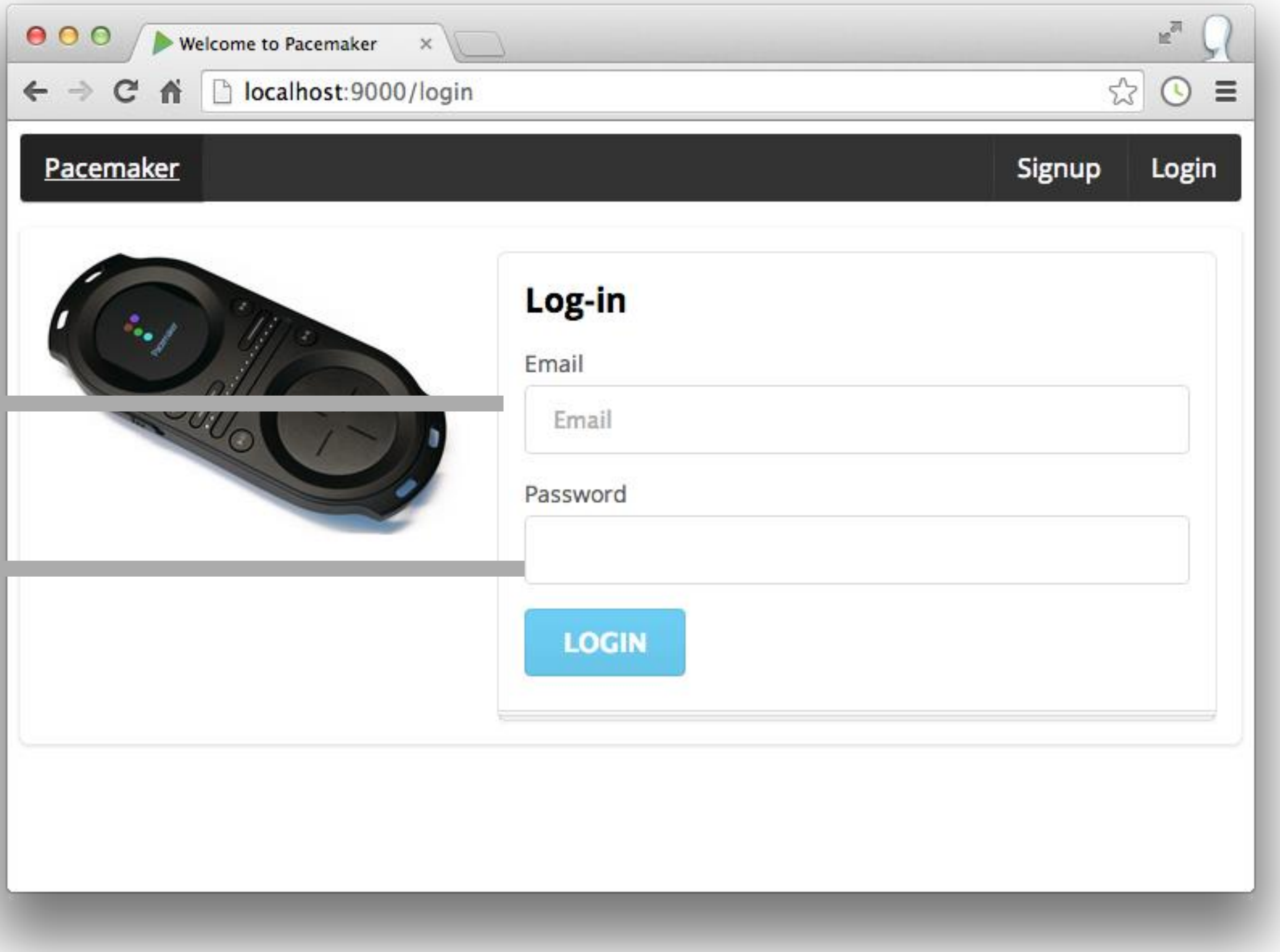
accounts_login.scala.html

```
public static Result login()
{
  return ok(accounts_login.render());
}
```

Login

```
<form action="/authenticate" method="POST">
  <h3 class="ui header">Log-in</h3>
  <div class="field">
    <label>Email</label>
    <input placeholder="Email" type="text" name="email">
  </div>
  <div class="field">
    <label>Password</label>
    <input type="password"                   name="password">
  </div>
  <button class="ui blue submit button">Login</button>
</form>
```

accounts_login.scala.html



Sessions - login

- A globally accessible data structure into which we put details of ‘current’ user.

- Read this back in other controllers to determine appropriate content.

```
public class Accounts extends Controller
{
  private static final Form<User> loginForm = Form.form(User.class);
  //...

  public static Result authenticate()
  {
    Form<User> boundForm = loginForm.bindFromRequest();
    if(loginForm.hasErrors())
    {
      return badRequest(accounts_login.render());
    }
    else
    {
      session("email", boundForm.get().email);
      return redirect(routes.Dashboard.index());
    }
  }
  //...
}
```

- Not checking if user is valid!

- Should compare password/email with database, and only allow in of valid user credential presented.

Sessions - Logout

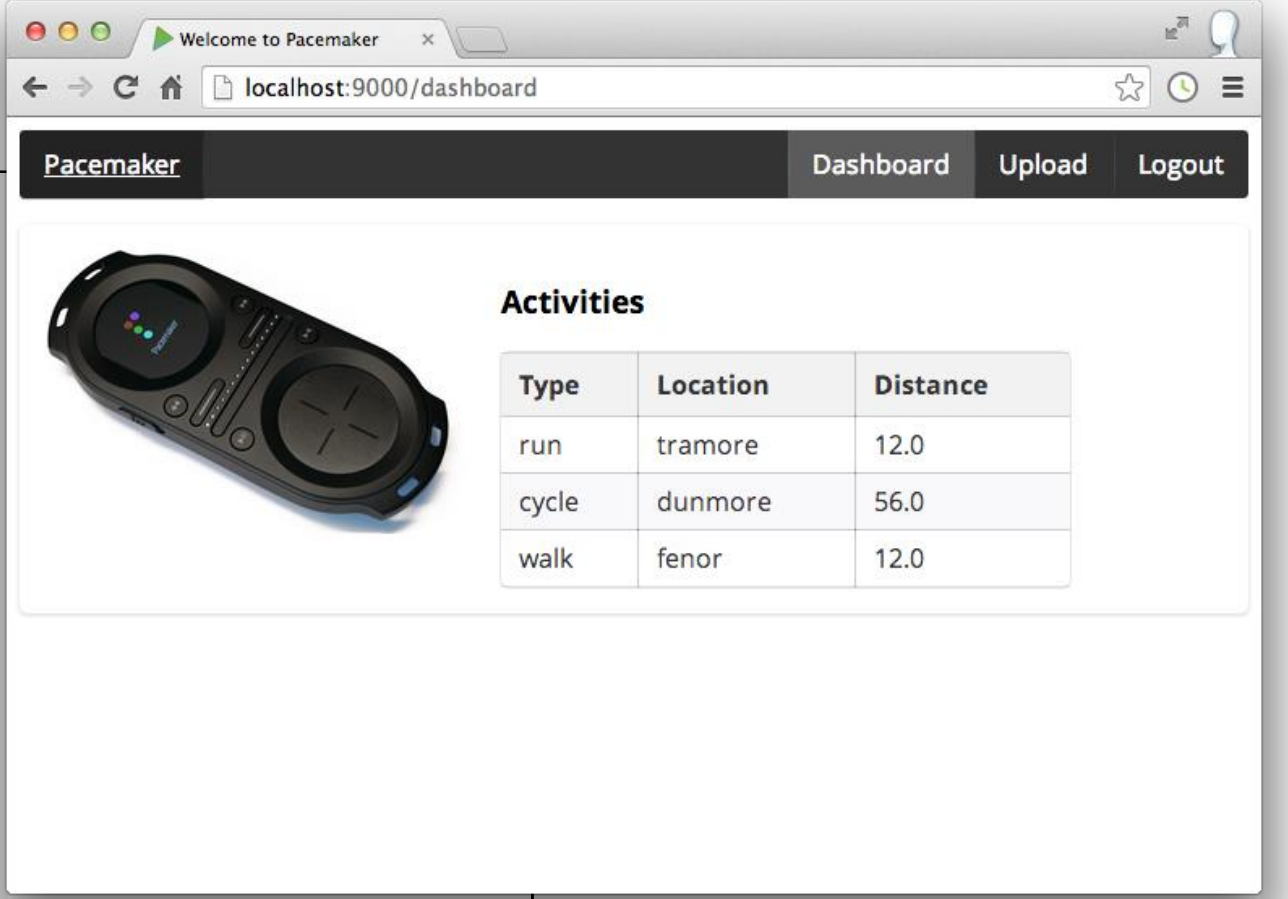
- Destroy the session.
- Redirect to Welcome page.

```
public static Result logout()
{
  session().clear();
  return ok(welcome_main.render());
}
```

Dashboard

```
@(activities: List[Activity])

@main("Welcome to Pacemaker") {

  <nav class="ui inverted menu">
    <div class="header item"> <a href="/"> Pacemaker </a> </div>
    <div class="right menu">
      <a class="active item" href="/dashboard"> Dashboard</a>
      <a class="item" href="/upload">  Upload</a>
      <a class="item" href="/logout">  Logout</a>
    </div>
  </nav>

  <section class="ui raised segment">
    <div class="ui grid">
      <aside class="six wide column">
        <img src="@routes.Assets.at("images/pacemaker.jpg")" class="ui medium image">
      </aside>
      <article class="eight wide column">
        <h3> <class="ui header"> Activities </h3>
        <table class="ui celled table segment">
          <thead>
            <tr>
              <th>Type</th>
              <th>Location</th>
              <th>Distance</th>
            </tr>
          </thead>
          <tbody>
                        @for(i <- 0 until activities.size) {
                          <tr>
                            <td> @activities(i).kind </td> <td> @activities(i).location </td> <td> @activities(i).distance </td>
                          </tr>
                        }
          </tbody>
        </table>
      </article>
    </div>
  </section>
}
```

dashboard_main.scala.html



Activities

Type	Location	Distance
run	tramore	12.0
cycle	dunmore	56.0
walk	fenor	12.0

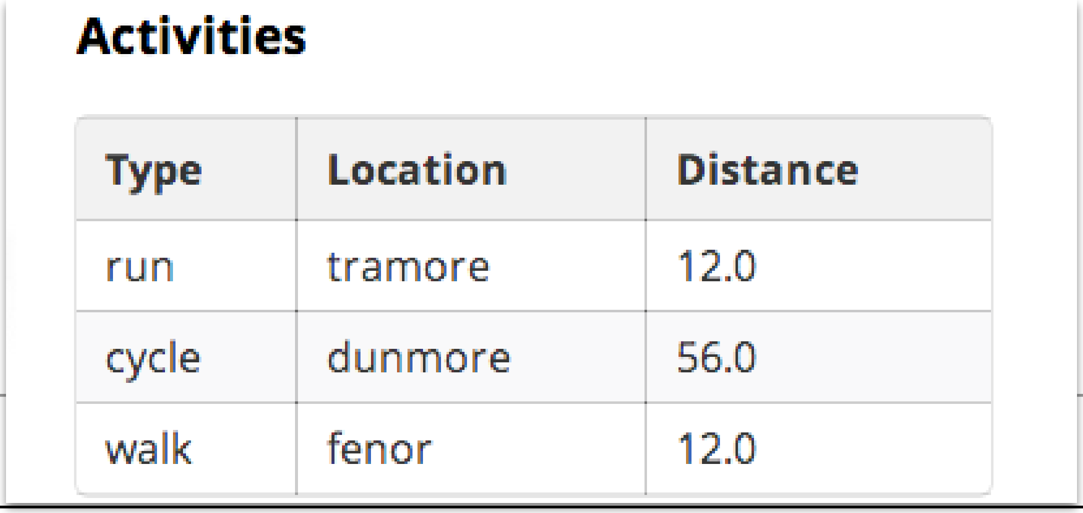
```
GET     /dashboard        controllers.Dashboard.index()
```

Dashboard

```
GET     /dashboard                controllers.Dashboard.index()
GET     /upload                   controllers.Dashboard.uploadActivityForm()
POST    /submitactivity           controllers.Dashboard.submitActivity()
```

```
public class Dashboard extends Controller
{
  private static final Form<Activity> activityForm = Form.form(Activity.class);

  public static Result index()
  {
    String email = session().get("email");
    User user = User.findByEmail(email);
    return ok(dashboard_main.render(user.activities));
  }

  public static Result uploadActivityForm()
  {
    return ok(dashboard_uploadactivity.render());
  }

  public static Result submitActivity()
  {
    Form<Activity> boundForm = activityForm.bindFromRequest();
    Activity activity = boundForm.get();
    if(activityForm.hasErrors())
    {
      return badRequest();
    }

    String email = session().get("email");
    User user = User.findByEmail(email);
    user.activities.add(activity);
    user.save();
    return redirect (routes.Dashboard.index());
  }
}
```

Dashboard



Activities

Type	Location	Distance
run	tramore	12.0
cycle	dunmore	56.0
walk	fenor	12.0

- Activities list sent to view.
- Scala for loop to iterate over this list, and present in a table.

```
public class Dashboard extends Controller
{
  //...
  public static Result index()
  {
    String email = session().get("email");
    User user = User.findByEmail(email);
    return ok(dashboard_main.render(user.activities));
  }
  //...
}
```

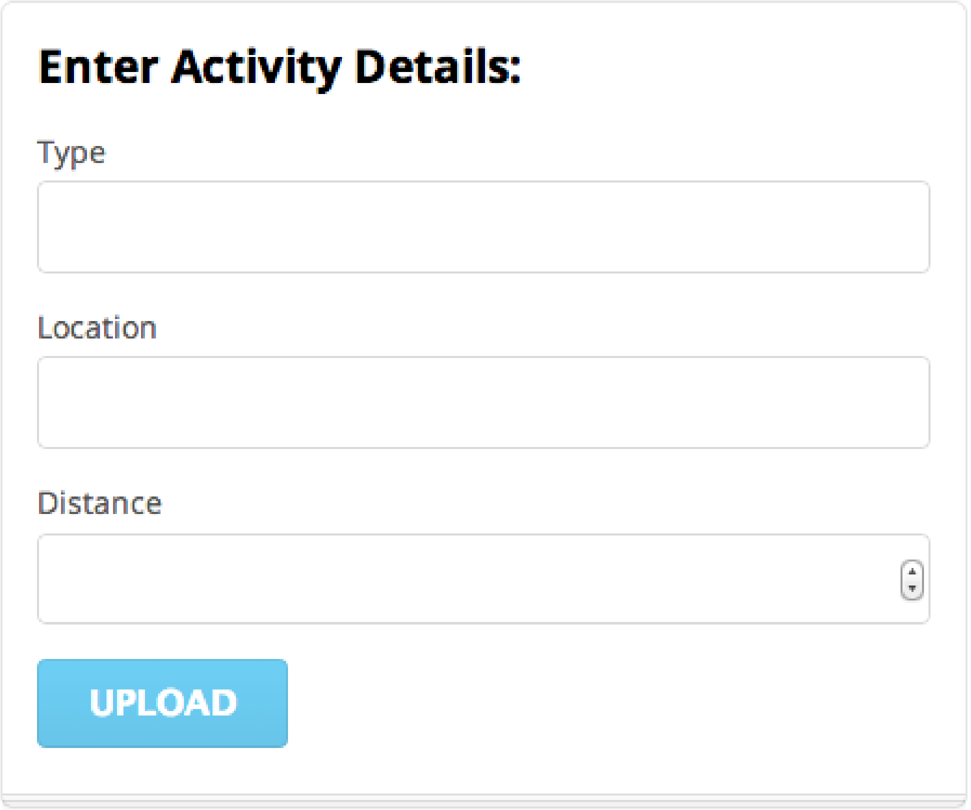
```
<table class="ui celled table segment">
  <thead>
    <tr>
      <th>Type</th>
      <th>Location</th>
      <th>Distance</th>
    </tr>
  </thead>
  <tbody>
            @for(i <- 0 until activities.size) {
              <tr>
                <td> @activities(i).kind </td> <td> @activities(i).location </td> <td> @activities(i).distance </td>
              </tr>
            }
  </tbody>
</table>
```

dashboard_main.scala.html

Upload Activity

```
<form action="/submitactivity" method="POST">
  <h3 class="ui header">Enter Activity Details: </h3>
  <div class="field">
    <label>Type</label>
    <input type="text" name="kind">
  </div>
  <div class="field">
    <label>Location</label>
    <input type="text" name="location">
  </div>
<div class="field">
    <label>Distance</label>
    <input type="number" name="distance">
  </div>
  <button class="ui blue submit button"> Upload </button>
</form>
```

dashboard_uploadactivity.scala.html



```
public class Dashboard extends Controller
{
  private static final Form<Activity> activityForm = Form.form(Activity.class);
  //…

  public static Result submitActivity()
  {
    Form<Activity> boundForm = activityForm.bindFromRequest();
    Activity activity = boundForm.get();
    if(activityForm.hasErrors())
    {
      return badRequest();
    }
    String email = session().get("email");
    User user = User.findByEmail(email);
    user.activities.add(activity);
    user.save();
    return redirect (routes.Dashboard.index());
  }
}
```

Upload Activity

Acquire the Activity object

Ask the session who is ‘logged in’

Add the new Activity to this users activities list

Save the updates

Back to dashboard

```
public static Result submitActivity()
 {
   Form<Activity> boundForm = activityForm.bindFromRequest();
   Activity activity = boundForm.get();
   if(activityForm.hasErrors())
   {
     return badRequest();
   }

   String email = session().get("email");
   User user = User.findByEmail(email);

   user.activities.add(activity);



   user.save();


   return redirect (routes.Dashboard.index());
 }
```