

Preprocessor Based Approach for Cross-Platform Development with Qt Quick Components

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Motivation

QML does not provide standard components
like buttons and lists



Qt Quick Colibri



Qt Quick Components

How to create cross-platform
applications using
Qt Quick Components?

Qt Components: potential problems

- Incapability to import different platform modules in same QMLs
- Some components implemented only for one of the target platforms
- Different APIs of the same components on different platforms
- Missing or differently named resources
- Issues of component implementation

Preprocessor in work

```
import com.nokia.symbian 1.1 //@symbian  
import com.nokia.meego 1.0 //@meego
```



Preprocessor in work

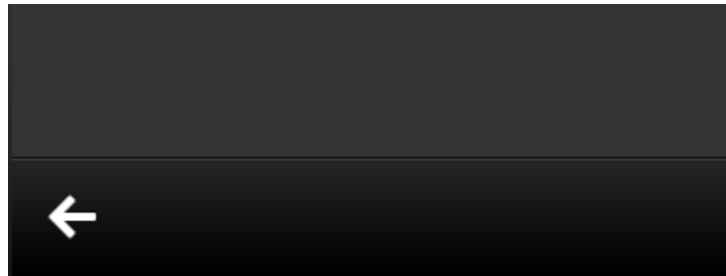
Source code:

```
ToolBar {  
    anchors.bottom: parent.bottom  
    tools: ToolBarLayout {  
        ToolButton { //@symbian  
        ToolItem { //@meego  
            iconSource: "toolbar-back" //@symbian  
            iconSource: "image://theme/icon-m-toolbar-back-white" //@meego  
        }  
    }  
}
```

Preprocessor in work

Preprocessed code for Symbian platform:

```
ToolBar {  
    anchors.bottom: parent.bottom  
    tools: ToolBarLayout {  
        ToolButton { //@symbian  
            iconSource: "image://theme/toolbar-back" //@symbian  
        }  
    }  
}
```



Preprocessor in work

Preprocessed code for Meego platform:

```
ToolBar {  
    anchors.bottom: parent.bottom  
    tools: ToolBarLayout {  
        ToolItem { //@meego  
            iconSource: "image://theme/icon-m-toolbar-back-white" //@meego  
        }  
    }  
}
```



UI Constants

Item {

```
property string listItemTitleFontFamily: "Nokia Pure Text Bold" //@meego
property string listItemTitleFontFamily: platformStyle.fontFamilyRegular //@symbian
property int listItemTitleFontSize: 26 //@meego
property int listItemTitleFontSize: platformStyle.fontSizeMedium //@symbian
}
```

Label {

```
id: participantName
anchors.verticalCenter: parent.verticalCenter
text: name
font.family: uiConstants.listItemTitleFontFamily
font.pixelSize: uiConstants.listItemTitleFontSize
color: "white"
}
```



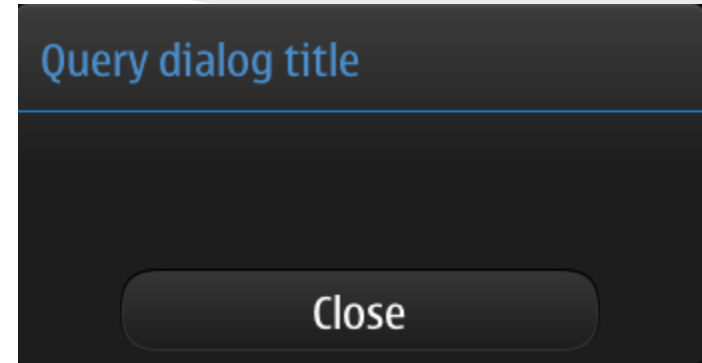
Evasion of missed properties

```
ToggleButton {  
    iconSource: "toolbar-menu" //@symbian  
    flat: true //@meego  
    Image { //@meego  
        anchors.centerIn: menuButton //@meego  
        sourceSize.height: menuButton.height //@meego  
        source: "qrc:images/menu.png" //@meego  
    } //@meego  
}
```

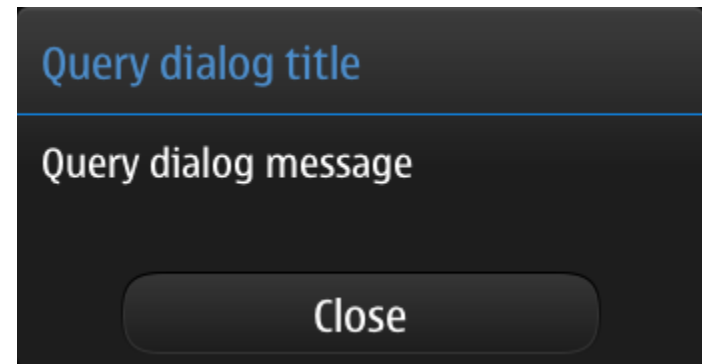
ToggleButton from Qt Quick Components for MeeGo has no iconSource property

Issues of component implementation

```
AlertDialog {  
    id: alertDialogExample  
    titleText: "Query dialog title"  
    message: "Query dialog message"  
    acceptButtonText: "Close"  
}
```



```
AlertDialog {  
    id: alertDialogExample  
    titleText: "Query dialog title"  
    message: "Query dialog message\n"  
    acceptButtonText: "Close"  
}
```



Results

This solution was successfully implemented in our projects:



Octotask



Smart Conference Client

More on <http://yar.fruct.org>

Results

Smart Conference Client was successfully ported to Android OS using Necessitas



Results

- Cross-platform development involving Qt Quick Components using QML preprocessor becomes easier
- All required platforms supporting
- This tool will help us in future work