Mobile Analytics Kit Tutorial: HTML5

SAP Mobile Platform 2.3

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Introduction

Mobile Analytics Kit (MAKit) allows users to graphically view data in different types of charts. The *MAKit Tutorial: HTML5* is to help developers quickly understand MAKit concepts and expedite application development. MAKit uses a metadata configuration file to define chart types and data source files. Use it with the SAP® Mobile Platform Hybrid Web Container.

MAKit HTML5 runs on:

- Google Chrome 15 or later
- Android phones and tablets running Android 3.1, 4.03, or 4.1 with Chrome
- iPhone and iPad devices running iOS 5.x and 6.0 with Safari

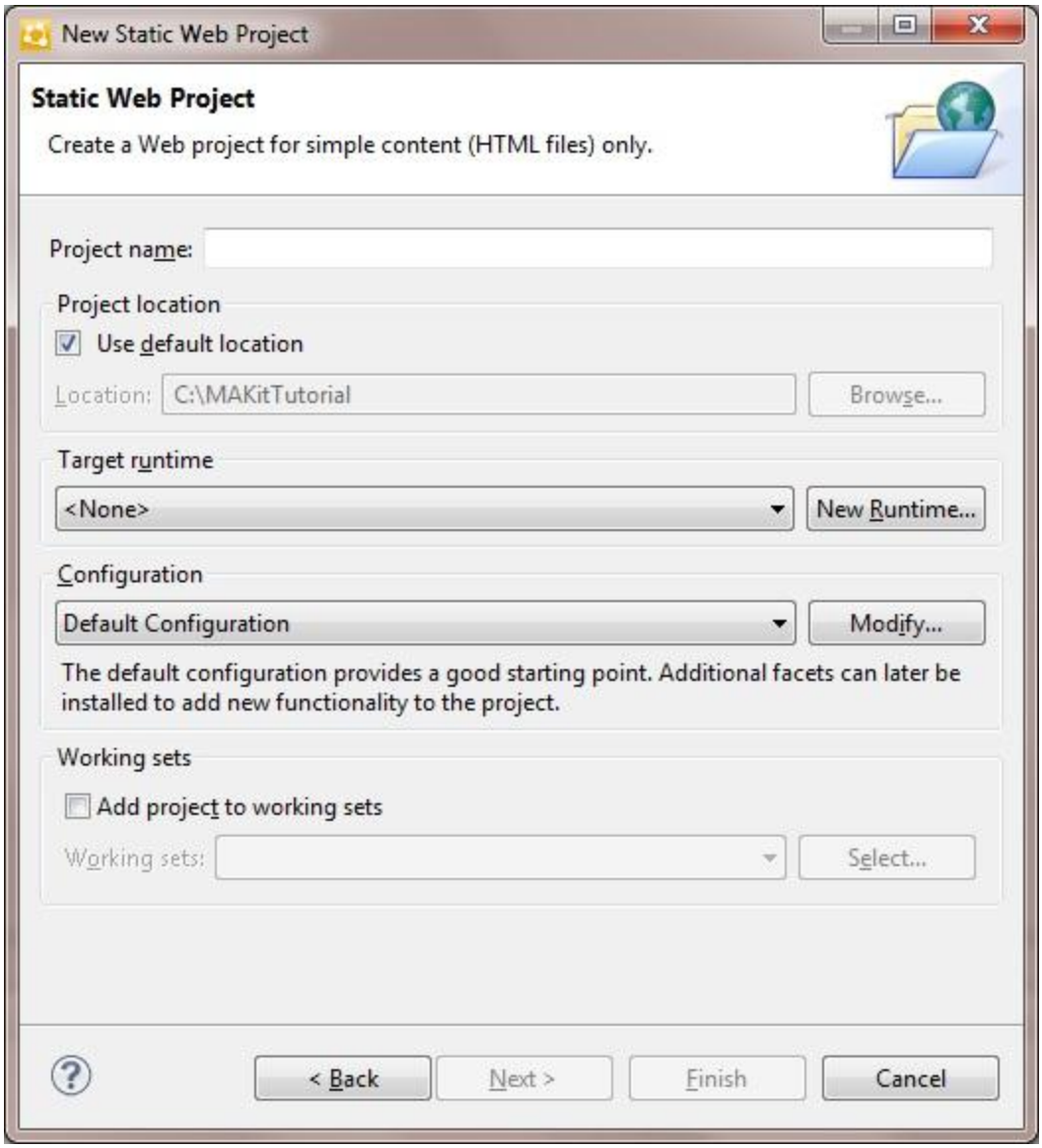
Prerequisites

- Windows machine 32-bit /64-bit
- Install SAP Mobile WorkSpace (SMP) 2.3; including the Mobile SDK
- On the C:\ drive, create a folder named `MAKit_HTML5`

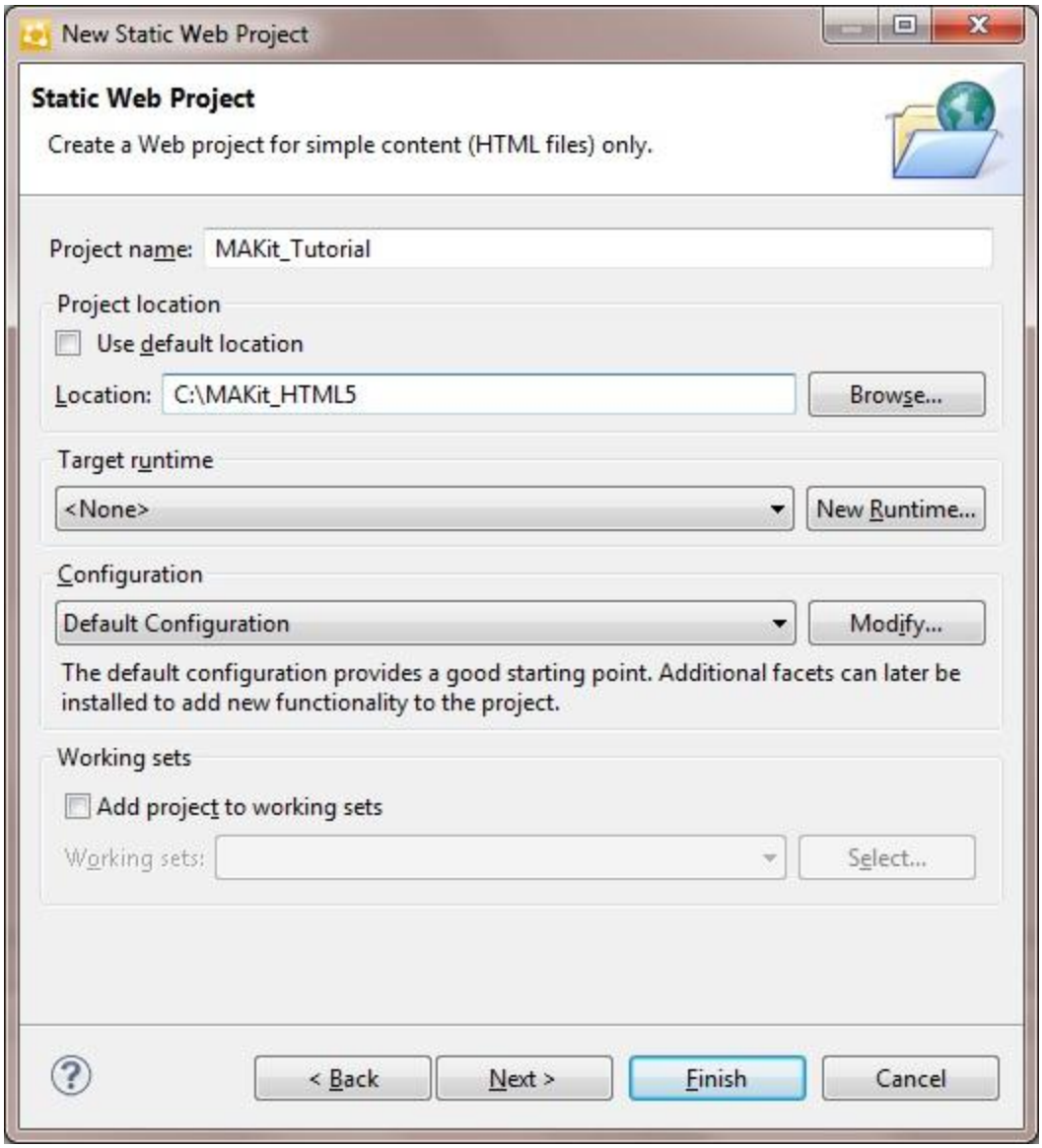
Using the MAKit HTML5 Library in SAP Mobile WorkSpace

Creating a Static Web Project

1. Start the SAP Mobile WorkSpace IDE.
2. Select **File** > **New** > **Project.**
3. In the New Project dialog, select **Web** > **Static Web Project**, then click **Next**.

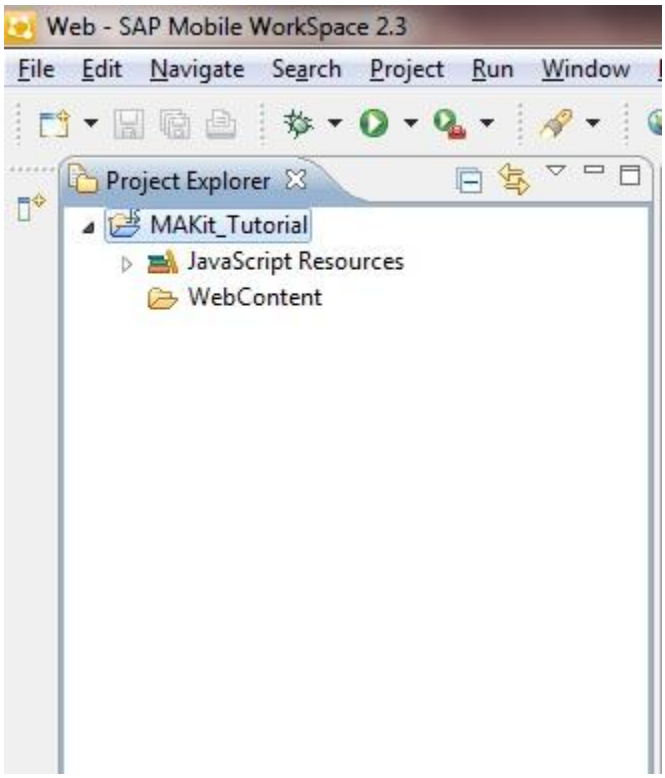


4. In the New Static Web Project dialog, enter `MAKit_Tutorial` as the project name and `C:\MAKit_HTML5` as the project location. Click **Finish.**

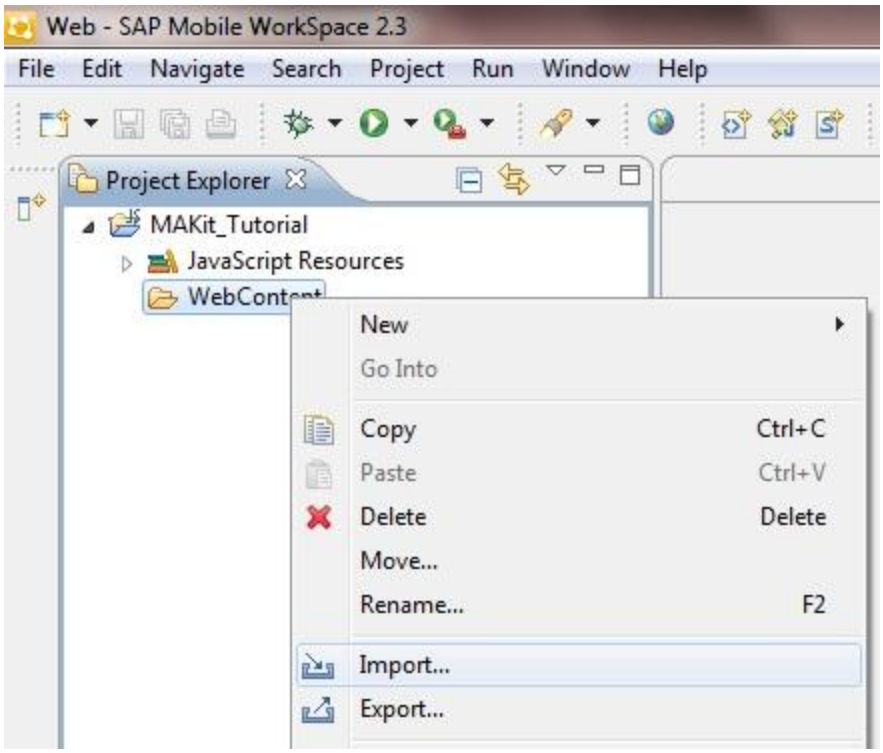

New Static Web Project
Static Web Project
Create a Web project for simple content (HTML files) only.
Project name: MAKit_Tutorial
Project location
Use default location
Location: C:\MAKit_HTML5
Browse...
Target runtime
<None>
New Runtime...
Configuration
Default Configuration
Modify...
The default configuration provides a good starting point. Additional facets can later be installed to add new functionality to the project.
Working sets
Add project to working sets
Working sets:
Select...
< Back
Next >
Finish
Cancel

Adding the MAKit HTML5 Library to the Project

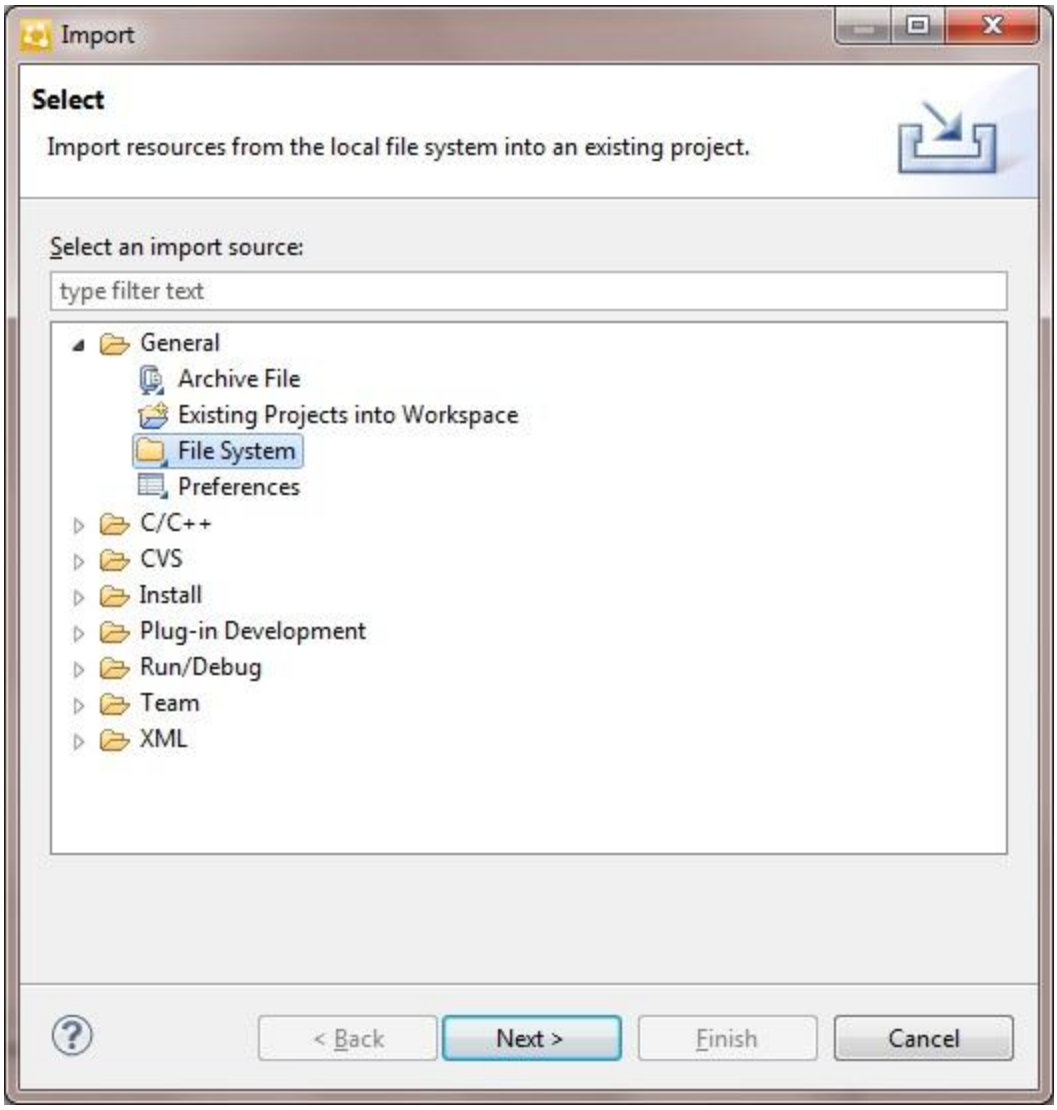
1. In SAP Mobile WorkSpace, open the `MAKit_Tutorial` project.
2. In the Project Explorer, expand the project folder `MAKit_Tutorial`.



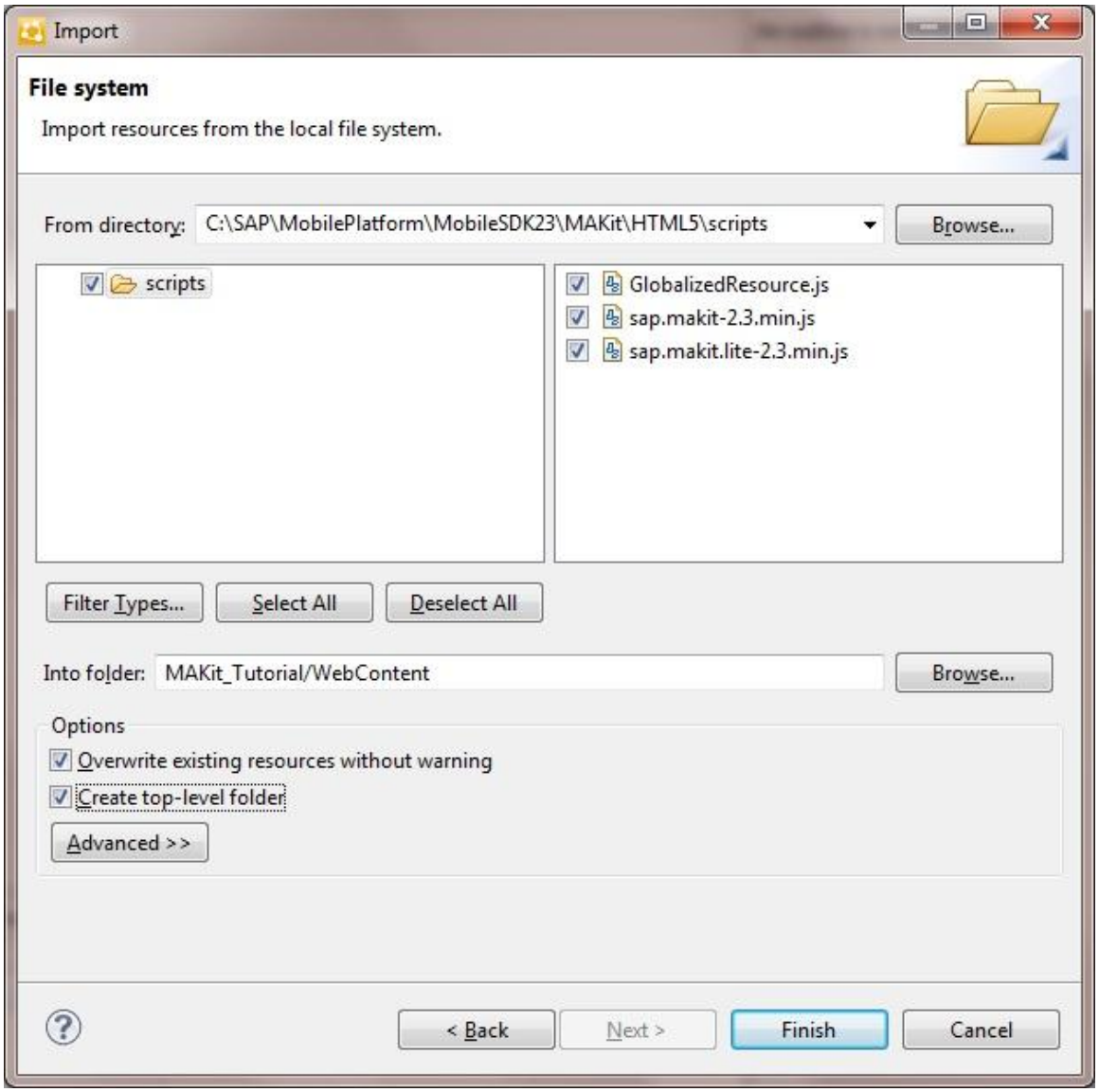
3. Right-click the **WebContent** folder under the `MAKit_Tutorial` project and select **Import**.



4. In the **Import** dialog, select **File System** as the import source under the **General** folder, and click **Next**.



5. In the File System dialog, for the "From directory," browse to `%SAP_Mobile_INSTALLLED%\MobilePlatform\MobileSDK23\MAKit\HTML5\scripts`.



6. Select the check box next to the `scripts` folder.
7. Select **Overwrite existing resources without warning** and **Create top-level folder**, then click **Finish**.

Adding MAKit HTML5 CSS Files to the Project

1. In the Project Explorer, expand the `MAKit_Tutorial` folder.
2. Right-click the **WebContent** folder and select **Import.**
3. Select **File System** as import source, then click **Next**.
4. In the File System dialog, for the "From directory," browse to `%SAP_Mobile_INSTALLLED%\MobilePlatform\MobileSDK23\MAKit\HTML5\css`.
5. Select the check box next to the `css` folder.
6. Select **Overwrite existing resources without warning** and **Create top-level folder**, then click **Finish**.
7. You must import one more CSS file. In the Project Explorer, expand the `MAKit_Tutorial` folder again, then expand the **WebContent** folder.
8. Right-click the **css** folder and select **Import.**
9. Select **File System** as the import source and click **Next**.
10. In the File System dialog, select `toolbar.css` and `tollbar.png` from `%SAP_Mobile_INSTALLLED%\MobilePlatform\MobileSDK23\MAKit\HTML5\demo\css`.
11. Unselect **Create top-level folder**, then click **Finish**.

Adding MAKit HTML5 PNG Files to the Project

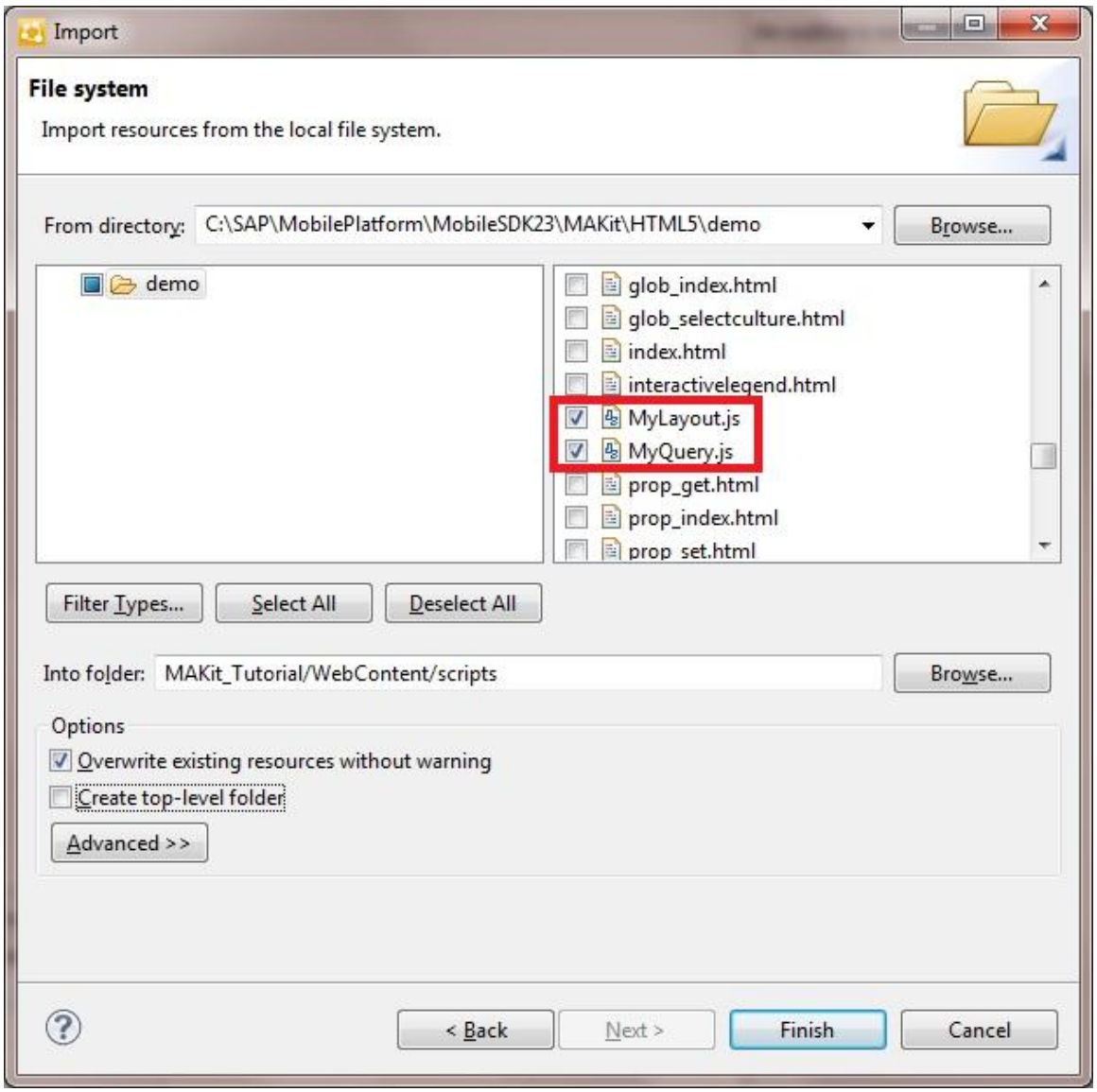
1. In the Project Explorer, expand the `MAKit_Tutorial` folder.
2. Right-click the **WebContent** folder and select **Import.**
3. Select **File System** as the import source, then click **Next**.
4. In the File System dialog, for the "From directory," browse to `%SAP_Mobile_INSTALLLED%\MobilePlatform\MobileSDK23\MAKit\HTML5\images`.
5. Select the check box next to the `images` folder.
6. Select **Overwrite existing resources without warning** and **Create top-level folder**, then click **Finish**.

Adding Layout and Query File to the Project

1. In the Project Explorer, expand the `MAKit_Tutorial` folder, then expand the **WebContent** folder.
2. Right-click the **Scripts** subfolder (under `WebContent`) and select **Import.**
3. In the Import dialog, select **File System** as the import source and click **Next**.

4. In the File System dialog, select **`MyLayout.js`** and **`MyQuery.js`** from `%SAP_Mobile_INSTALLLED%\MobilePlatform\MobileSDK23\MAKit\HTML5\demo`.
5. Unselect **Create top-level folder**, then click **Finish**.
6. Open the imported **MyLayout.js** file, modify the following script to point the `image` folder.

```
$MA.setImagesFolder("../images/");
            change to
$MA.setImagesFolder("./images/");
```



Creating the XML Metadata File

Chart configuration, which includes items such as chart type, query, category, series, and value axis information, resides in an XML metadata file, within the *<Chart>....</Chart>* tag.

1. In the Project Explorer, expand the `MAKit_Tutorial` folder.
2. Right-click the **WebContent** subfolder under `MAKit_Tutorial` and select **New** > **Other.**
3. Select **XML File** under the `XML` folder and click **Next**.
4. Enter `MAFV_Bar.xml`as as the file name and click **Finish.**
5. Add the following content to the file, then click **Save.**

```
<Chart Name="chart_1" ChartType="column" Query="productRevenueByYear"
Title="Revenue 2010">

    <Category Column="year"/>
    <Values>
        <Value Expression="revenue" Format="currency"/>
   </Values>

</Chart>
```

Creating an MAChart View

In this section, we are going to demonstrate how to create MAChart using APIs. MAChart is metadata-based; therefore, you must prepare a metadata file for configuration. You can find the details about MAChart metadata in the next section. The data used in MAChart must be in a CSV format.

1. In the SAP Mobile WorkSpace IDE, open the `MAKit_Tutorial` project.
2. In the Project Explorer, expand the `MAKit_Tutorial` folder.
3. Right-click the **WebContent** folder under `MAKit_Tutorial` and select **New** > **HTML File.**
4. In the New HTML File wizard, enter `main.html` as the file name and click **Next.**
5. In the Select HTML Template wizard**,** select **New HTML File (5)** and click **Finish.**
6. Open the `main.html` file and add these meta tags to the header tag:

```
<meta name="viewport" content="initial-scale=1;maximum-scale=1;user-scalable=0;
width=device-width;" />
<meta name="apple-mobile-web-app-capable" content="yes"  />
```

7. Add these css reference links to the header tag:

```
<link rel="stylesheet" href="css/toolbar.css" type="text/css" />
<link rel="stylesheet" href="css/default.css" type="text/css" class="ui-theme" />
```

8. Add these MAKit JavaScript (*js) reference links to the header tag:

```
<script src="scripts/sap.makit-2.3.min.js"></script>
<script src="scripts/MyQuery.js"></script>
<script src="scripts/MyLayout.js"></script>
```

9. Create these two DIV elements to define the chart and title to the body tag:

```
<div class="toolbar" id="toolbar">
    <h1 id="title"></h1>
</div>
<div id="contents">
    <div id="chart 1" style="float:left;"></div>
</div>
```

10. Adding the chart variable to the DIV element indicates the corresponding chart control. Write JavaScript to assign the DIV element to the chart control and load the XML file. Add this script to the body tag:

```
<script type="text/javascript">

   window.onload = function () {
        arrange(1, 1);
        var chart = new $MA.Chart("chart_1", true);
        chart.bind("titlechanged", onTitleChanged);
        chart.load("MAFV_Bar.xml");
}


   function onTitleChanged(title) {
        var elem = document.getElementById("title");
        elem.innerHTML = title;
}

     function onOrientationChanged() {
        arrange(1,1,true);
}


</script>
```

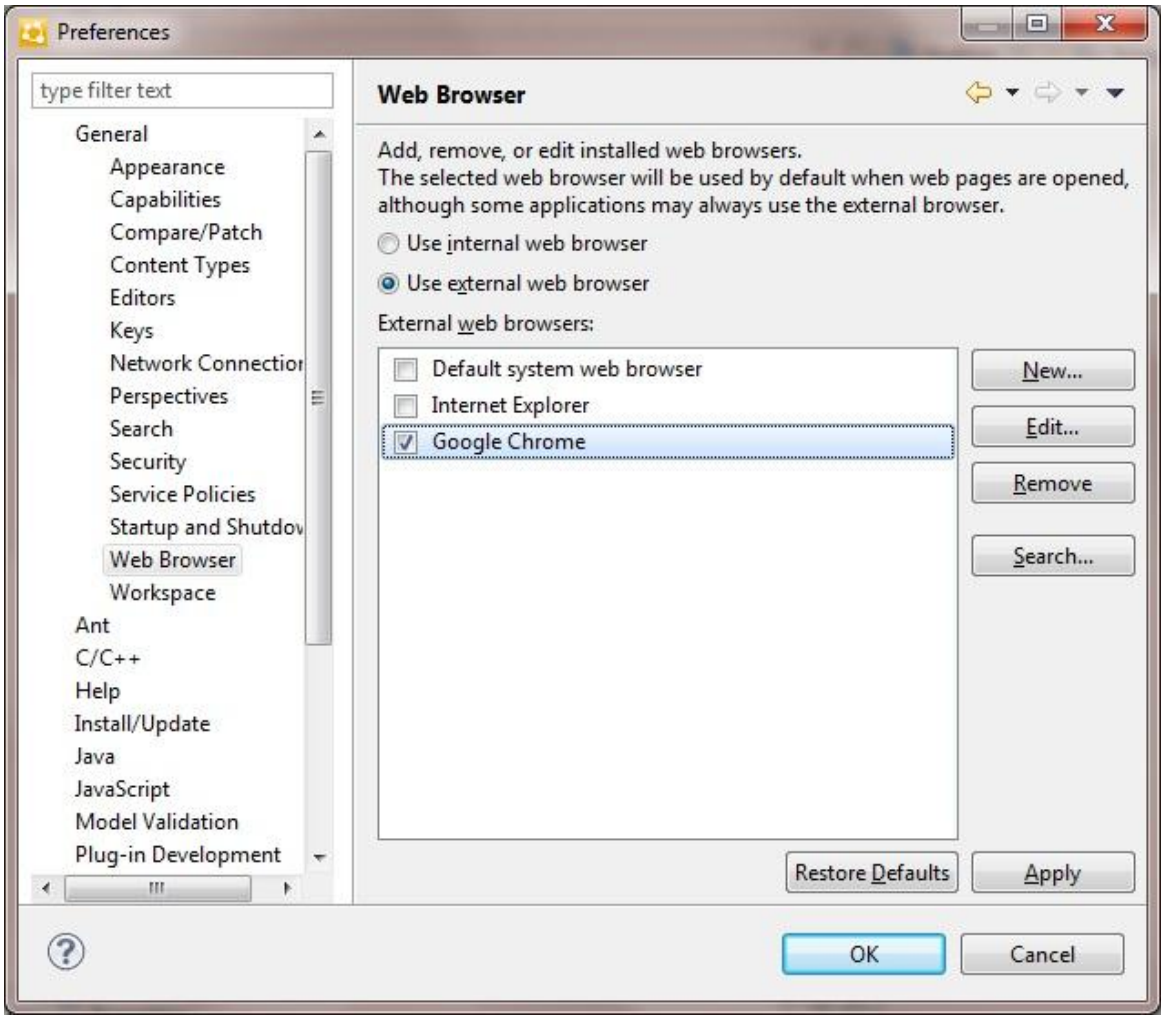
11. **Save** the file.

Running the MAKit HTML5 Project

MAKit HTML5 can run on an Eclipse Web browser, or on several browsers that are external to Eclipse, including Internet Explorer 9.0, Google Chrome 9.0, FireFox 4.0, Safari 5.0, and iPad. Users can change from the Eclipse Web browser to one of these external browsers

Changing to an External Web Browser

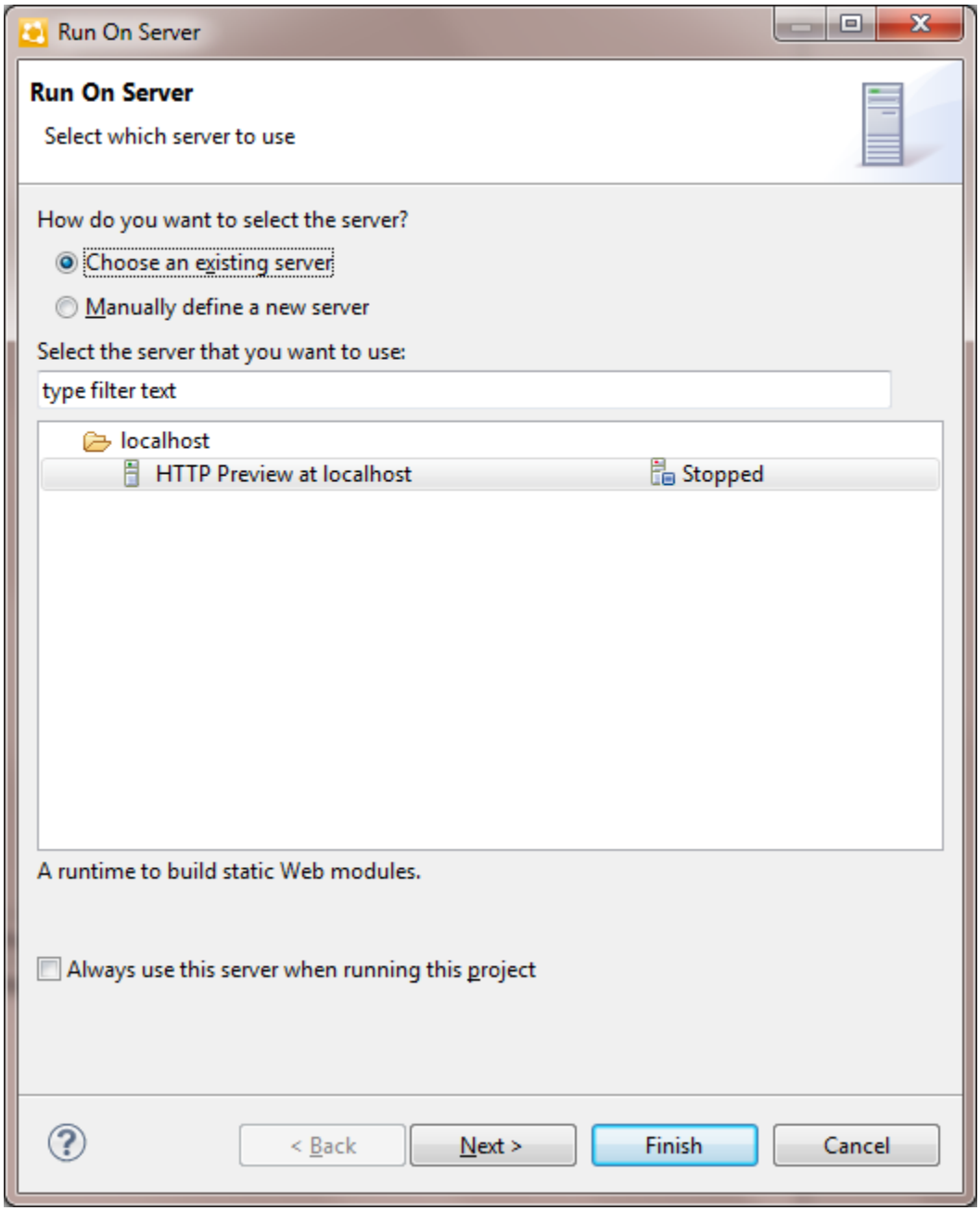
1. From the Eclipse main menu, select **Window > Preferences**.
2. Select **General > Web Browser**.
3. Click **New.**
4. Enter the name and location of the executable for the browser to which you are changing. Click **OK**.



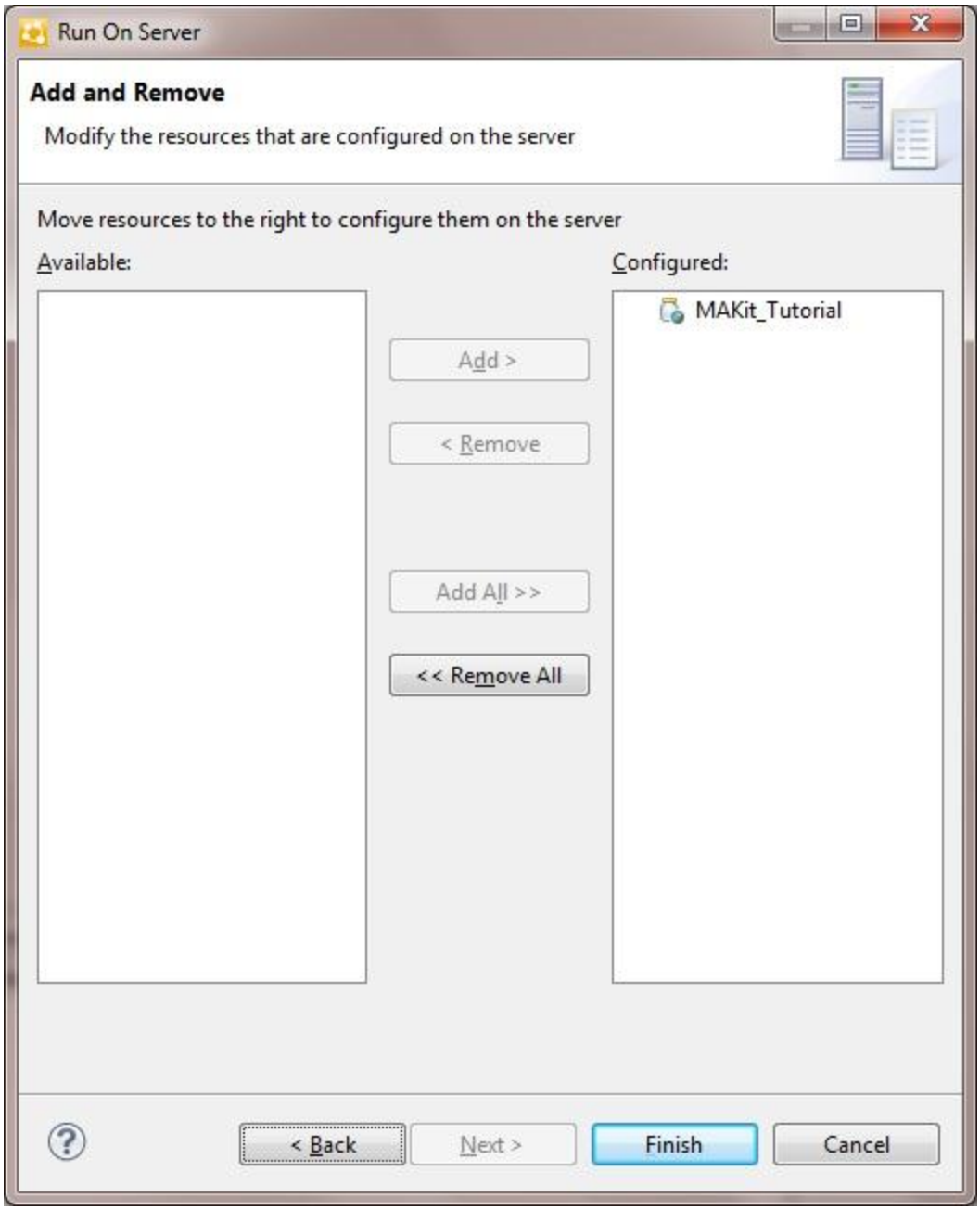
5. From the list of external Web browsers, select the one you just added. Click **Apply**.

Running the MAKit Project

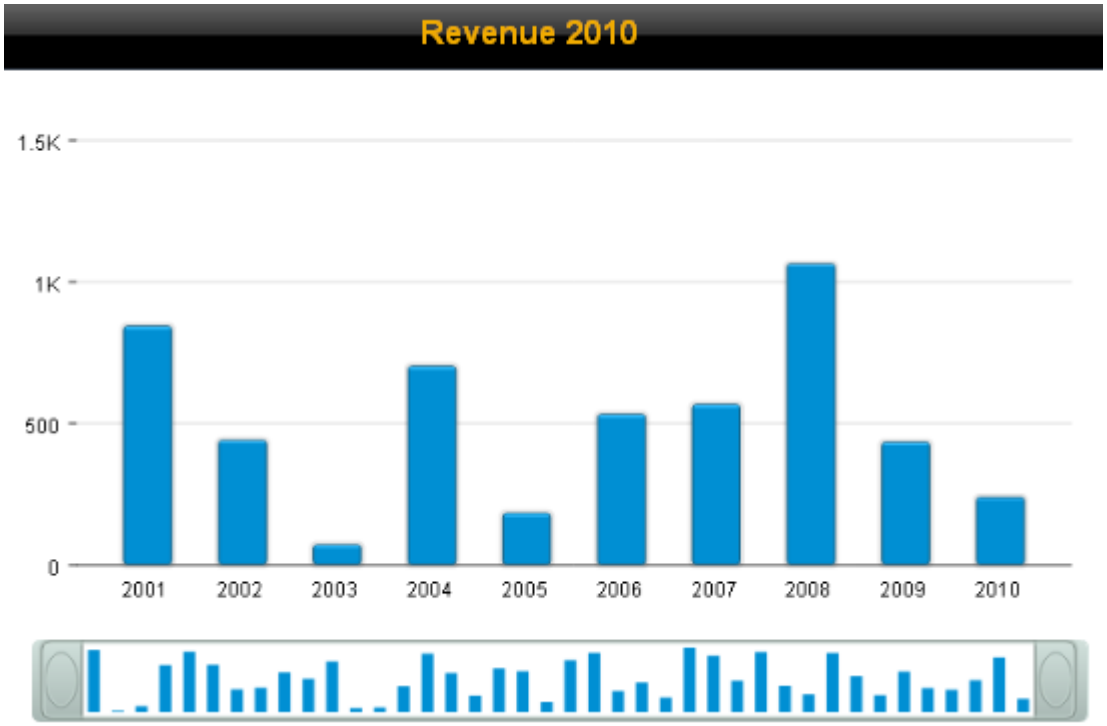
1. Right-click the **main.html** file you created on page 13 and select **Run > Run on Server**.
2. In the Run On Server dialog, select **Choose an existing server.**



3. From the `localhost` folder, select **HTTP Preview at localhost.**
4. Select **Always use this server when running this project**.



5. Move resources to the right to configure them on the server. Click **Finish.**
6. MAKit shows the chart you specified in the `main.html` file using the Web browser you have specified.


Revenue 2010
1.5K
1K
500
0
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010