

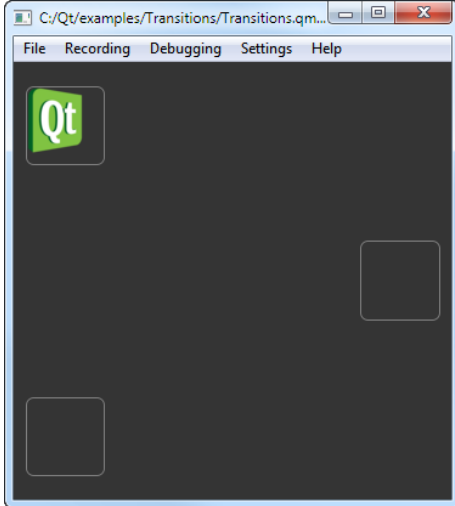
Getting Started with Qt Quick and the Qt SDK v1.1

Creating a Qt Quick Application

06 Feb
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This wiki page shows how to create Qt Quick applications with the [Qt SDK 1.1 technology preview](#).

In the first tutorial we use basic elements and illustrate basic concepts of Qt Quick to describe how to use the Qt Creator to implement the [states and transitions example application](#). The example application displays a Qt logo that moves between three rectangles on the page when you click them.

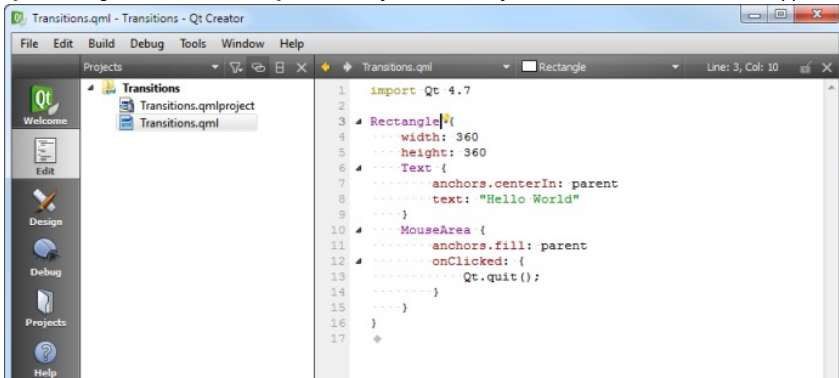


First we just run the application in the QML Viewer. Later we import it to a Qt application. To finally be able to deploy to mobile devices some configurations are needed for Symbian and Maemo.

Creating the Project

1. Select **File > New File or Project > Qt Quick Project > Qt Quick UI > Choose**.
2. Follow the instructions of the wizard to create a project called Transitions.
3. Press Ctrl+R to run the application in the QML Viewer.

Qt Creator generates a default QML file that you can modify to create the main view of the application.



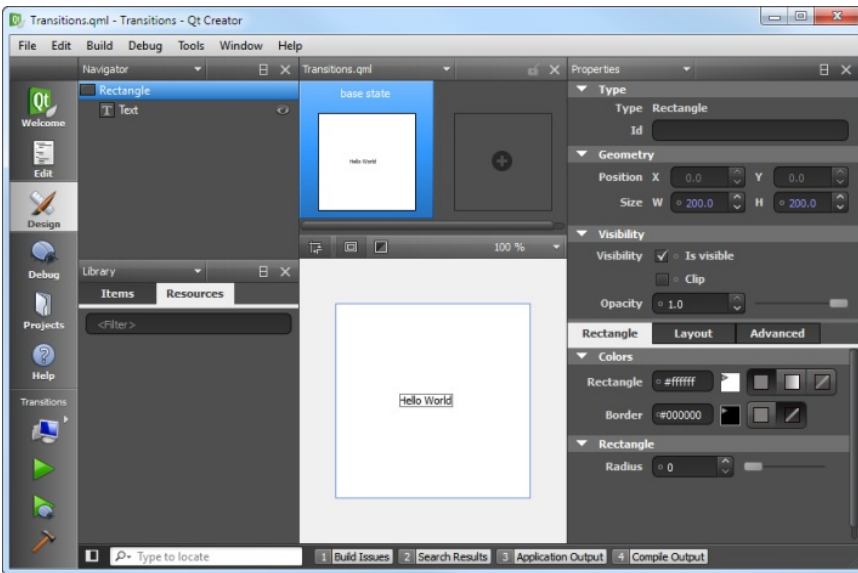
Creating the Main View

The main view of the application displays a Qt logo in the top left corner of the screen and two empty rectangles.

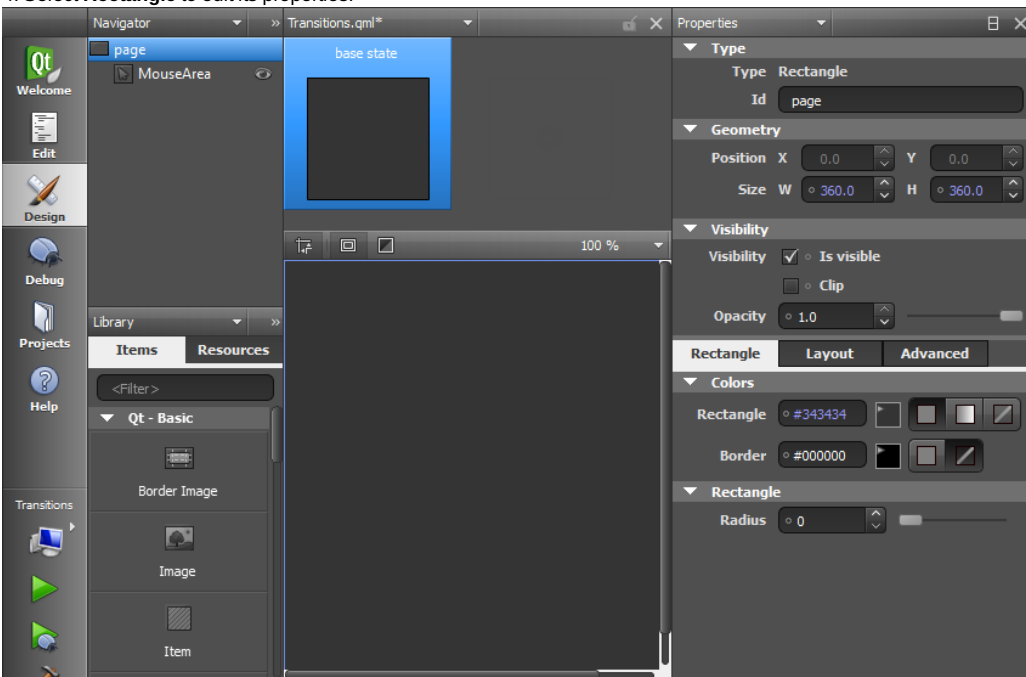
To use the states.png image in your application, you must copy it to the project directory from the examples directory in the Qt installation directory. For example: c:\QtSDK\Examples\4.7\declarative\animation\states. The image appears in the

Resources pane. You can also use any other image or a QML element, instead.

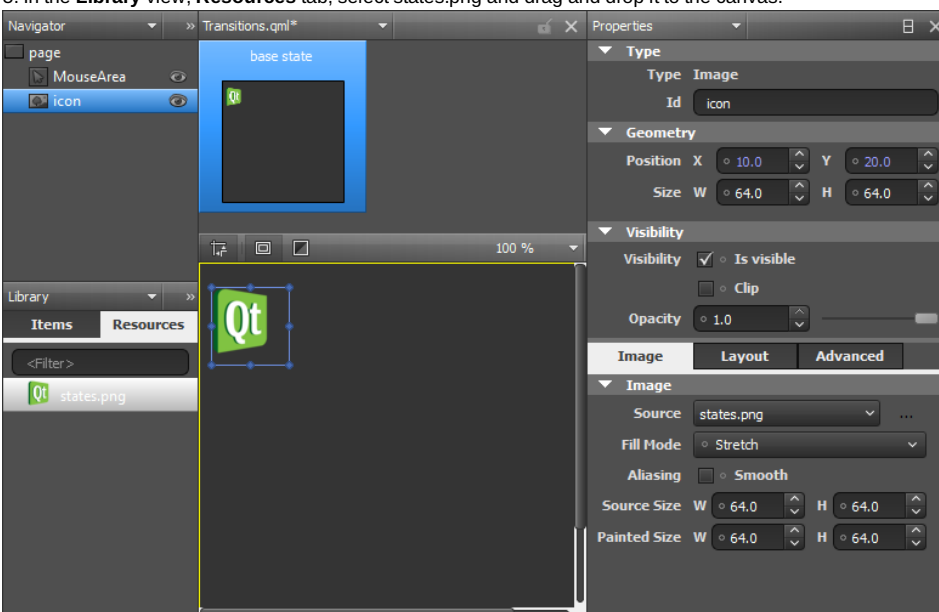
1. In the **Projects** view, double-click the main .qml file (Transitions.qml) to open it in the code editor.
2. Click **Design** to open the file in *Qt Quick Designer*.



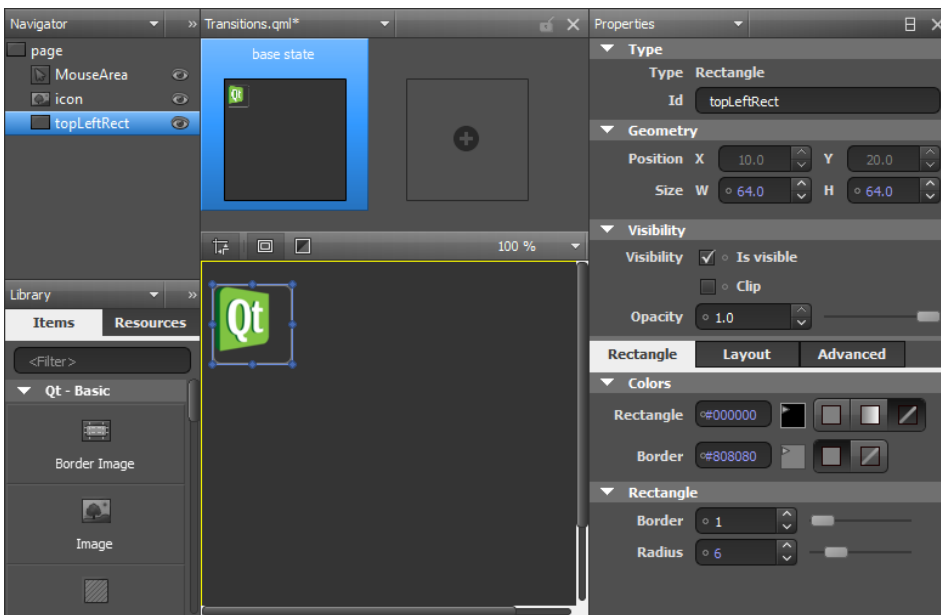
3. In the **Navigator** pane, select **Text** and press **Delete** to delete it.
4. Select **Rectangle** to edit its properties.





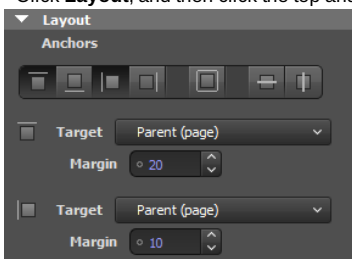
- In the **Id** field, enter *page*, to be able to reference the rectangle from other places.
 - In the **Colors** tab, **Rectangle** field, set the color to #343434.
5. In the **Library** view, **Resources** tab, select *states.png* and drag and drop it to the canvas.




- In the **Id** field, enter *icon*.
 - In the **Position** field, set **X** to 10 and **Y** to 20.
6. In the **Library** view, **Items** tab, select **Rectangle**, drag and drop it to the canvas, and edit its properties.



- In the **Id** field, enter *topLeftRect*.
 - In the **Size** field, set **W** and **H** to 64, for the rectangle size to match the image size.
 - In the **Colors** tab, **Rectangle** field, click the  button to make the rectangle transparent.
 - In the **Border** field, set the border color to #808080.
 - In the **Rectangle** tab, **Border** field, set the border width to 1.
- Note:** If the Border field does not appear after you set the border color, try setting the border color to solid by clicking the  button.
- In the **Radius** field, select 6 to create rounded corners for the rectangle.
 - Click **Layout**, and then click the top and left anchor buttons to anchor the rectangle to the top left corner of the page.



- In the **Margin** field, select 20 for the top anchor and 10 for the left anchor.
7. In the **Navigator** pane, drag and drop the **Mouse Area** element from *page* to *topLeftRect* to make it apply only to the rectangle and not to the whole page.
8. Edit **Mouse Area** properties:
- Click **Layout**, and then click the  button to anchor the mouse area to the rectangle.
 - In the code editor, edit the pointer to the clicked expression in the mouse area element, as illustrated by the following code snippet:

```
MouseArea {
    anchors.fill: parent
    onClicked: page.state = ''
}
```

The expression sets the state to the base state and returns the image to its initial position.

9. In the **Navigator** pane, copy *topLeftRect* (by pressing **Ctrl+C**) and paste it to the canvas twice (by pressing **Ctrl+V**). Qt Creator renames the new instances of the element *topLeftRect1* and *topLeftRect2*.
10. Select *topLeftRect1* and edit its properties:
- In the **Id** field, enter *middleRightRect*.
 - In **Layout**, select the right and vertical center anchor buttons to anchor the rectangle to the middle right margin of the screen.
 - In the **Margin** field, select 10 for the right anchor and 0 for the vertical center anchor.
 - In the code editor, add a pointer to a clicked expression to the mouse area element. The following expression sets the state to *State1*:
- ```
{{{1}}}
```

You will create *State1* later.

11. Select *topLeftRect2* and edit its properties:
- In the **Id** field, enter *bottomLeftRect*.
  - In **Layout**, select the bottom and left anchor buttons to anchor the rectangle to the bottom left margin of the screen.
  - In the **Margin** field, select 20 for the bottom anchor and 10 for the left anchor.
  - In the code editor, add a pointer to a clicked expression to the mouse area element. The following expression sets the state to

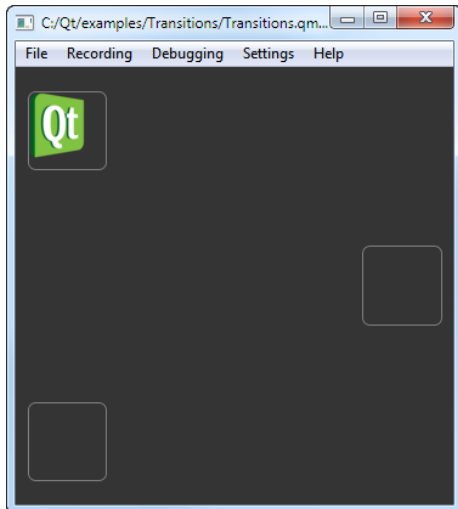
State2:

```
{{{1}}}
```

You will create State2 later.

12. Press **Ctrl+S** to save the changes.

13. Press **Ctrl+R** to run the application in the QML Viewer.



You should see the Qt logo in the top left rectangle, and two additional rectangles in the center right and bottom left of the screen. You can now create additional states to add views to the application.

## Adding Views

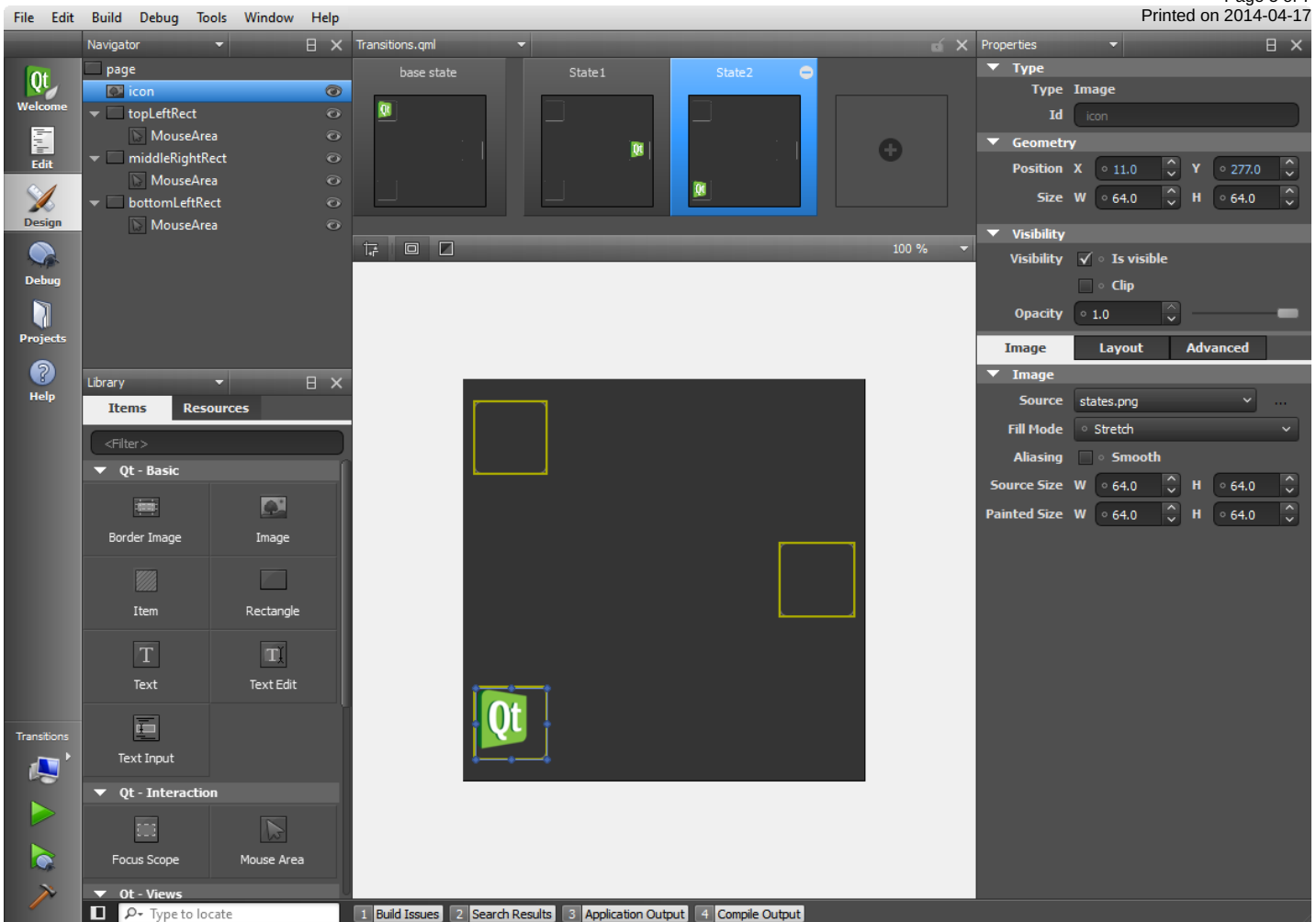
In the .qml file, you already created pointers to two additional states: State1 and State2. To create the states:

1. Click the empty slot in the **States** pane to create State1.
2. Click the empty slot in the **States** pane to create State2.
3. In the code editor, bind the position of the Qt logo to the rectangle to make sure that the logo is displayed within the rectangle when the view is scaled on different sizes of screens. Set expressions for the x and y properties, as illustrated by the following code snippet:

```
states: [
 State {
 name: "State1"

 PropertyChanges {
 target: icon
 x: middleRightRect.x
 y: middleRightRect.y
 }
 },
 State {
 name: "State2"

 PropertyChanges {
 target: icon
 x: bottomLeftRect.x
 y: bottomLeftRect.y
 }
 }
]
```



**Note:** When you set the expressions, drag and drop is disabled for the icon in Qt Quick Designer.

4. Press **Ctrl+R** to run the application in the QML Viewer.

Click the rectangles to move the Qt logo from one rectangle to another.

## Adding Animation to the View

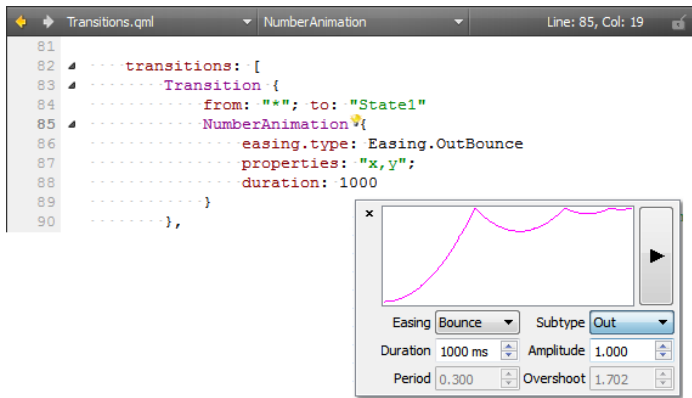
Add transitions to define how the properties change when the Qt logo moves between states. The transitions apply animations to the Qt logo. For example, the Qt logo bounces back when it moves to the middleRightRect and eases into bottomLeftRect. Add the transitions in the code editor.

1. In the code editor, add the following code to specify that when moving to State1, the x and y coordinates of the Qt logo change linearly over a duration of 1 second:

```
transitions: [
 Transition {
 from: ""; to: "State1"
 NumberAnimation {
 properties: "x,y";
 duration: 1000
 }
 }
],
```

2. You can use the Qt Quick toolbar for animation to change the easing curve type from linear to OutBounce:

- Click **NumberAnimation** in the code editor to display the icon, and then click the icon to open the toolbar:



- In the **Easing** field, select **Bounce**.

- In the Subtype field, select Out.

3. Add the following code to specify that when moving to State2, the x and y coordinates of the Qt logo change over a duration of 2 seconds, and an InOutQuad easing function is used:

```
Transition {
 from: ""; to: "State2"
 NumberAnimation {
 properties: "x,y";
 easing.type: Easing.InOutQuad;
 duration: 2000
 }
},
```

4. Add the following code to specify that for any other state changes, the x and y coordinates of the Qt logo change linearly over a duration of 200 milliseconds:

```
Transition {
 NumberAnimation {
 properties: "x,y";
 duration: 200
 }
}
]
```

5. Press **Ctrl+R** to run the application in the QML Viewer.

Click the rectangles to view the animated transitions.

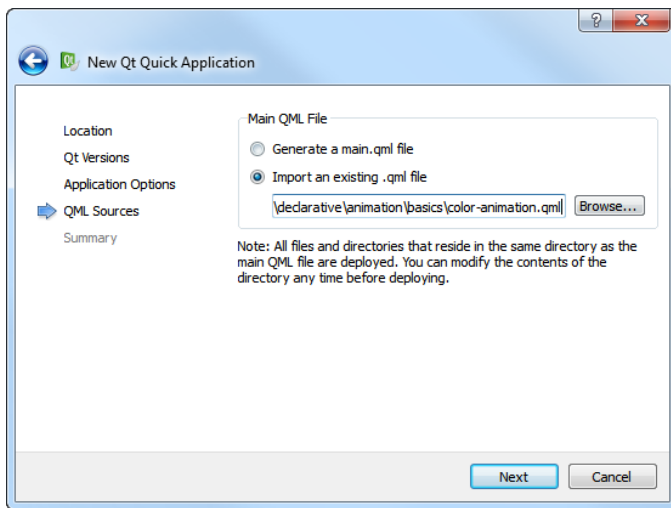
## Importing QML Applications to deploy to mobile devices

If you have existing QML applications that you want to run in Qt Creator or deploy to mobile devices, use the **Qt Quick Application** wizard and select the main .qml file in your project. All the other files in the project are automatically added to the application project.

For example, you can open and run the QML examples and demos to learn how to use various aspects of QML. To run the examples in the QML Viewer on the desktop, open them in the **Welcome** mode. To view the examples on mobile devices, use the **Qt Quick Application** wizard to convert them into Qt Quick Applications.

**To import QML applications:**

1. Select **File > New File or Project > Qt Quick Project > Qt Quick Application > Choose....**
2. Name the project and set its path, and then click **Next**.
3. Select the Qt versions to use as build targets for your project, and click **Next**.
4. Specify options for deploying the application to mobile device targets, and click **Next**.
5. In the **QML Sources** dialog, select the **Import an existing .qml file** option and specify the main .qml file of the project you want to import.



6. Click **Next**.

7. Review the project settings, and click **Finish** to create the project.

Qt Creator adds references to the QML files to a project and creates the additional files necessary for deploying applications to mobile devices.

## Configuring Symbian and Maemo environments

However, to actually deploy the application on the Symbian or Maemo device, you need to set up your development environment for them as described in the following articles:

[Set up Qt Environment](#)

[Set up Qt for Maemo Environment](#)