
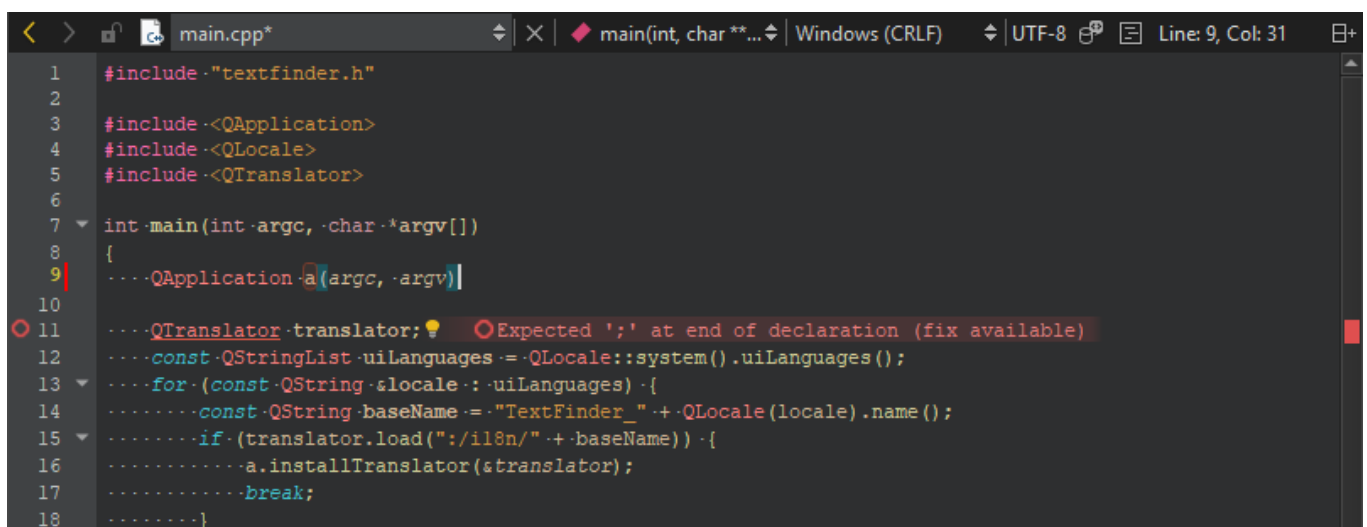


# Checking Code Syntax

As you write code, Qt Creator checks code syntax. When Qt Creator spots a syntax error in your code, it underlines it, displays an icon, and shows error details when you move the mouse pointer over the error or the icon. If a fix is available, you can apply it by clicking .

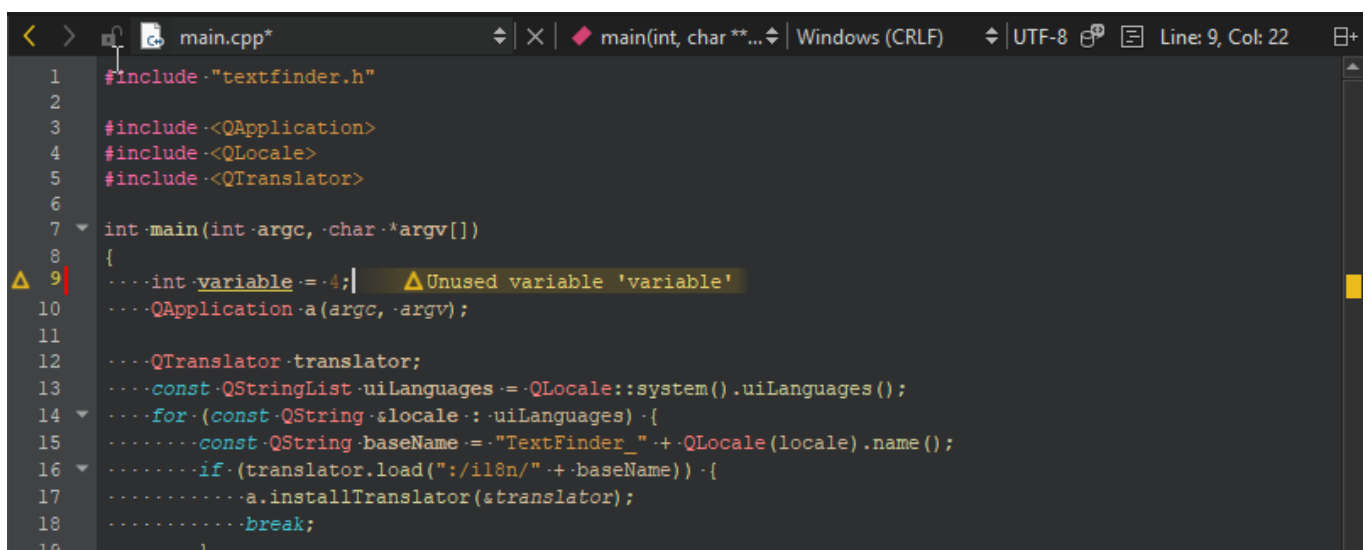
Similarly, when you are working on an instance of a JavaScript object notation (JSON) entity, Qt Creator underlines errors in the JSON data structure.

In the following screenshot, Qt Creator annotates an error because a semicolon is missing at the end of the line:

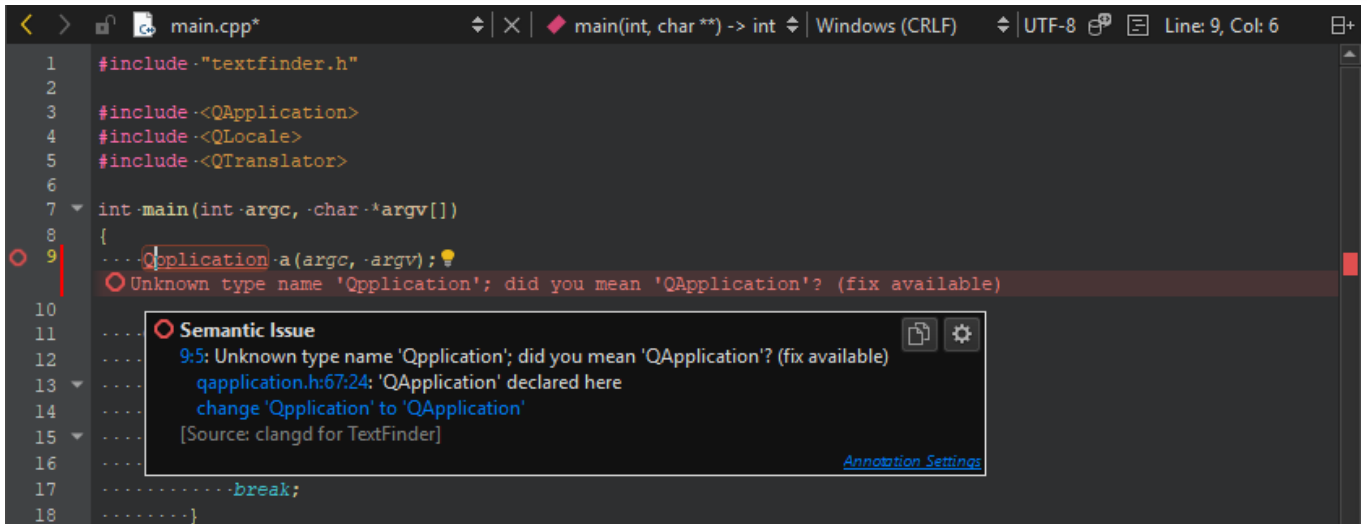


```
< > main.cpp* | main(int, char **... | Windows (CRLF) | UTF-8 | Line: 9, Col: 31
1  #include < "textfinder.h"
2
3  #include < <QApplication>
4  #include < <QLocale>
5  #include < <QTranslator>
6
7  int main(int argc, char *argv[])
8  {
9      QApplication a(argc, argv)
10
11      QTranslator translator; Expected ';' at end of declaration (fix available)
12      const QStringList uiLanguages = QLocale::system().uiLanguages();
13      for (const QString &locale : uiLanguages) {
14          const QString baseName = "TextFinder_" + QLocale(locale).name();
15          if (translator.load(":/i18n/" + baseName)) {
16              a.installTranslator(&translator);
17              break;
18          }
19      }
```

In the following screenshot, Qt Creator issues a warning because the variable is not used:



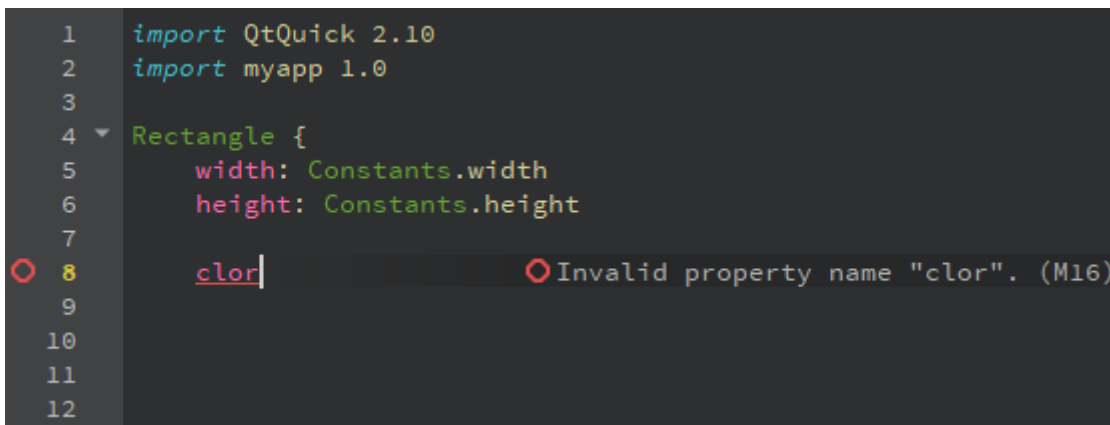
```
< > main.cpp* | main(int, char **... | Windows (CRLF) | UTF-8 | Line: 9, Col: 22
1  #include < "textfinder.h"
2
3  #include < <QApplication>
4  #include < <QLocale>
5  #include < <QTranslator>
6
7  int main(int argc, char *argv[])
8  {
9      int variable = 4; Unused variable 'variable'
10     QApplication a(argc, argv);
11
12     QTranslator translator;
13     const QStringList uiLanguages = QLocale::system().uiLanguages();
14     for (const QString &locale : uiLanguages) {
15         const QString baseName = "TextFinder_" + QLocale(locale).name();
16         if (translator.load(":/i18n/" + baseName)) {
17             a.installTranslator(&translator);
18             break;
19         }
20     }
```



You can use the icons in the tooltip popup to copy the error or warning message to the clipboard or to ignore and hide it. Select the **Annotation Settings** link to specify the position of the line annotations.

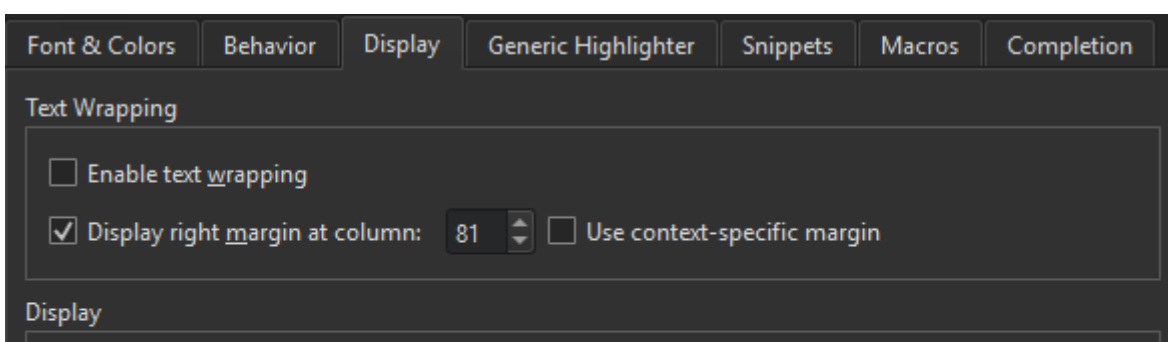
To modify the colors used for underlining errors and warnings, select **Edit > Preferences > Text Editor > Font & Colors > Copy**, and select new colors for **Error** and **Warning**.

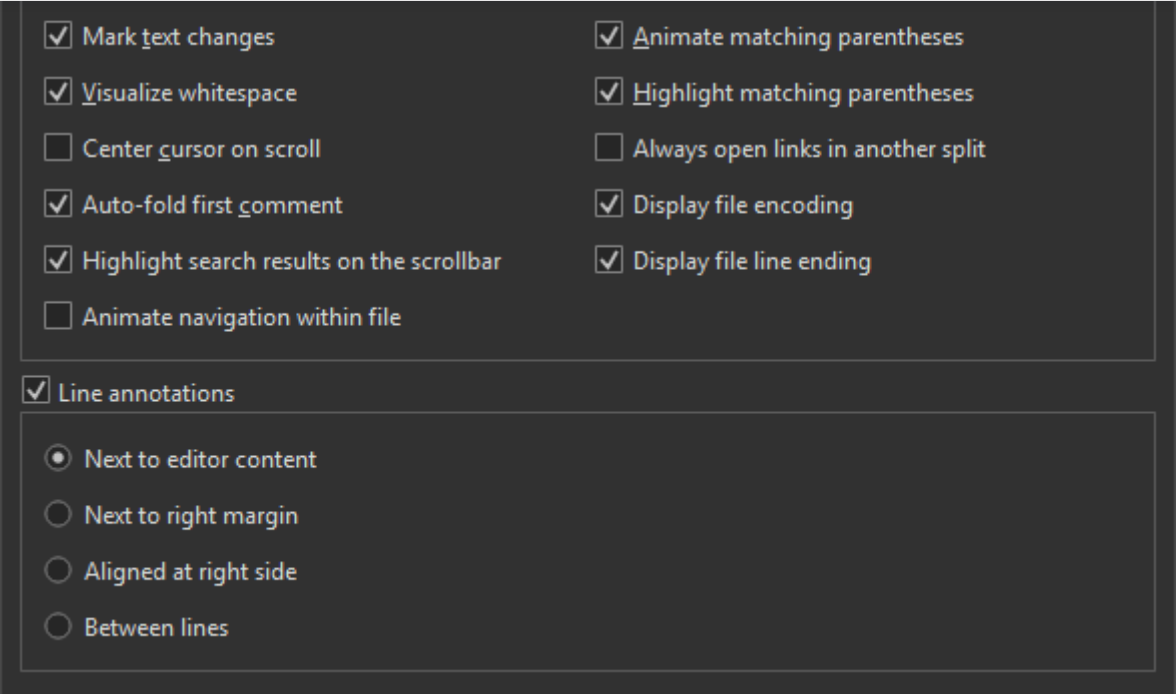
When writing QML or JavaScript code, the annotations may contain error codes listed in [JavaScript and QML Error Codes](#).



## Specifying Line Annotation Positions

To specify the position where the annotations are displayed, select **Edit > Preferences > Text Editor > Display > Line annotations**, and then select whether to display the annotations directly next to the code, aligned to the right of the code, or in the right margin. Showing annotations between lines can be useful if there is usually not enough space to display annotations next to the text.





If you hide the annotations by deselecting the check box, you can move the mouse pointer over an icon to view them.

## JavaScript and QML Error Codes

You can run static checks on the QML and JavaScript code in your project to find common problems. To run the checks, select **Tools > QML/JS > Run Checks** or press **Ctrl+Shift+C**. The results are shown in the **QML** and **QML Analysis** filters in **Issues**.

Many of the error messages are similar to the ones in Douglas Crockford's **JSLint** tool. For more information about JSLint errors, see **JSLint Error Explanations**.

Id	Severity	Message	Description
M1	Error	Invalid value for enum	
M2	Error	Enum value must be a string or a number	
M3	Error	Number value expected	
M4	Error	Boolean value expected	
M5	Error	String value expected	
M6	Error	Invalid URL	
M7	Warning	File or directory does not exist	
M8	Error	Invalid color	
M9	Error	Anchor line expected	
M10	Error	Duplicate property binding	See also: Duplicate key '{a}'.
M11	Error	Id expected	See also: Expected an identifier and instead saw '{a}' (a reserved word).

Id	Severity	Message	Description
M15	Error	Duplicate id	Ids in a file must be unique. See also: <a href="#">Duplicate key '{a}'</a> .
M16	Error	Invalid property name name	
M17	Error	Name does not have members	
M18	Error	Field is not a member of object	
M19	Warning	Assignment in condition	It could be a typing error. If it is intentional, wrap the assignment in parentheses.
M20	Warning	Unterminated non-empty case block	Case blocks should either be empty or end in a flow control statement such as <code>break</code> , <code>return</code> or <code>continue</code> . Alternatively you can indicate intentional fall through by ending with a <code>// fall through</code> comment.
M23	Warning	Do not use <code>eval</code>	See also: <a href="#">eval is evil</a> .
M28	Warning	Unreachable	Indicates that the underlined statement will never be executed.
M29	Warning	Do not use <code>with</code>	See also: <a href="#">Unexpected 'with'</a> .
M30	Warning	Do not use comma expressions	
M31	Warning	Unnecessary message suppression	
M103	Warning	Name is already a formal parameter	
M104	Warning	Name is already a function	
M105	Warning	Var name is used before its declaration	
M106	Warning	Name already is a var	
M107	Warning	Name is declared more than once	Variables declared in a function are always visible everywhere in the function, even when declared in nested blocks or for statement conditions. Redeclaring a variable has no effect.
M108	Warning	Function name is used before its declaration	See also: <a href="#">{a} was used before it was defined</a> .
M109	Warning	Do not use <code>Boolean</code> as a constructor	See also: <a href="#">Do not use {a} as a constructor</a> .
M110	Warning	Do not use <code>String</code> as a constructor	See also: <a href="#">Do not use {a} as a constructor</a> .
M111	Warning	Do not use <code>Object</code> as a constructor	See also: <a href="#">Do not use {a} as a constructor</a> .
M112	Warning	Do not use <code>Array</code> as a constructor	See also: <a href="#">Do not use {a} as a constructor</a> .
M113	Warning	Do not use <code>Function</code>	See also: <a href="#">Do not use {a} as a constructor</a> .

		keyword and the opening parenthesis should be separated by a single space	
M115	Warning	Do not use stand-alone blocks	Blocks do not affect variable scoping. Thus blocks that are not associated to <code>if</code> , <code>while</code> , etc. have no effect and should be avoided.
M116	Warning	Do not use void expressions	
M117	Warning	Confusing pluses	See also: <a href="#">Confusing pluses</a> .
M119	Warning	Confusing minuses	See also: <a href="#">Confusing minuses</a> .
M121	Hint	Declare all function vars on a single line	
M123	Hint	Unnecessary parentheses	
M126	Warning	<code>==</code> and <code>!=</code> may perform type coercion, use <code>===</code> or <code>!==</code> to avoid it	The non-strict equality comparison is allowed to convert its arguments to a common type. That can lead to unexpected results such as <code>' \t\r\n' == 0</code> being true. Use the strict equality operators <code>===</code> and <code>!==</code> and be explicit about conversions you require.
M127	Warning	Expression statements should be assignments, calls or delete expressions only	
M128	Error	A state cannot have the specified child item	
M129	Error	Type cannot be instantiated recursively	
M201	Hint	Place var declarations at the start of a function	See also: <a href="#">Move 'var' declarations to the top of the function</a> .
M202	Hint	Use only one statement per line	
M220	Error	This type (type name) is not supported as a root element of a UI file (.ui.qml)	For more information about supported QML types, see <a href="#">UI Files</a> .
M221	Error	This type (type name) is not supported in a UI file (.ui.qml)	For more information about supported QML types, see <a href="#">UI Files</a> .
M222	Error	Functions are not supported in a UI file (.ui.qml)	For a list of supported JavaScript functions, see <a href="#">Supported Methods</a> .
M223	Error	JavaScript blocks are not supported in a UI file (.ui.qml)	For more information about supported features, see <a href="#">UI Files</a> .
M224	Error	Behavior type is not supported	For more information about supported QML types, see <a href="#">UI Files</a> .
ID	Severity	Message	Description

M225	Error	States are only supported in the root item in a UI file (.ui.qml)	For more information about supported features, see <a href="#">UI Files</a> .
M226	Error	Referencing the parent of the root item is not supported in a UI file (.ui.qml)	For more information about supported features, see <a href="#">UI Files</a> .
M227	Error	Do not mix translation functions in a UI file (.ui.qml)	Even though several different translation functions, such as <code>qsTr</code> and <code>qsTrId</code> are supported, you should pick one and use it consistently within a UI file. For more information, see <a href="#">Qt QML Methods</a> .
M300	Error	Unknown component	
M301	Error	Could not resolve the prototype name of <code>object</code>	
M302	Error	Could not resolve the prototype name	
M303	Error	Prototype cycle, the last non-repeated component is name	
M304	Error	Invalid property type name	
M305	Warning	<code>==</code> and <code>!=</code> perform type coercion, use <code>===</code> or <code>!==</code> to avoid it	See <a href="#">M126</a> .
M306	Warning	Calls of functions that start with an uppercase letter should use <code>new</code>	By convention, functions that start with an uppercase letter are constructor functions that should only be used with <code>new</code> .
M307	Warning	Use <code>new</code> only with functions that start with an uppercase letter	See also: <a href="#">Do not use {a} as a constructor</a> .
M308	Warning	Do not use <code>Number</code> as a constructor	See also: <a href="#">Do not use {a} as a constructor</a> .
M309	Hint	Use spaces around binary operators	
M310	Warning	Unintentional empty block, use <code>{}</code> for empty object literal	
M311	Hint	Use <code>type</code> instead of <code>var</code> or <code>variant</code> to improve performance	
M312	Error	Missing property number	
M313	Error	Object value expected	
M314	Error	Array value expected	
Id	Severity	Message	Description

M316	Error	Maximum number value is number	
M317	Error	Minimum number value is number	
M318	Error	Maximum number value is exclusive	
M319	Error	Minimum number value is exclusive	
M320	Error	String value does not match required pattern	
M321	Error	Minimum string value length is number	
M322	Error	Maximum string value length is number	
M323	Error	Number elements expected in array value	See also: <a href="#">The array literal notation [] is preferable.</a>
M324	Error	Hit maximum recursion limit visiting AST, the code model will be unreliable and most likely invalid	
M325	Warning	Logical value does not depend on actual values	
M326	Error	Components are only allowed to have a single child element	For more information, see <a href="#">Component</a> .
M327	Warning	Components require a child element	For more information, see <a href="#">Component</a> .
M400	Warning	Duplicate import	An import statement has been added twice. For more information, see <a href="#">Import Statements</a> .

## Resetting the Code Model

If you change the build and run kit when you have QML files open in the code editor, the code model might become corrupt. The following error message indicates that this might have happened: *Using Qt Quick 1 code model instead of Qt Quick 2.*

You can see the error message when you move the mouse pointer over code that Qt Creator underlines in the code editor or when you open a QML file in Qt Design Studio.

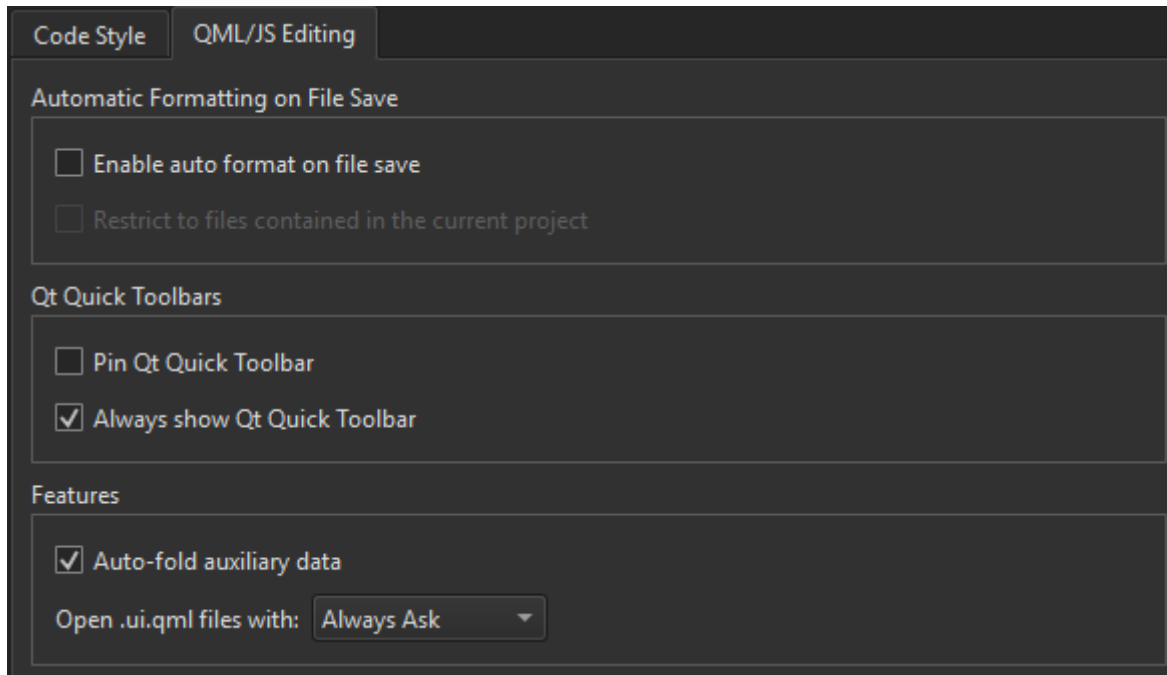
To reset the code model, select **Tools > QML/JS > Reset Code Model**.

If this does not help, try changing the QML emulation layer to the one that was built with the same Qt version as the one selected in the build and run kit.

## Inspecting QML and JavaScript

## Automatically Formatting QML/JS Files

To automatically format QML/JS files upon saving, select **Edit > Preferences > Qt Quick > QML/JS Editing > Enable auto format on file save**.

[< Semantic Highlighting](#)[Completing Code >](#)

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