

Web Development

Produced
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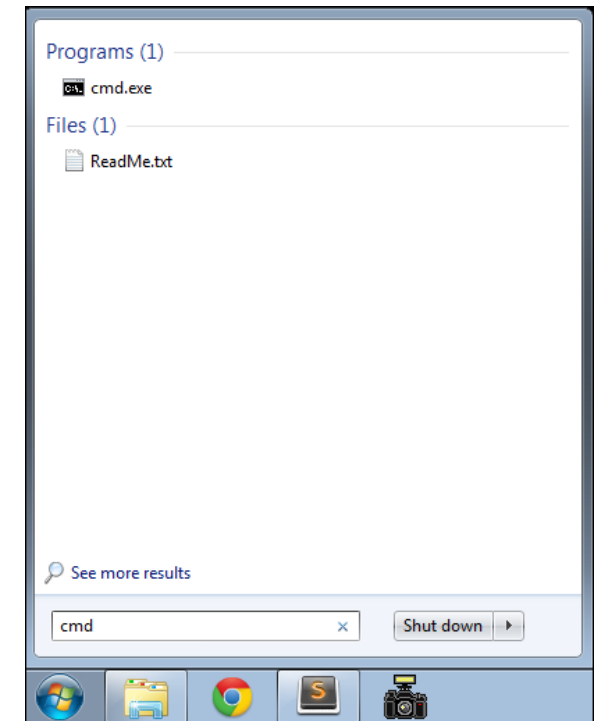
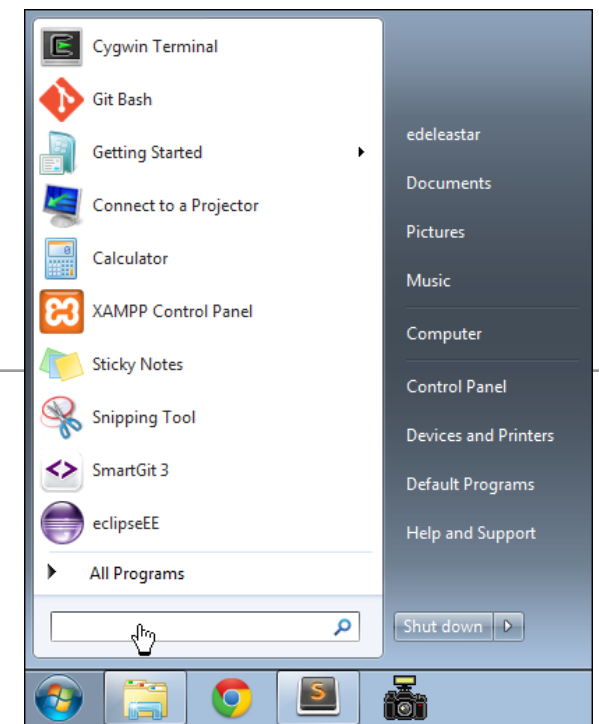
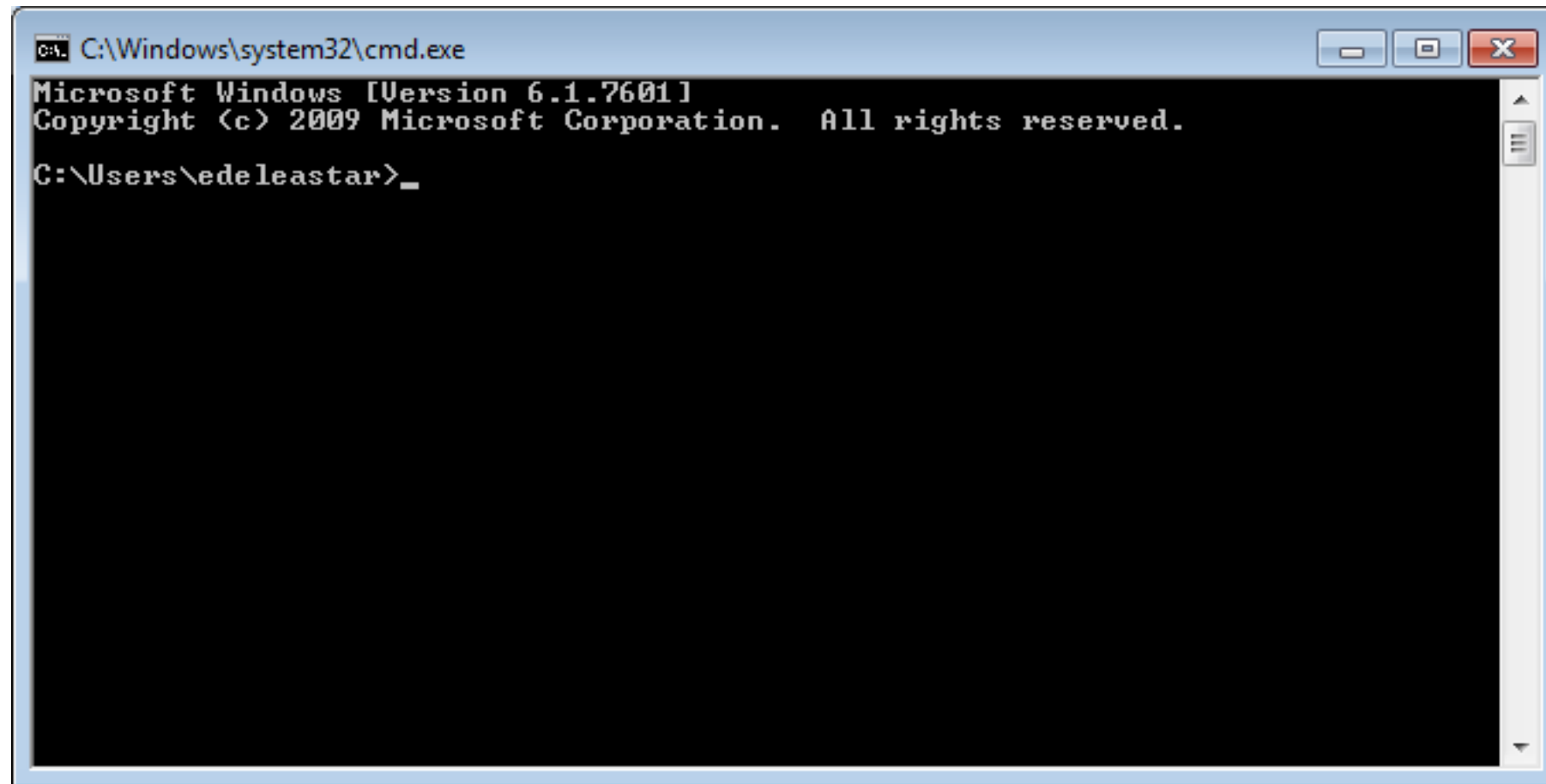
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Getting Started with Play


Web Development

DOS Commands



- This is the Command Line Interface for Windows (CLI)
- In Mac/Linux it is called "Terminal"
- Learning to use the CLI is an **essential** skill for a programmer

Example DOS Commands

- **dir**
 - list all files in a directory
 - **cd ..**
 - change to a parent directory
 - **cd <directory name>**
 - change to a specific directory
 - **mkdir <directory name>**
 - create a directory
 - **rmdir <directory name>**
 - delete a directory
 - On Mac/Linux:
 - use **ls** instead of **dir**
 - These commands always have a 'current directory' in mind
 - A directory is another name for a folder.
 - On Windows, the current directory appears in the 'prompt'
- 
- ```
C:\workspace>
```
- In Mac/Linux, type '**pwd**' to find out the current directory.
  - On Windows, '\' or '/' can be used to separate directory names
  - On Mac/Linux, only '/' is accepted
  - So --> always is '/' to avoid confusion

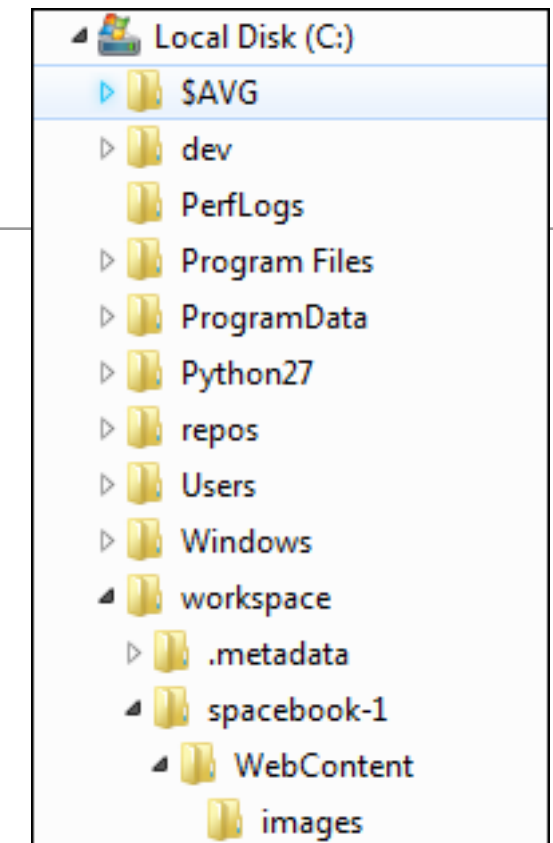
```
C:\Windows\system32\cmd.exe
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Users\edelestar>cd ..
C:\Users>cd ..
C:\>cd workspace
C:\workspace>dir
Volume in drive C has no label.
Volume Serial Number is 6C80-5ECD

Directory of C:\workspace

23/09/2012 15:59 <DIR> .
23/09/2012 15:59 <DIR> ..
23/09/2012 15:58 <DIR> .metadata
23/09/2012 15:59 <DIR> spacebook-1
 0 File(s) 0 bytes
 4 Dir(s) 8,778,682,368 bytes free

C:\workspace>_
```



*C:\Users\edelestar>cd ..*

*C:\Users\>cd ..*

*C:\>cd workspace*

*C:\>workspace>dir*

*...*

*...*

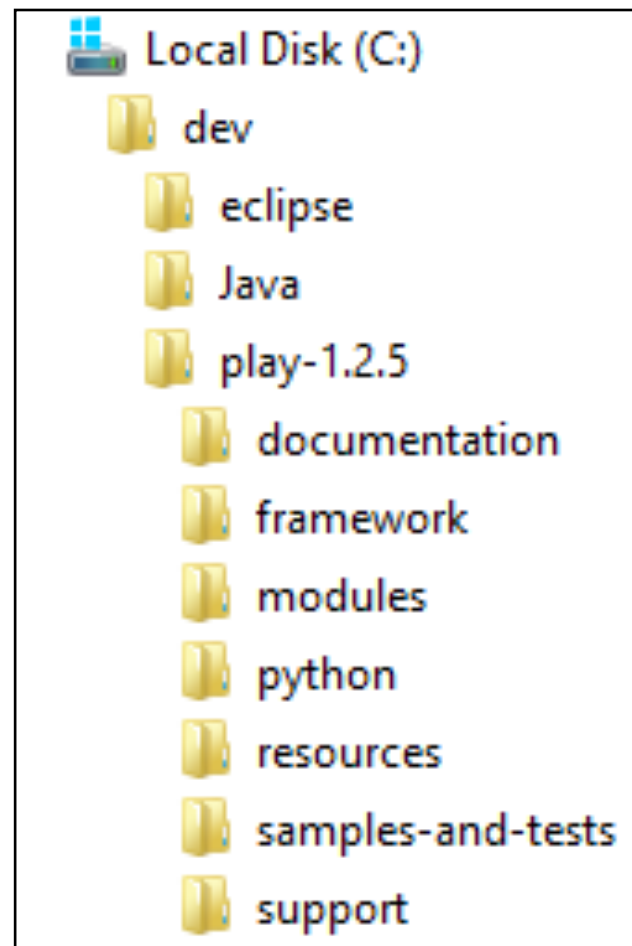
*C:\>*

- Never use spaces in directory or file names
- Never use upper case in directory or file names
- If you wish to use readable multiple words for a directory or file name, separate the words with '-'. e.g.
  - web-development
  - java-projects

# Installing Play

---

- Play must be downloaded and installed on your PC
  - [www.playframework.org](http://www.playframework.org)
  - Use version 1.2.5
- Installing Play on your PC is just expanding the zip archive into a folder:
- User this folder structure:



# Verifying Play

---

- Play applications are created and tuned using the CLI (i.e. DOS on windows)
  - You must be able to navigate your folder structure using the CLI
  - If you are having difficulty - fix this immediately (i.e. learn basics of DOS)!
- To verify play, just type **play** on command line
  - This works if play is 'on the path'
- If no response (error), then type
  - **c:\dev\play-1.2.5\play**
  - This is an 'explicit path' - ie. a fully qualified path to the play program

```
~
~ _ _ _ _ _
~ _ _ _ _ _ _ _ _ _
~ | ' _ \ | / _ ' | | | |
~ | _ _ / | \ _ _ | \ _ _ (_)
~ | _ | _ _ _ _ _ | _ _ /
~
~
~ play! 1.2.5, http://www.playframework.org
~
~ Usage: play cmd [app_path] [--options]
~
~ with, new Create a new application
~ run Run the application in the current
shell
~ help Show play help
```

# Creating a Play Application

---

```
play new spacebook
```

You should get:

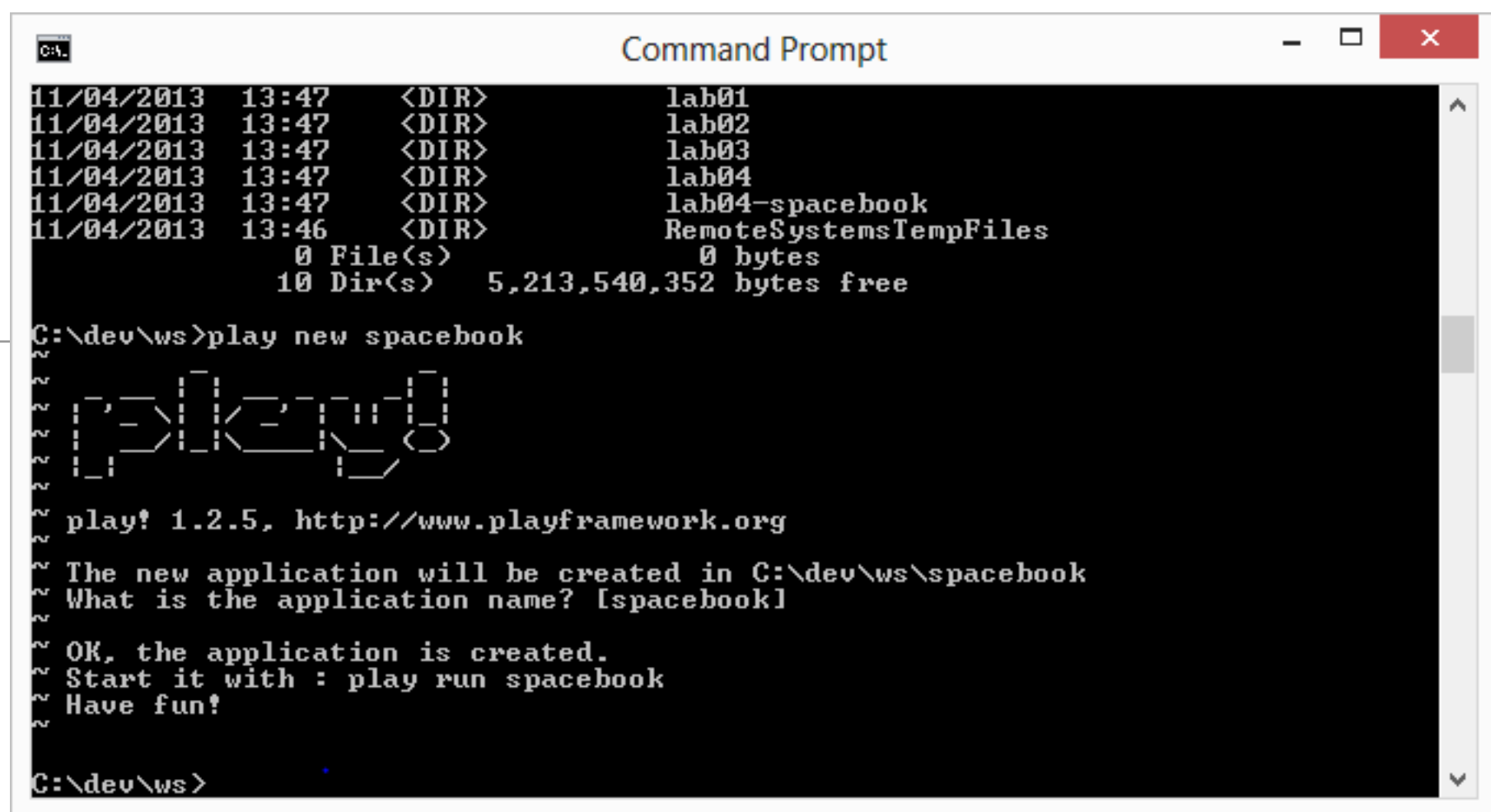
```
~
~ _ _ _ | | _ _ _ _ | |
~ | ' _ \ | / _ ' | | | |
~ | _ / | \ _ \ | \ ()
~ | _ | _ | _ /
~
~
~ play! 1.2.5, http://www.playframework.org
~
~ The new application will be created in /Users/edeleastar/Dropbox/webdev/2012/dev/projects/spacebook
~ What is the application name? [spacebook]
```

Press return when prompted for the name to accept the default (spacebook)

```
~
~ OK, the application is created.
~ Start it with : play run spacebook
~ Have fun!
~
```



# In DOS



```
C:\dev\ws>dir
11/04/2013 13:47 <DIR> lab01
11/04/2013 13:47 <DIR> lab02
11/04/2013 13:47 <DIR> lab03
11/04/2013 13:47 <DIR> lab04
11/04/2013 13:47 <DIR> lab04-spacebook
11/04/2013 13:46 <DIR> RemoteSystemsTempFiles
 0 File(s) 0 bytes
 10 Dir(s) 5,213,540,352 bytes free

C:\dev\ws>play new spacebook

 _ _ _ _ _
 / _ _ _ \
| _ _ _ _ |
| _ _ _ _ |
| _ _ _ _ |
 \ _ _ _ /
 _ _ _ _ _

play! 1.2.5, http://www.playframework.org

The new application will be created in C:\dev\ws\spacebook
What is the application name? [spacebook]

OK, the application is created.
Start it with : play run spacebook
Have fun!

C:\dev\ws>
```

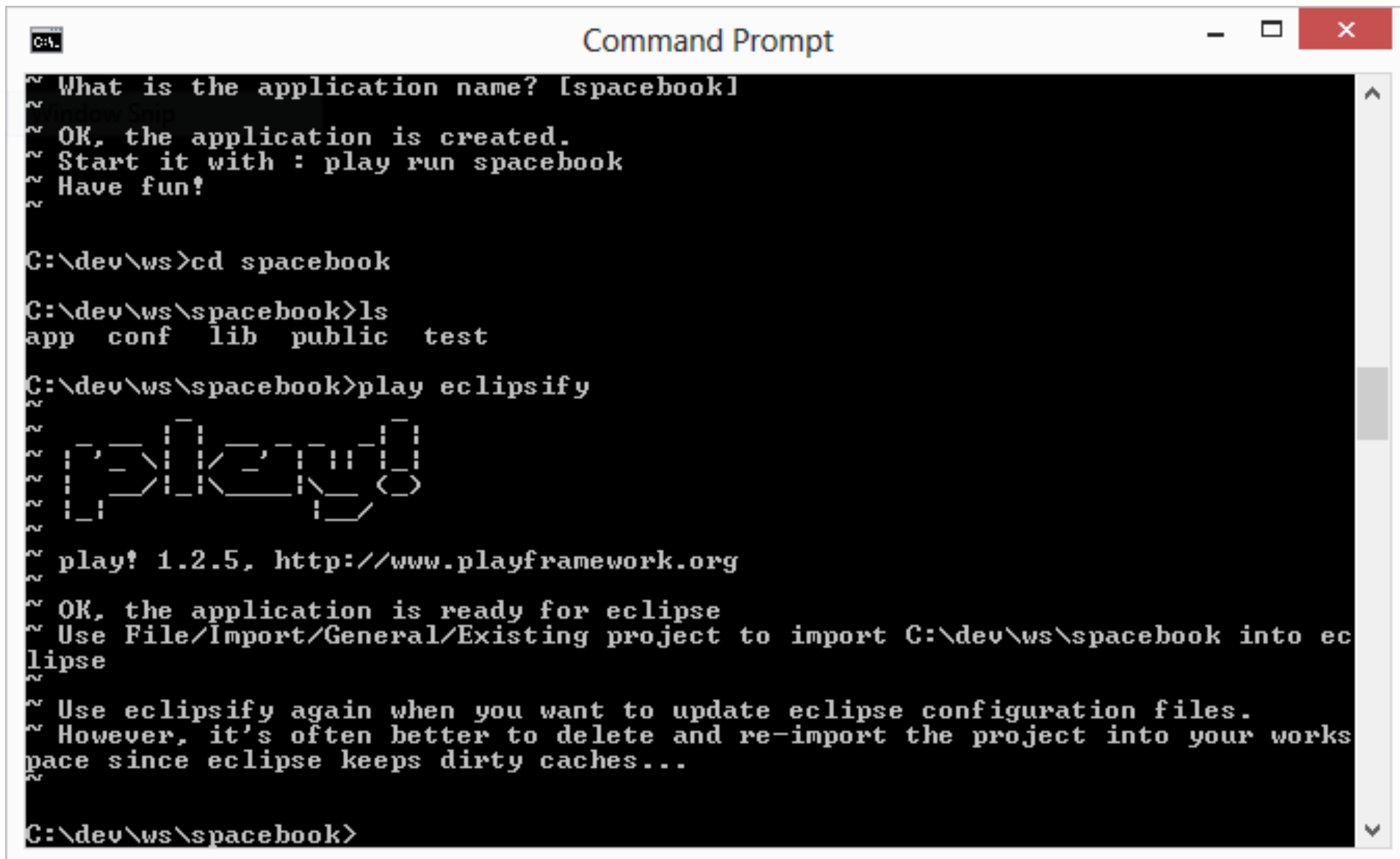
- This command creates a skeleton play application called ‘spacebook’ in the current directory (c:\dev\ws in the above example)
- Usually you will want to ‘change into’ this new directory for subsequent commands

```
c:\dev\ws>cd spacebook
```

```
c:\dev\ws\spacebook>
```

# Eclipsify

- In order to make the new project visible to Eclipse
  - “*play eclipsify*”



```
Command Prompt

What is the application name? [spacebook]
OK, the application is created.
Start it with : play run spacebook
Have fun!

C:\dev\ws>cd spacebook
C:\dev\ws\spacebook>ls
app conf lib public test
C:\dev\ws\spacebook>play eclipsify

play! 1.2.5, http://www.playframework.org

OK, the application is ready for eclipse
Use File/Import/General/Existing project to import C:\dev\ws\spacebook into ec
lipse

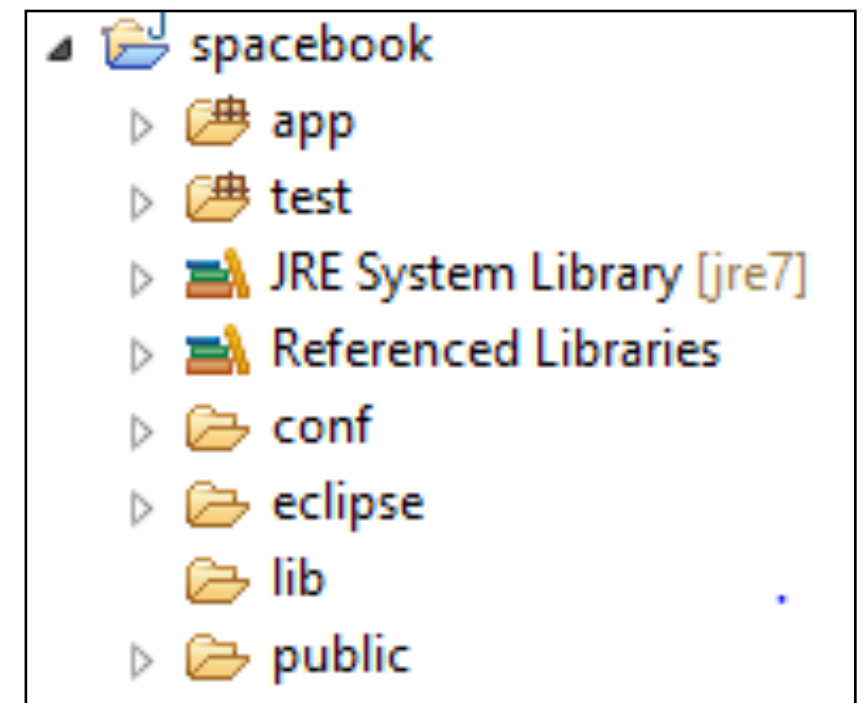
Use eclipsify again when you want to update eclipse configuration files.
However, it's often better to delete and re-import the project into your works
pace since eclipse keeps dirty caches...

C:\dev\ws\spacebook>
```

# In Eclipse

---

- If we 'import' the newly created project into eclipse, we can now develop the application in the IDE (Eclipse is and IDE).
- The project may not look like this initially. —————→
- If it doesn't, then switch to the "Java Perspective" in Eclipse, and it should resemble the above.
- To switch perspectives - in eclipse select "Window->Open Perspective->Java"



# Running the Play Application

- We have generated an “Web App” NOT at “Web Site”
- A Web App requires an ‘Application Server’ to run
- Play has one built-in, so running the server + the web app is a single command

Back in DOS, from inside the spacebook folder, type the following command:

```
play run
```

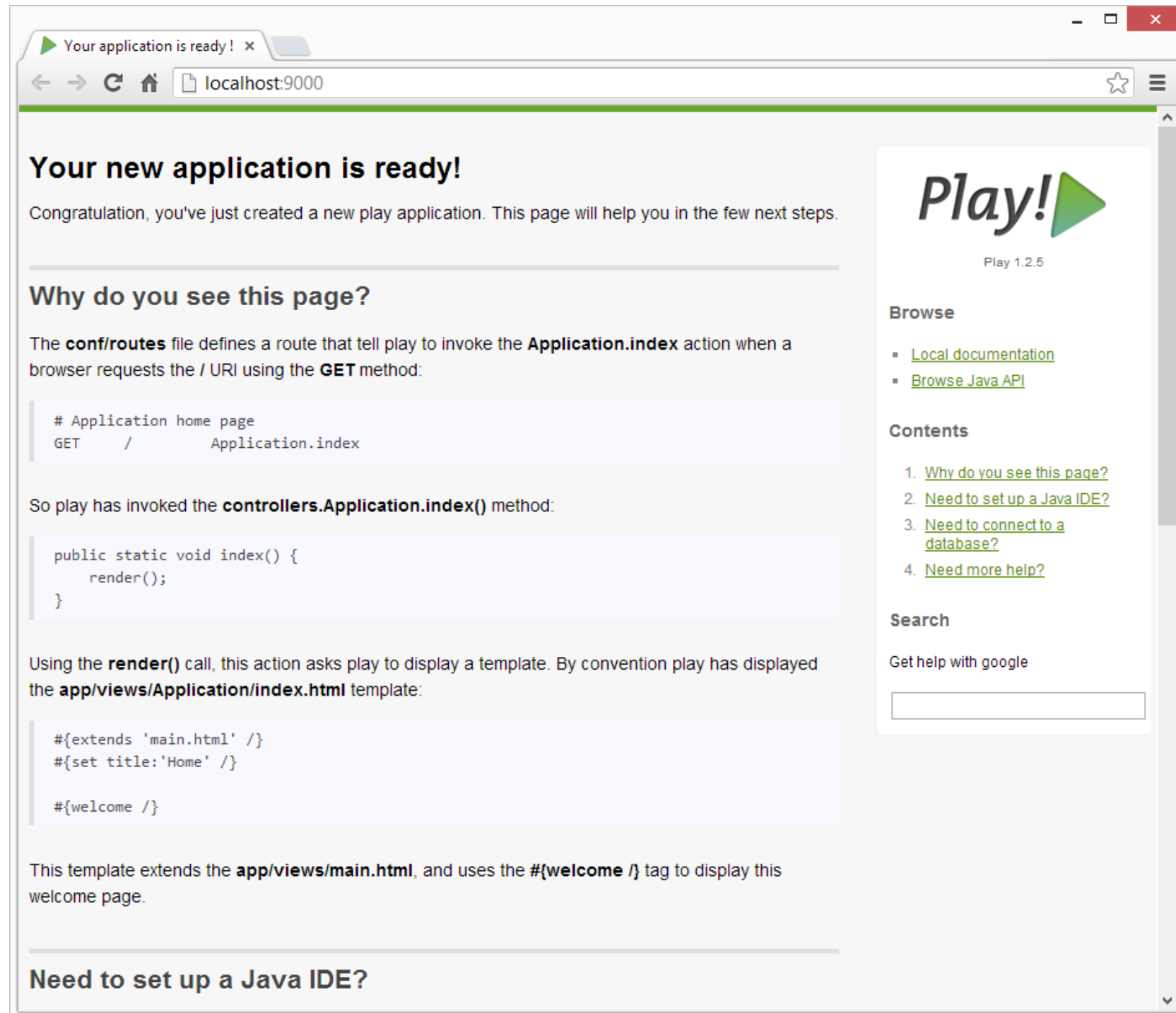
Play will respond with something like this:

```
~
~ _ _ _ | | _ _ _ | |
~ | ' _ \ / _ ' | | | |
~ | _ / | \ _ \ | \ ()
~ | _ | | _ /
~
~
~ play! 1.2.4, http://www.playframework.org
~
~ Ctrl+C to stop
~
Listening for transport dt_socket at address: 8000
16:30:33,586 INFO ~ Starting /Users/edelestar/Dropbox/webdev/2012/dev/projects/spacebook
16:30:34,646 WARN ~ You're running Play! in DEV mode
16:30:34,894 INFO ~ Listening for HTTP on port 9000 (Waiting a first request to start) ...
16:30:58,912 INFO ~ Application 'Spacebook' is now started !
```

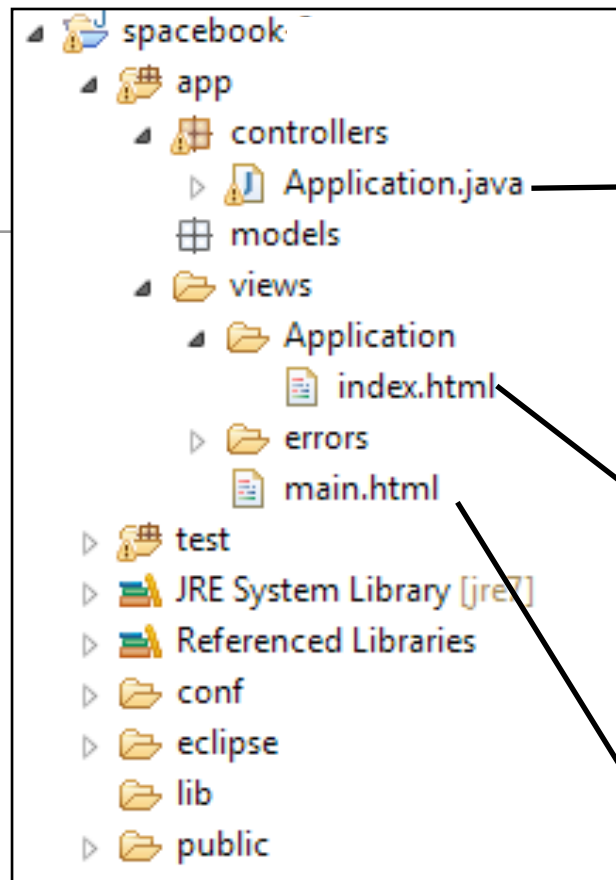
You may get a dialog from the firewall, asking for permission to run, which you should agree to.

# The Skeleton App:

- The application is now 'hosted' on our local machine (localhost)
- To use it, we browse to:  
  
**http://localhost:9000/**
- 9000 is a random 'port' number in which the app is being 'served'
- The 'default' app is documentation on play itself



# The App Source



```
package controllers;
```

```
import play.*;
import play.mvc.*;
import java.util.*;
import models.*;
```

```
public class Application extends Controller
{
 public static void index()
 {
 render();
 }
}
```

```
<!DOCTYPE html>
```

```
<html>
```

```
 <head>
```

```
 <title>#{get 'title' /}</title>
```

```
 <meta charset="${_response_encoding}">
```

```
 <link rel="stylesheet" media="screen" href="@{'/public/stylesheets/main.css'}">
```

```
 #{get 'moreStyles' /}
```

```
 <link rel="shortcut icon" type="image/png" href="@{'/public/images/favicon.png'}">
```

```
 <script src="@{'/public/javascripts/jquery-1.6.4.min.js'}" type="text/javascript" charset="${_response_encoding}"></script>
```

```
 #{get 'moreScripts' /}
```

```
 </head>
```

```
 <body>
```

```
 #{doLayout /}
```

```
 </body>
```

```
</html>
```

```
#{extends 'main.html' /}
```

```
#{set title:'Home' /}
```

```
#{welcome /}
```



# The App Source

- **Controller**

- A Java Class
- index() will be call when a 'request' for a page arrives

- **View**

- A Page Template
- Will be turned into a HTML page and send to the browser
- May contain html + also 'special' codes
- Multiple templates needed to generate a single html page

```
package controllers;

import play.*;
import play.mvc.*;
import java.util.*;
import models.*;

public class Application extends Controller
{
 public static void index()
 {
 render();
 }
}
```

```
#{extends 'main.html' /}
#{set title:'Home' /}

#{welcome /}
```

```
<!DOCTYPE html>

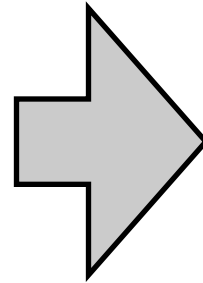
<html>
 <head>
 <title>Spacebook</title>
 <meta charset="utf-8">
 <link rel="stylesheet" media="screen" href="/public/stylesheets/main.css">
 <link rel="shortcut icon" type="image/png" href="/public/images/favicon.png">
 <script src="/public/javascripts/jquery-1.6.4.min.js" type="text/javascript" charset="utf-8"></script>
 </head>
 <body>
 <p>
 Welcome to Spacebook!
 </p>
 </body>
</html>
```

# Changing the View

---

```
#{extends 'main.html' /}
#{set title:'Home' /}

#{welcome /}
```



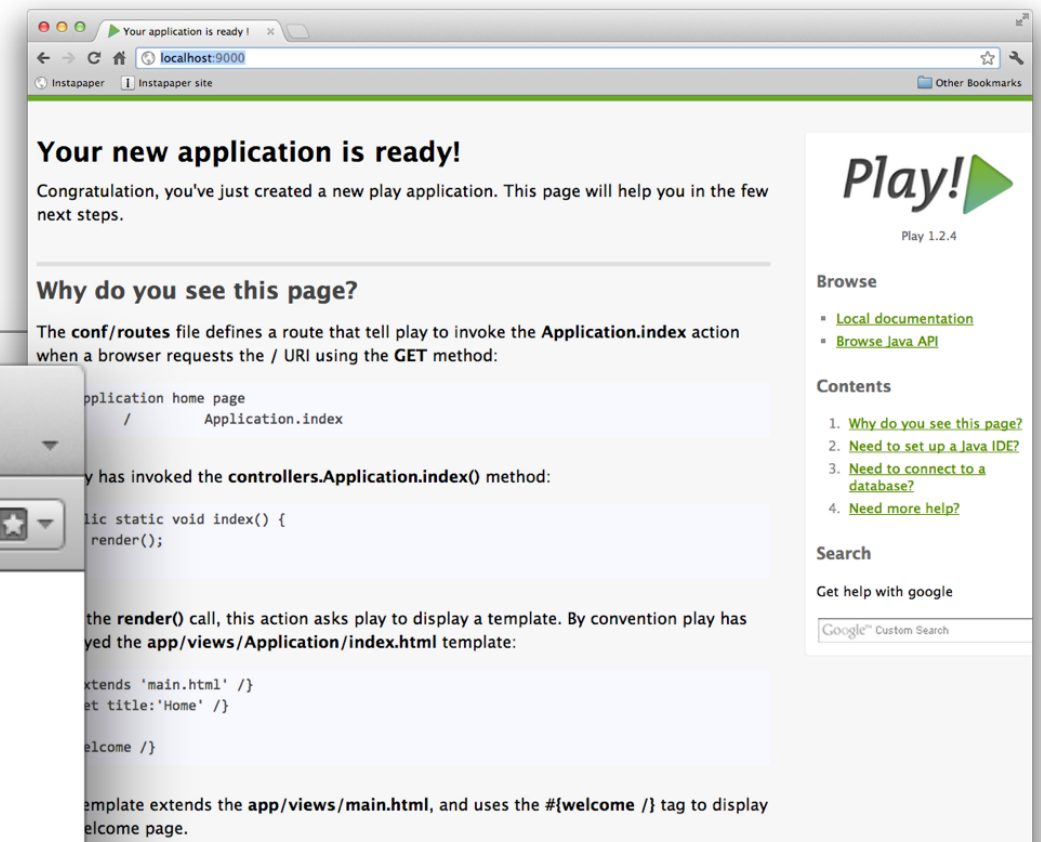
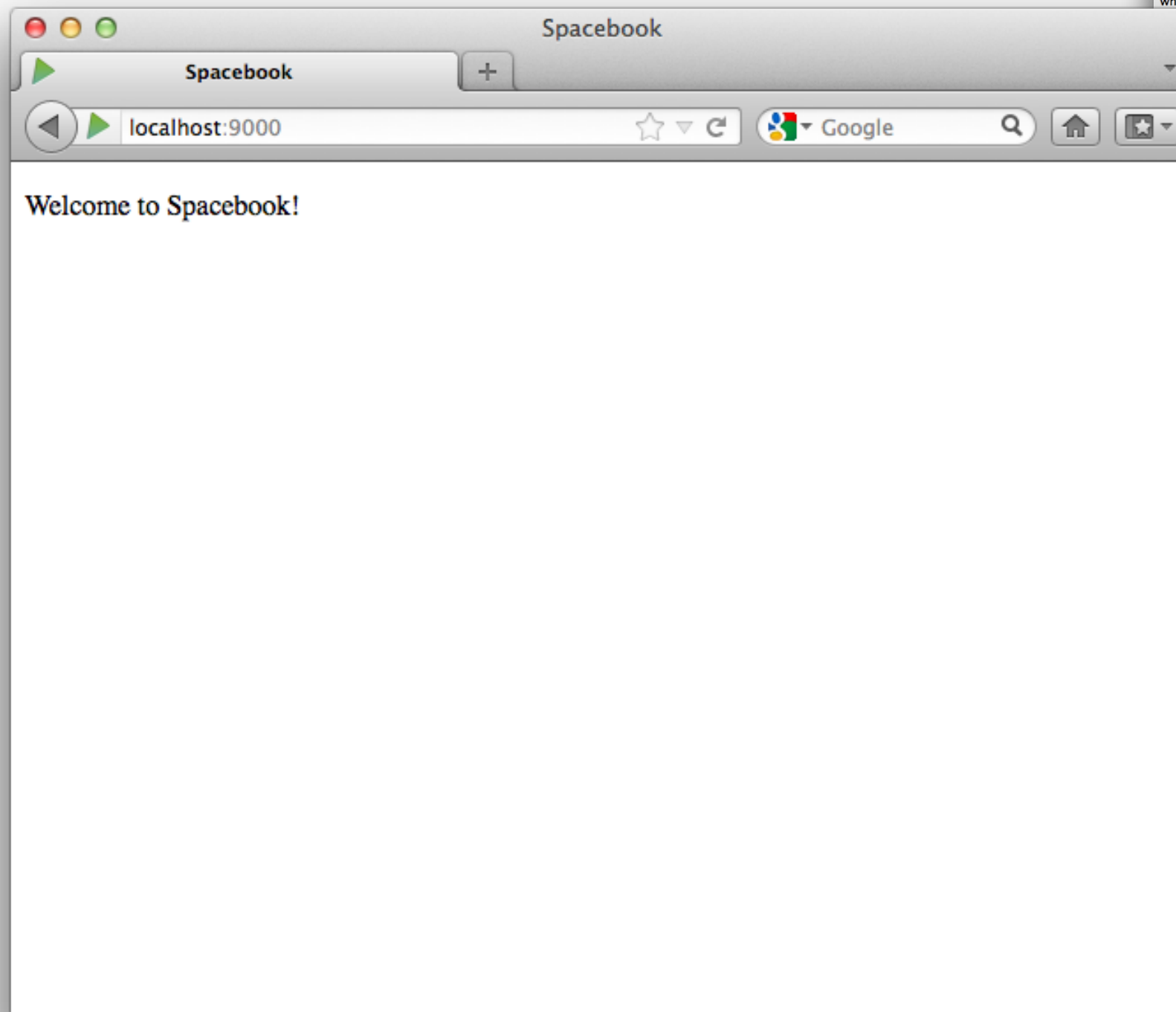
```
#{extends 'main.html' /}
#{set title:'Spacebook' /}

<p>
 Welcome to Spacebook!
</p>
```

- `#{welcome /}` - a special code to display the play documentation page
- We replace this with an simple html paragraph

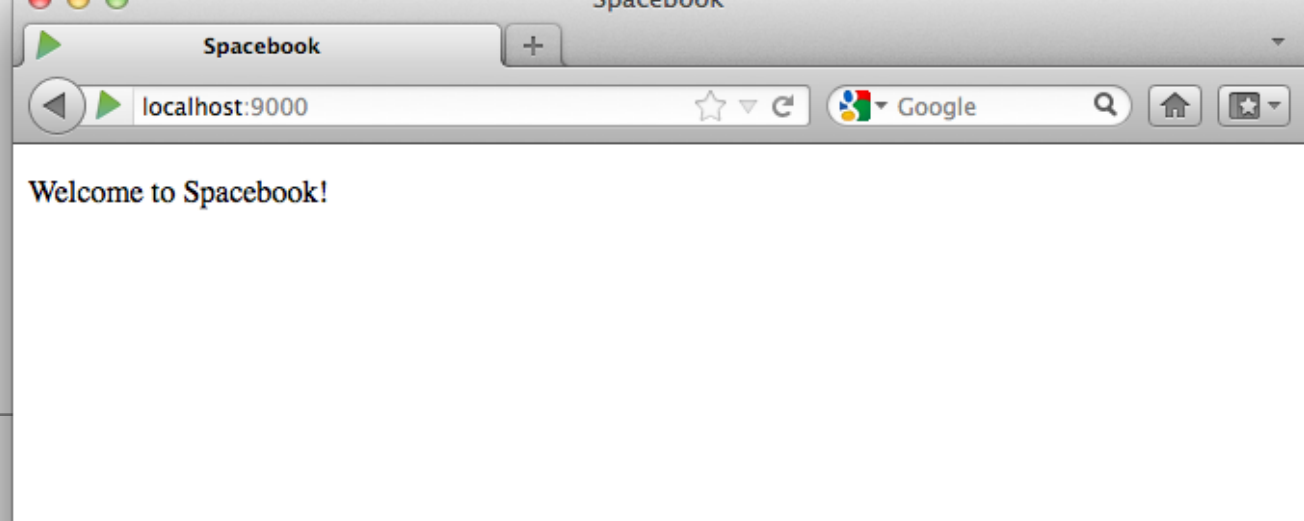


# Test



- Just save the view and refresh the browser
- The app is always 'live'
- Any changes (as long as file is saved) are immediately visible

# View/Source



```
<!DOCTYPE html>

<html>
 <head>
 <title>Spacebook</title>
 <meta charset="utf-8">
 <link rel="stylesheet" media="screen" href="/public/stylesheets/main.css">
 <link rel="shortcut icon" type="image/png" href="/public/images/favicon.png">
 <script src="/public/javascripts/jquery-1.6.4.min.js" type="text/javascript" charset="utf-8"></script>
 </head>
 <body>
 <p>
 Welcome to Spacebook!
 </p>
 </body>
</html>
```

- Browser **never** sees java or page templates with their 'special' codes
  - ->> just pure html always

# How is the page built?

- From two 'templates'

## views/main.html

---

```
<!DOCTYPE html>

<html>
 <head>
 <title>#{get 'title' /}</title>
 <meta charset="#{_response_encoding}">
 <link rel="stylesheet" media="screen" href="@{'/public/stylesheets/main.css'}">
 #{get 'moreStyles' /}
 <link rel="shortcut icon" type="image/png" href="@{'/public/images/favicon.png'}">
 <script src="@{'/public/javascripts/jquery-1.6.4.min.js'}" type="text/javascript" charset="#{_response_encoding}"></script>
 #{get 'moreScripts' /}
 </head>
 <body>
 #{doLayout /}
 </body>
</html>
```

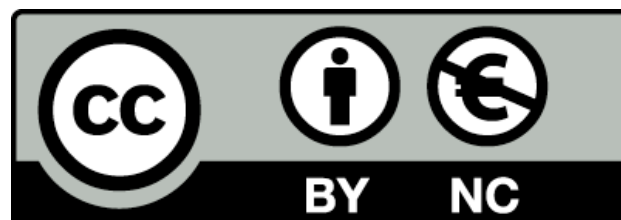
and

## views/Application/index.html

---

```
#{extends 'main.html' /}
#{set title:'Spacebook' /}

<p>
 Welcome to Spacebook!
</p>
```



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