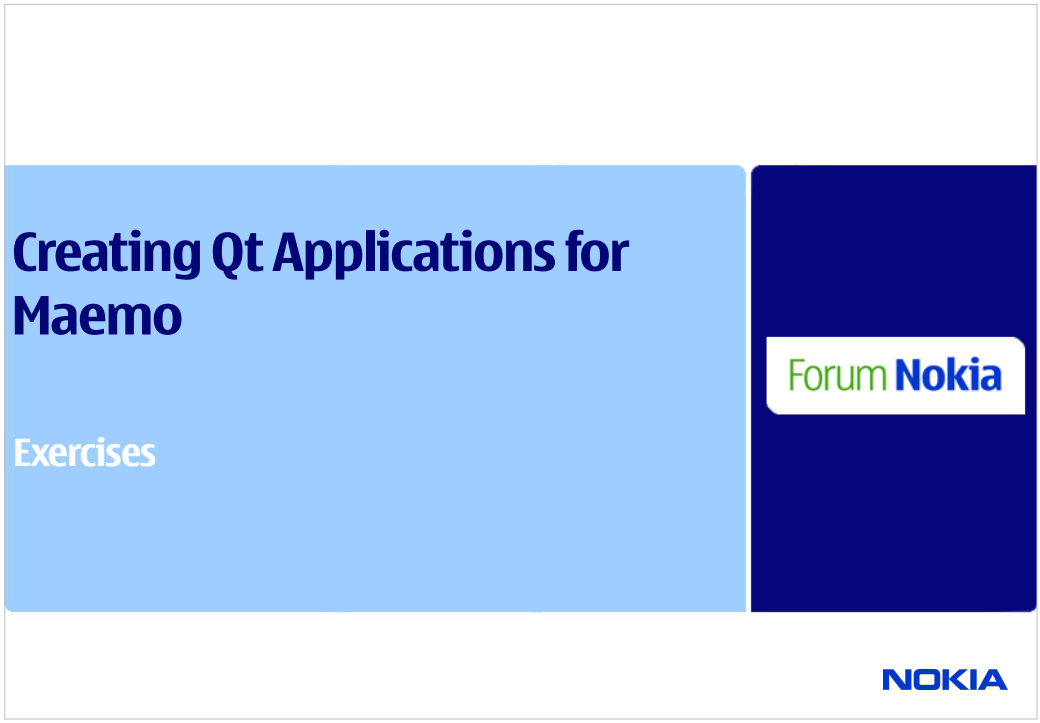

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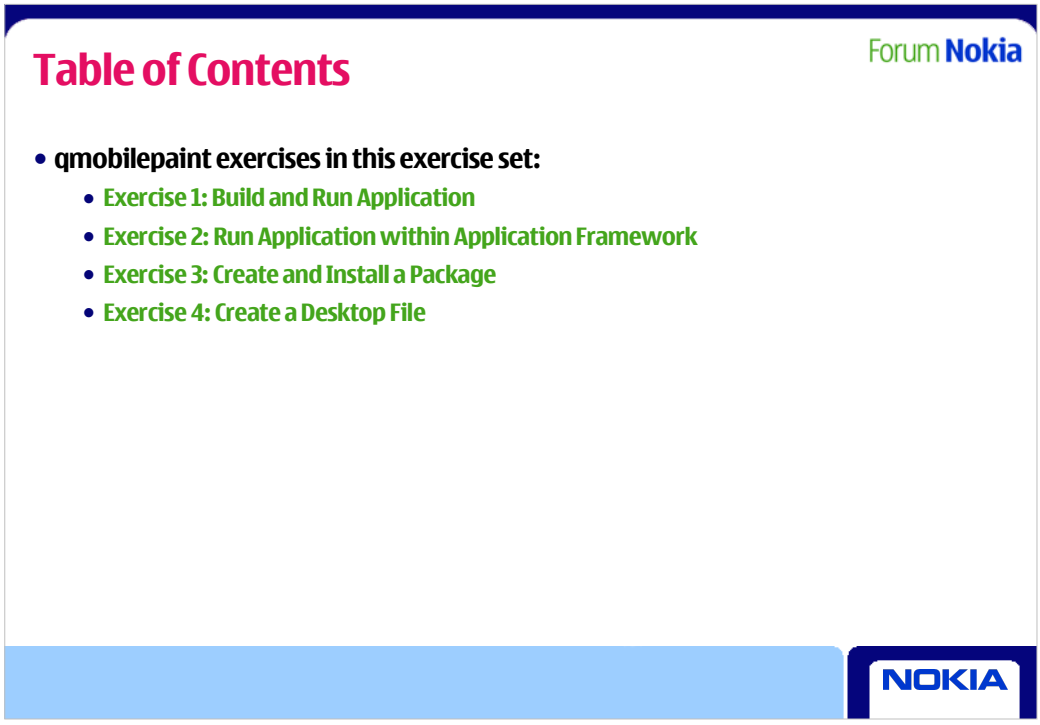

Note that the qmobilepaint exercises are intended to be performed as a sequence. Exercises 1 & 2 do not involve any file modifications, so in case you are familiar with these topics you can freely skip them.

The source code for the exercises is located under the exercises/qmobilepaint_exercise directory. The complete solution for the qmobilepaint is available in the qmobilepaint_exercise_sol directory.

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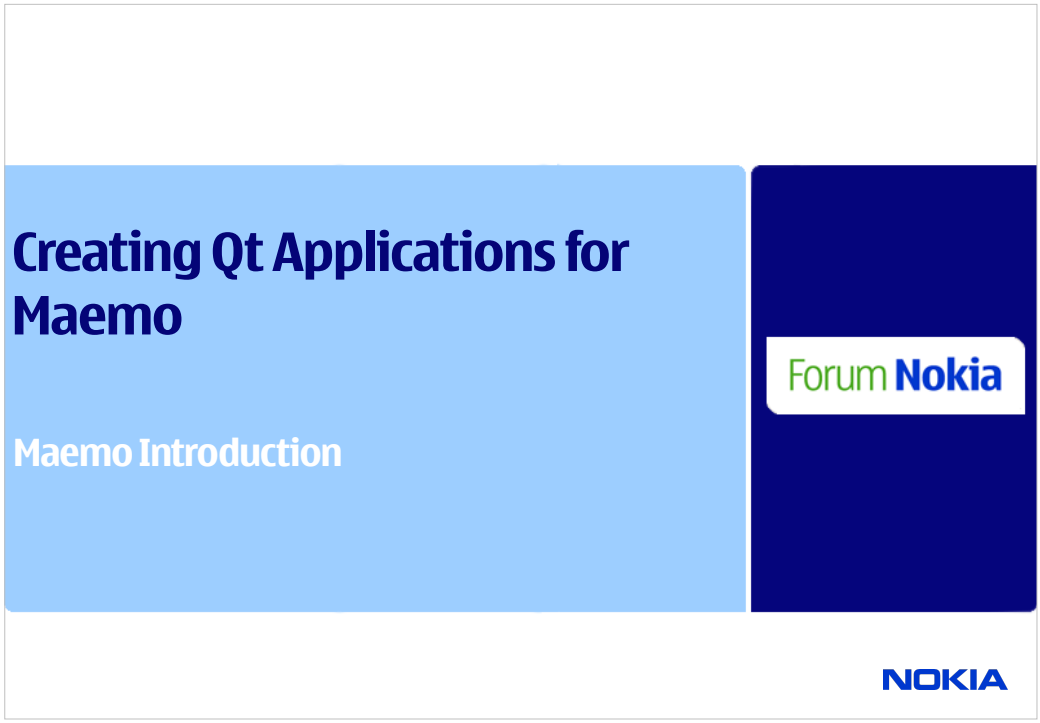

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Exercise 1: Build and Run Application

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- Qt application used in this exercise is located under the qmobilepaint_exercise directory

1. Before logging into Scratchbox, make sure that the Qt project it is visible in the Scratchbox home directory:
   - Copy or move it under /scratchbox/users/usrname/home/usrname/
   - ...or create a binding from the host to Scratchbox home directory with the help of "mount --bind" (details not given here)
1. Compile the application for the X86 target in your Scratchbox using qmake and make
   - If everything goes fine, the executable is created under the project's src directory
1. Launch Xephyr and redirect Scratchbox to it
2. Run the application by typing it's name (with proper path of course)
   - At first sight it may look quite good, but try the color picker, file open or save dialogs
   - You will notice that it doesn't look very nice yet...
   - Fonts, decorations, Maemo UI style in general is missing
   - Your application needs to be integrated with Maemo platform (managed by Maemo window manager)

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The objective of this exercise is to get acquainted with the Scratchbox and compiling/running Qt applications within it.

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Exercise 2: Run Application within Application Framework

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1. Start the application framework in X86 Scratchbox as it was explained in the course material
2. Then launch the application using the ”standalone shell” script
   - Now the user experience is much nicer and according to the Maemo 5 UI style
   - The example application is still not actually installed in the emulated device
     - The application is not known by the package management system
     - The application is also missing the desktop file so it is not listed among other applications
     - We will need to create an installable Maemo package. That is done in another exercise.

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The objective of this exercise is to get practical understanding of the Maemo Application Framework and the related Scratchbox tools.

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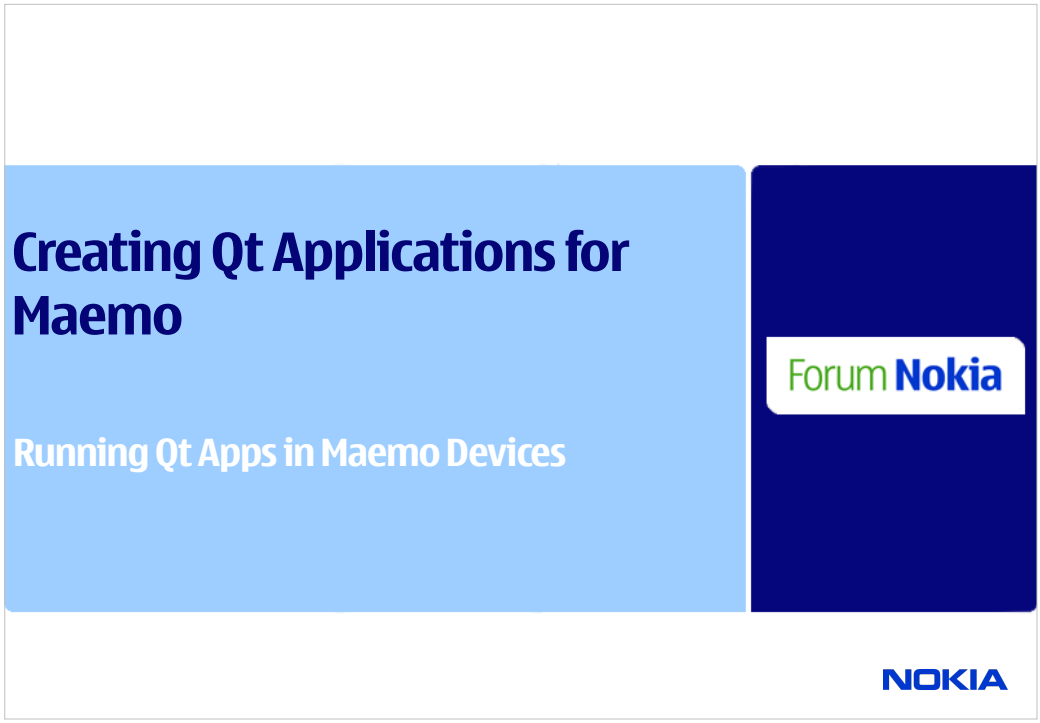

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Exercise 3: Create and Install a Package

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1. Edit the fields in the given incomplete "control" file in the qmobilepaint project's debian directory. Look for the "EXERCISE CONTROLFILE" tags.
   - What is the "Source" of this package?
   - What is the requirement for "Section", so that the end-users will see the application in the Application Manager?
   - Should something be added to the "Build-Depends"?
   - What "Architecture" would you use?
1. Then make sure that you have the ARMEL target type as active
2. Create the .deb package with dpkg as explained in the course material
   - Take a look at the dpkg output to verify that everything goes ok
   - qmobilepaint_1.0.0_armel.deb should be created in the qmobilepaint_exercise directory
1. Make sure that you have "libqt4-core" "libqt4-gui" and "libqt4-svg" installed in device
   - Application Manager and apt-get are able to resolve dependencies for end users, but you as a developer are now using dpkg which cannot handle the dependencies.
1. Copy and install it on a device. Run it from a terminal window (X Terminal).
   - The application is still missing the desktop file so it isn't listed among other applications
- In case you don't have a hardware device available, you can practise the package creation and installation with the X86 target (Scratchbox) as well!

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The objective of this exercise is to learn configuring and building a Maemo package.

Optional tasks:

•Study the meaning and contents of the other files in the debian directory: changelog, compat, control, copyright, dirs, postinst and rules.

•In this exercise the debian packaging files were already created and required only small modifications. To get deeper understanding, make another copy of the project and within this other copy first delete the debian directory and then practise using dh_make to debianize the project.

You may find instructions in this wiki article helpful:
http://wiki.maemo.org/Packaging_a_Qt_application

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Exercise 4: Create a Desktop File

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- Now it is time to set a desktop file for the qmobilepaint, so that it is listed in task launcher menu

1. Create a desktop entry with file name: ”qmobilepaint.desktop” in the src directory of the project
   - Remember to really use UTF-8 encoding for the file
   - Set executable path to value: /usr/bin/qmobilepaint
2. Take a look at the ”src.pro” file in the src directory of the project and look for the ”EXERCISE DESKTOPFILE” tags in it. They mark the places that you need to edit
   - Add an item in the ”INSTALLS” list representing the desktop file
     - Item identifier can be freely used, choose e.g. ”desktop”
   - Add proper path & files information for the previously specified item
     - What is the correct path for the desktop file?
3. Build a package again and install it to a device. Now your application should be listed under the ”More...” folder of the applications menu
   - Again, you can create a package for Scratchbox instead if you don’t have hardware available

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The objective of this exercise is to learn the small but important task of specifying a desktop file for an application.

If interested, you can study the generic desktop entry specification here:
http://standards.freedesktop.org/desktop-entry-spec/latest/

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