Principles of Embedded Software

Debug Guide

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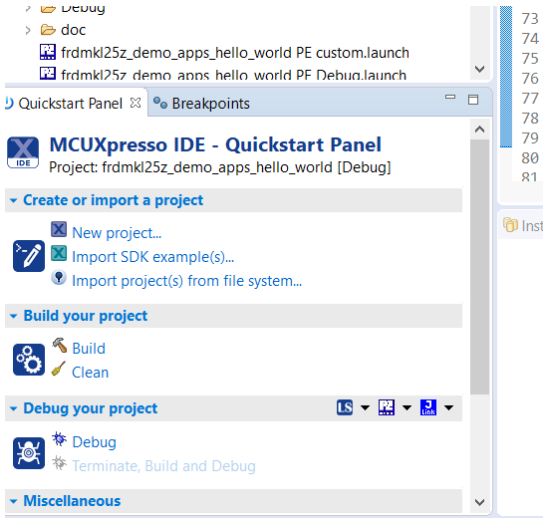
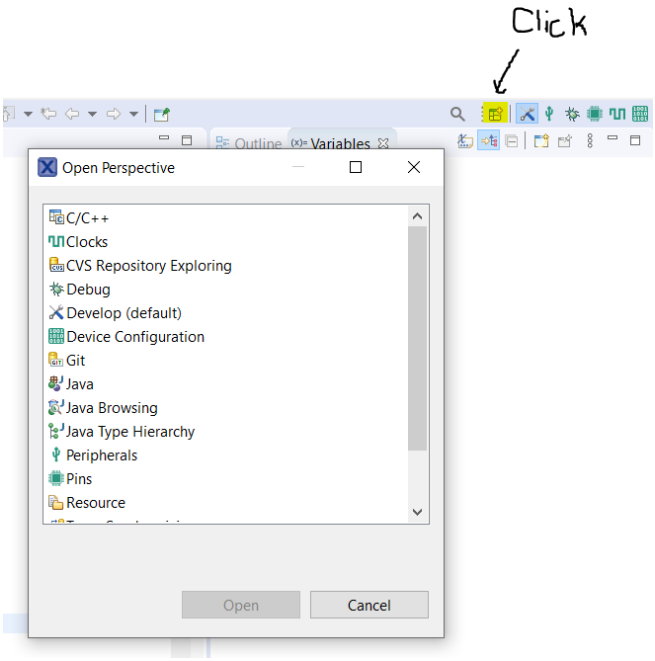
Pointer's on IDE usage

1. **QuickStart Panel** is your go-to guide whenever you feel lost be it for a setting, importing an SDK sample, creating a new project, etc.

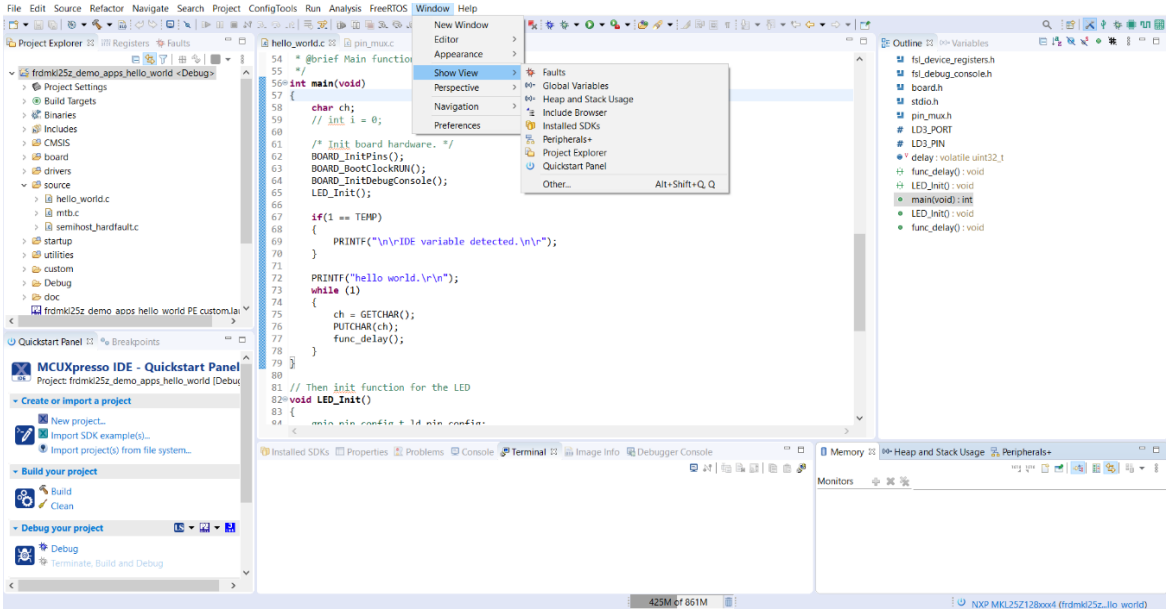


This window is present typically in the bottom left. If not already present, navigate through the Window tab on the top of the IDE, to the "Show View" and locate the QuickStart panel.

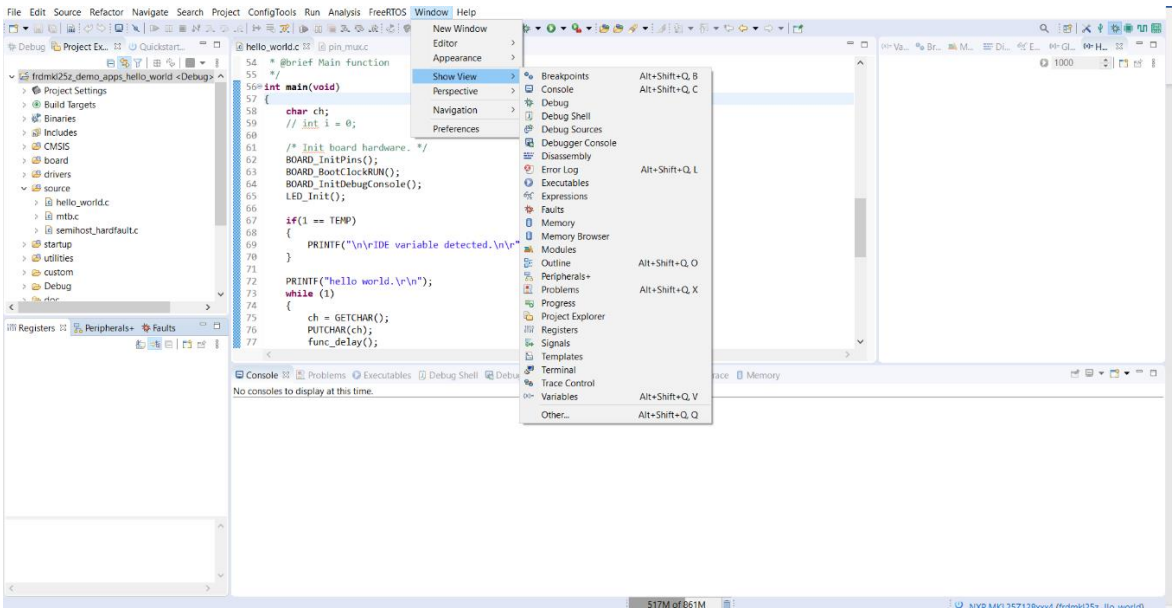
2. **Perspective Windows** are literally what their name suggests. The most common perspectives you would be venturing into are Debug, Develop, Pins and Peripherals.



3. There are certain windows/views that show up only in certain perspectives. The below snaps will convey this much more clearly:



The above is pertaining to the Debug window



And the above is the options available when you are in the Debug perspective.

4. Breakpoints and related buttons

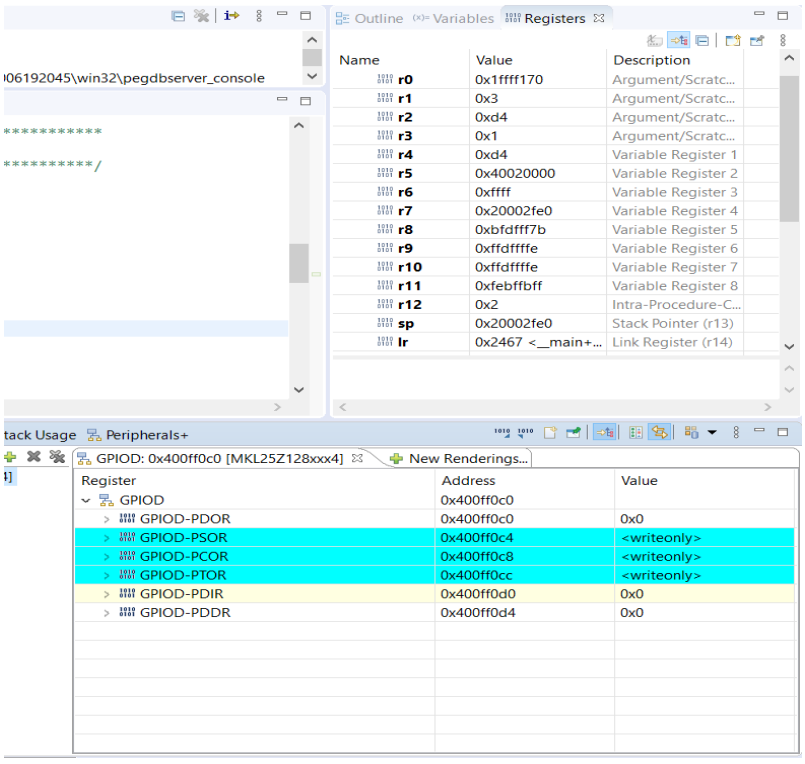
Starting from the left-most end we have the **blue** button, which resembles a striked-out breakpoint. It is pretty much what it symbolically means. This button would disable all the breakpoints that currently present in your code.
The **green** button is the 'resume' button and would resume the execution of the running code, the **pause** button besides it would pause the execution the running code and can be resumed by the resume button mentioned as mentioned earlier.

Next, we have the 'Terminate' button, the **red** square which just abruptly terminates the execution of the application.

The red zig-zag icon placed just besides the terminate icon is the 'Debug Disconnect'. This button disconnects the debugger from your board and ends the running-debugger mode

The next are the debug **stepping icons** namely 'step into', 'step over' and 'step return'. They basically aid you in efficiently debugging your code. Each option has its own significance and you will get more comfortable with it as and when during debugging you feel the need for each scenario.

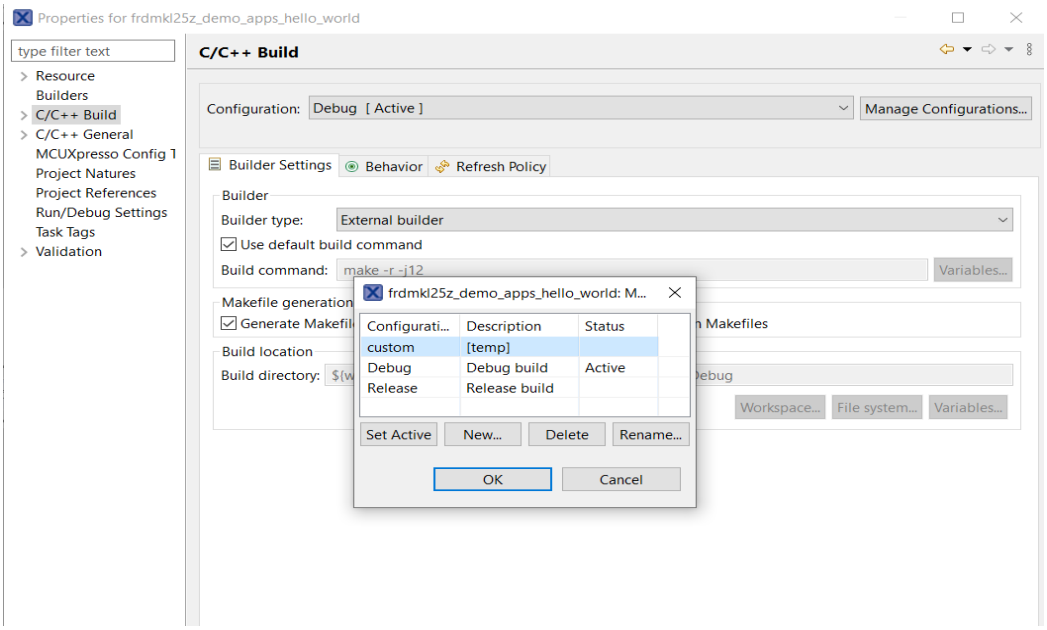
5. Another important tab useful for development and debugging is the peripheral and the registers tabs



Note that there is legible colour change that is done by the IDE to indicate the changes in the same.

6. **Adding build targets**

This can be done by navigating as below from the project properties tab:



Note you can clone the settings from any other existing configurations and then later go ahead on customizing it as desired.

7. Bonus hint for running **objdump:**

On my Windows system the following command successfully displays the dump when run on PowerShell:

.\arm-none-eabi-objdump.exe -S C:\Users\rakma\Documents\MCUXpressoIDE_11.2.0_4120\workspace\frdmkl25z_demo_apps_hello_world\Debug\frdmkl25z_demo_apps_hello_world.axf

You can very well dump this information to a file by appending " > 'filename' " to the above command.
Do explore into various options of the objdump.

In the same manner **arm-none-eabi-gcc** and **arm-none-eabi-gdb** could be run.

So, that is all to it currently for this document, reach out to us for any concerns and doubts.