Your First GWT App

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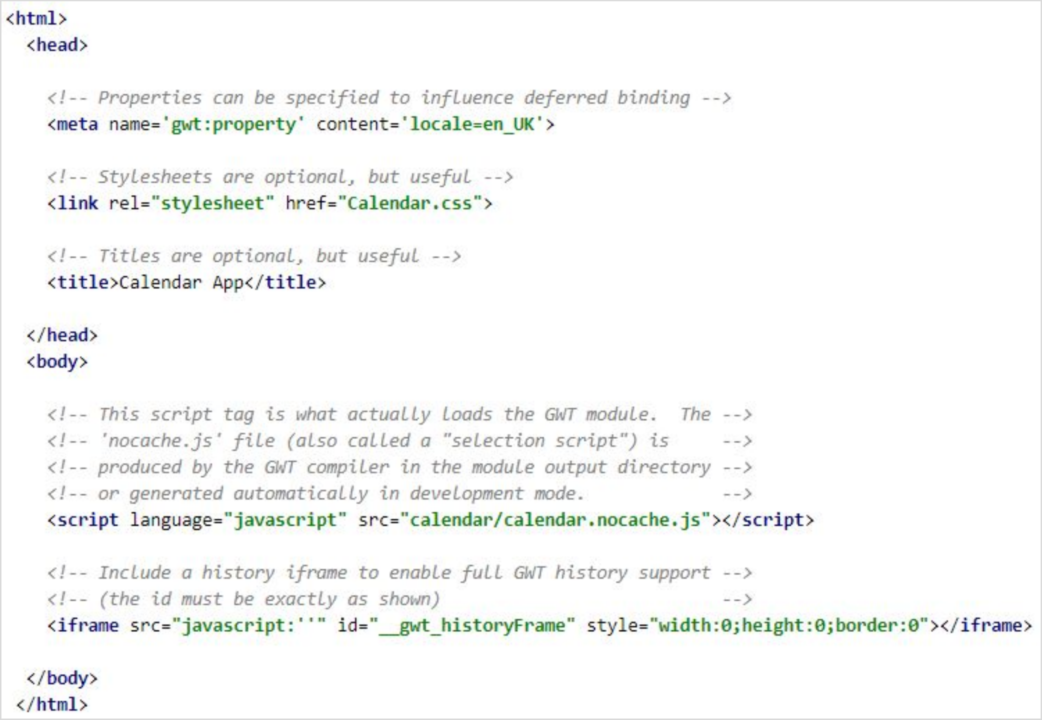
Organizing GWT App

- HTML Host Pages
- Standard Directory and Package Layout
- GWT Modules: Units of Configuration
- GWT Boot
- Task

HTML Host Pages

- Load the JS file to web browser using `<script>` tag

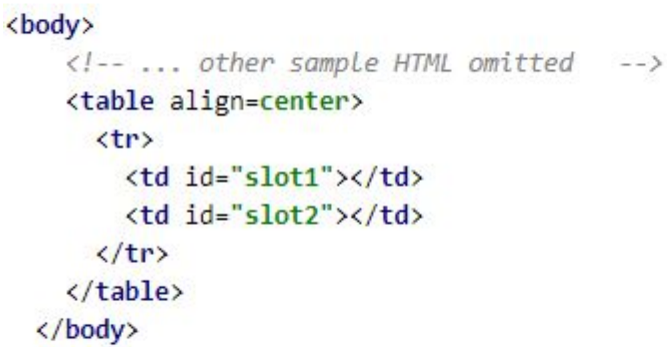


```
<html>
  <head>

    <!-- Properties can be specified to influence deferred binding -->
    <meta name='gwt:property' content='locale=en_UK'>

    <!-- Stylesheets are optional, but useful -->
    <link rel="stylesheet" href="Calendar.css">

    <!-- Titles are optional, but useful -->
    <title>Calendar App</title>

  </head>
  <body>

    <!-- This script tag is what actually loads the GWT module.  The -->
    <!-- 'nocache.js' file (also called a "selection script") is     -->
    <!-- produced by the GWT compiler in the module output directory -->
    <!-- or generated automatically in development mode.             -->
    <script language="javascript" src="calendar/calendar.nocache.js"></script>

    <!-- Include a history iframe to enable full GWT history support -->
    <!-- (the id must be exactly as shown)                           -->
    <iframe src="javascript:''" id="__gwt_historyFrame" style="width:0;height:0;border:0"></iframe>

  </body>
 </html>
```

HTML Host Pages

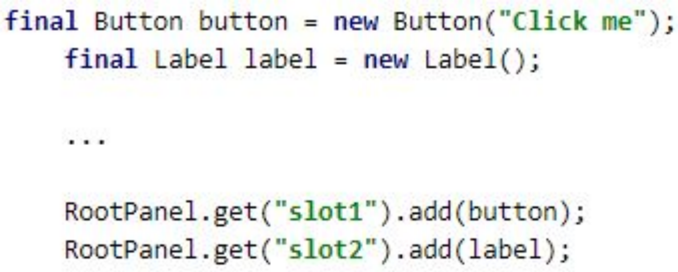
- Add GWT functionality as *a part of an existing page*

HTML file



```
<body>
    <!-- ... other sample HTML omitted   -->
    <table align=center>
      <tr>
        <td id="slot1"></td>
        <td id="slot2"></td>
      </tr>
    </table>
  </body>
```

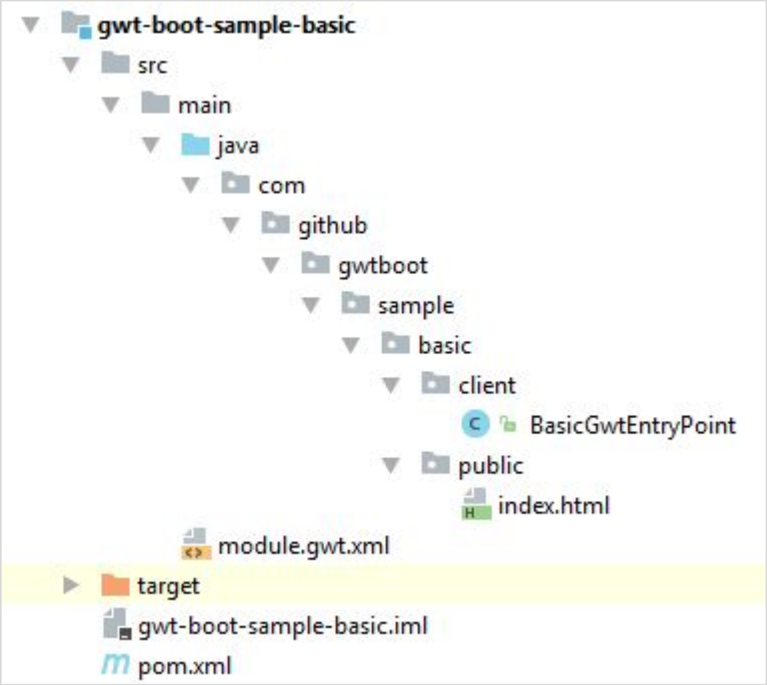
Java GWT file



```
final Button button = new Button("Click me");
    final Label label = new Label();

    ...

    RootPanel.get("slot1").add(button);
    RootPanel.get("slot2").add(label);
```

Standard Directory and Package Layout

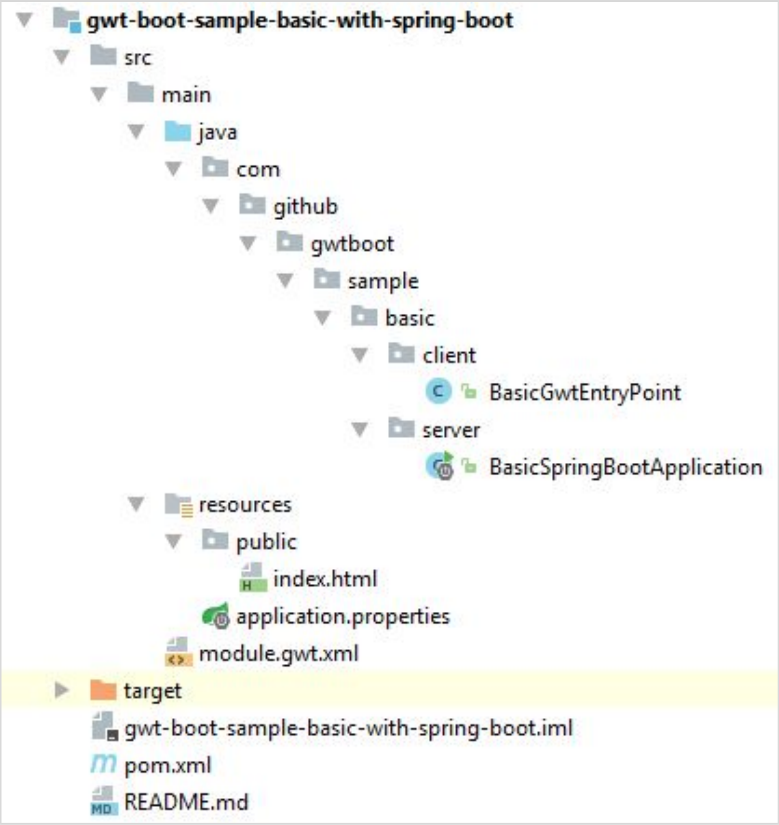
- Based on GWT Maven Plugin
- **Pure GWT project**



```
▼ gwt-boot-sample-basic
  ▼ src
    ▼ main
      ▼ java
        ▼ com
          ▼ github
            ▼ gwtboot
              ▼ sample
                ▼ basic
                  ▼ client
                      BasicGwtEntryPoint
                  ▼ public
                      index.html
        module.gwt.xml
  ▶ target
    gwt-boot-sample-basic.iml
    pom.xml
```

Standard Directory and Package Layout

- Based on GWT Maven Plugin
- **With Spring Boot**



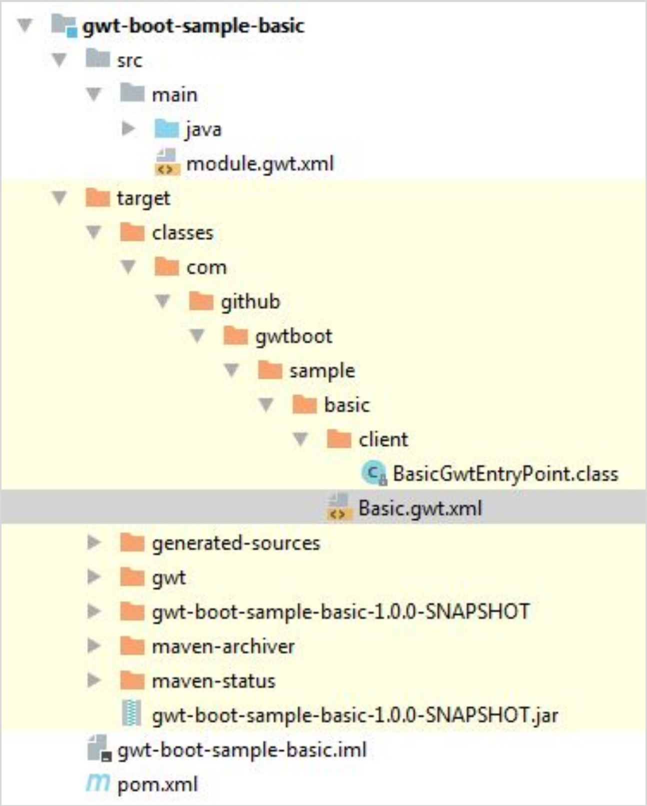
```
gwt-boot-sample-basic-with-spring-boot
  src
    main
      java
        com
          github
            gwtboot
              sample
                basic
                  client
                    BasicGwtEntryPoint
                  server
                    BasicSpringBootApplication
      resources
        public
          index.html
        application.properties
      module.gwt.xml
  target
  gwt-boot-sample-basic-with-spring-boot.iml
  pom.xml
  README.md
```

GWT Modules: Units of Configuration

- Inherited modules
- An entry point application class name; these are optional, although any module referred to in HTML must have at least one entry-point class specified
- Source path entries
- Public path entries
- Deferred binding rules, including property providers and class generators

GWT Modules: Units of Configuration

- GWT Maven Plugin:
  - Generate the “real” GWT module (gwt.xml file)
    - Example: From **`module.gwt.xml`** to **`Basic.gwt.xml`**
  - … or just use directly the real GWT module: **`Basic.gwt.xml`**



```
▼ gwt-boot-sample-basic
    ▼ src
        ▼ main
            ▶ java
              module.gwt.xml
    ▼ target
        ▼ classes
            ▼ com
                ▼ github
                    ▼ gwtboot
                        ▼ sample
                            ▼ basic
                                ▼ client
                                      BasicGwtEntryPoint.class
                                  Basic.gwt.xml
        ▶ generated-sources
        ▶ gwt
        ▶ gwt-boot-sample-basic-1.0.0-SNAPSHOT
        ▶ maven-archiver
        ▶ maven-status
          gwt-boot-sample-basic-1.0.0-SNAPSHOT.jar
      gwt-boot-sample-basic.iml
      pom.xml
```

GWT Modules: Units of Configuration

- Entry Point Classes
  - Starting point for JS at **`EntryPoint.onModuleLoad()`**
- Source Path
  - Subpackage contains translatable Java code (to JS)
  - Underneath **`*.gwt.xml`** file
  - Default package: **`client`**
- Public Path
  - The public path is the place in your project where static resources referenced by your GWT module, such as CSS or images
  - Underneath **`*.gwt.xml`** file
  - Default package: **`public`**
  - Code: **`GWT.getModuleBaseForStaticFiles() + "resourceName.png"`**

GWT Modules: Units of Configuration

- XML file: `~com/github/gwtboot/sample/basic/Basic.gwt.xml`
- Module name: `com.github.gwtboot.sample.basic.Basic`
- Module renaming: `<module rename-to=”basic”>`
- Module inheritance: `<inherits name='com.google.gwt.gears.Gears' />`
- Super-Source: `<super-source path="jre" />`
    - Example result: `com/github/gwtboot/sample/basic/jre/java/util/UUID.java` will be visible as `java/util/UUID.java`
- Includes, Deferred Binding (“late binding”) und Conditions
- Complete reference: http://www.gwtproject.org/doc/latest/DevGuideOrganizingProjects.html#DevGuideModuleXml

Your First GWT App

- GWT Boot (same idea as Spring Boot)

GWT Boot Starter dependencies is basically a simple Starter dependencies collection for GWT just like Spring Boot Starter dependencies. The idea is taken from Spring Boot Starters

GWT Boot Starters are a set of convenient dependency descriptors that you can include in your application. You get a one-stop-shop for all the GWT and related technology that you need without having to hunt through sample code and copy paste loads of dependency descriptors. For example, if you want to get started using GWT and Domino UI for your Material Design and Elemental2 just include the spring-boot-starter-ui-domino dependency in your project, and you are good to go.

Step by Step

https://github.com/gwtboot/gwt-boot-samples

Task

- Create a Hello World GWT app!
  - Create a Maven project in your IDE (Eclipse or IntelliJ)
  - Use GWT Boot Starter for easy bootstrapping
  - Example: https://github.com/gwtboot/gwt-boot-samples

References

- http://www.gwtproject.org/doc/latest/DevGuideOrganizingProjects.html