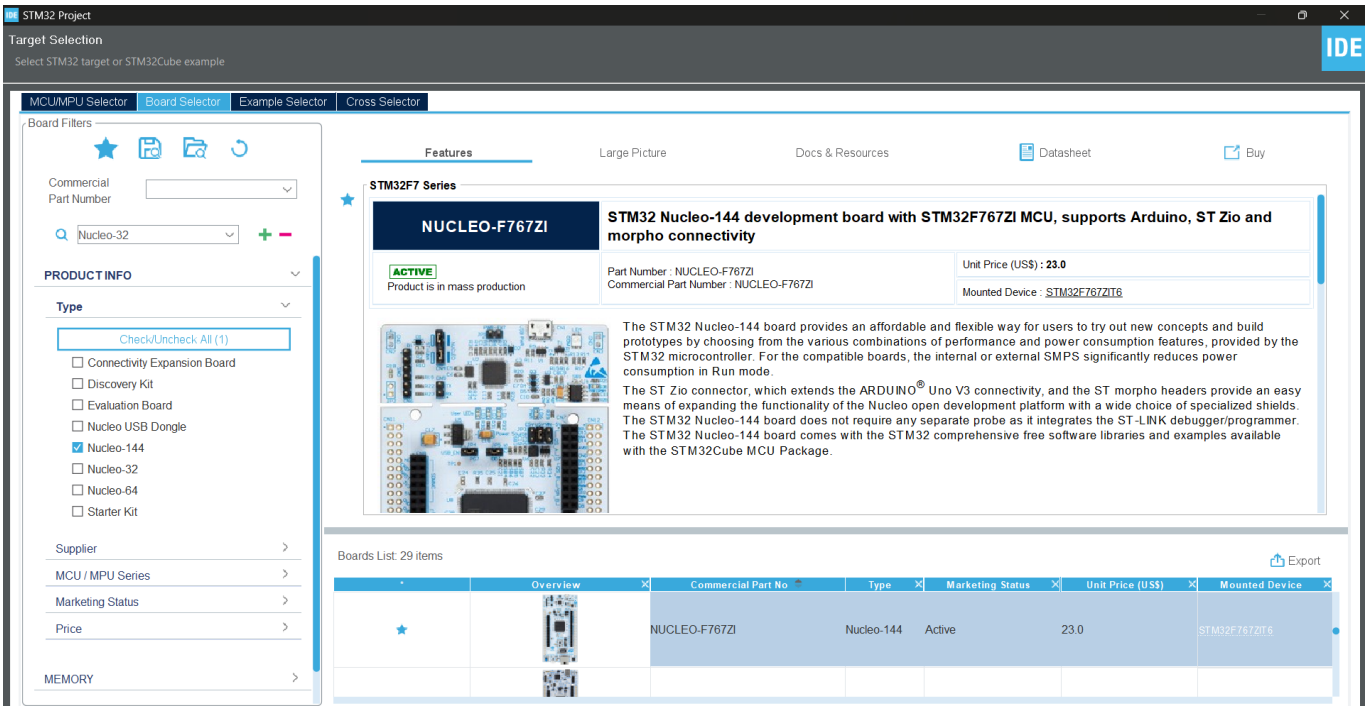
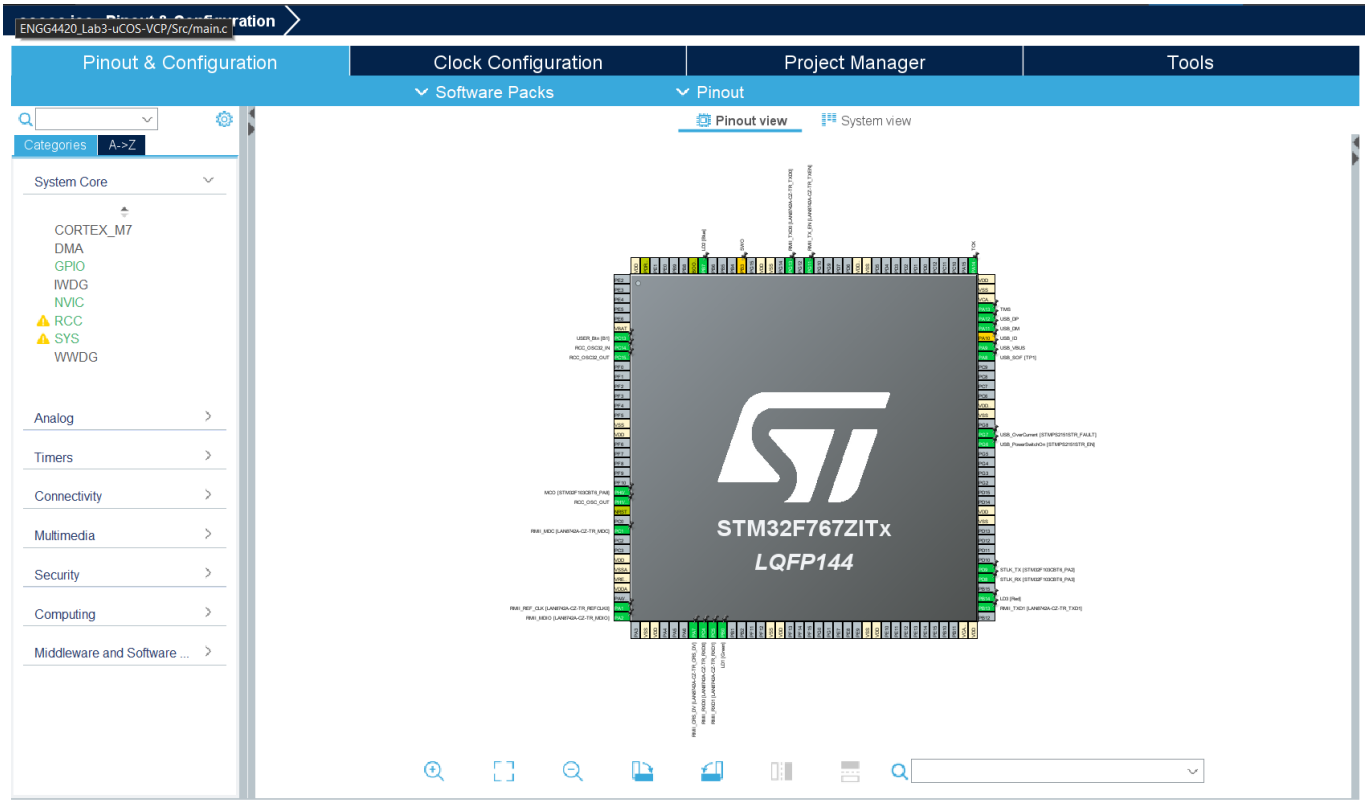
When creating new STM32 project, go to the *Board Selector* tab. If you search for Nucleo-32 and set Type to Nucleo-144, you can scroll the list to find NUCLEO-F767ZI.



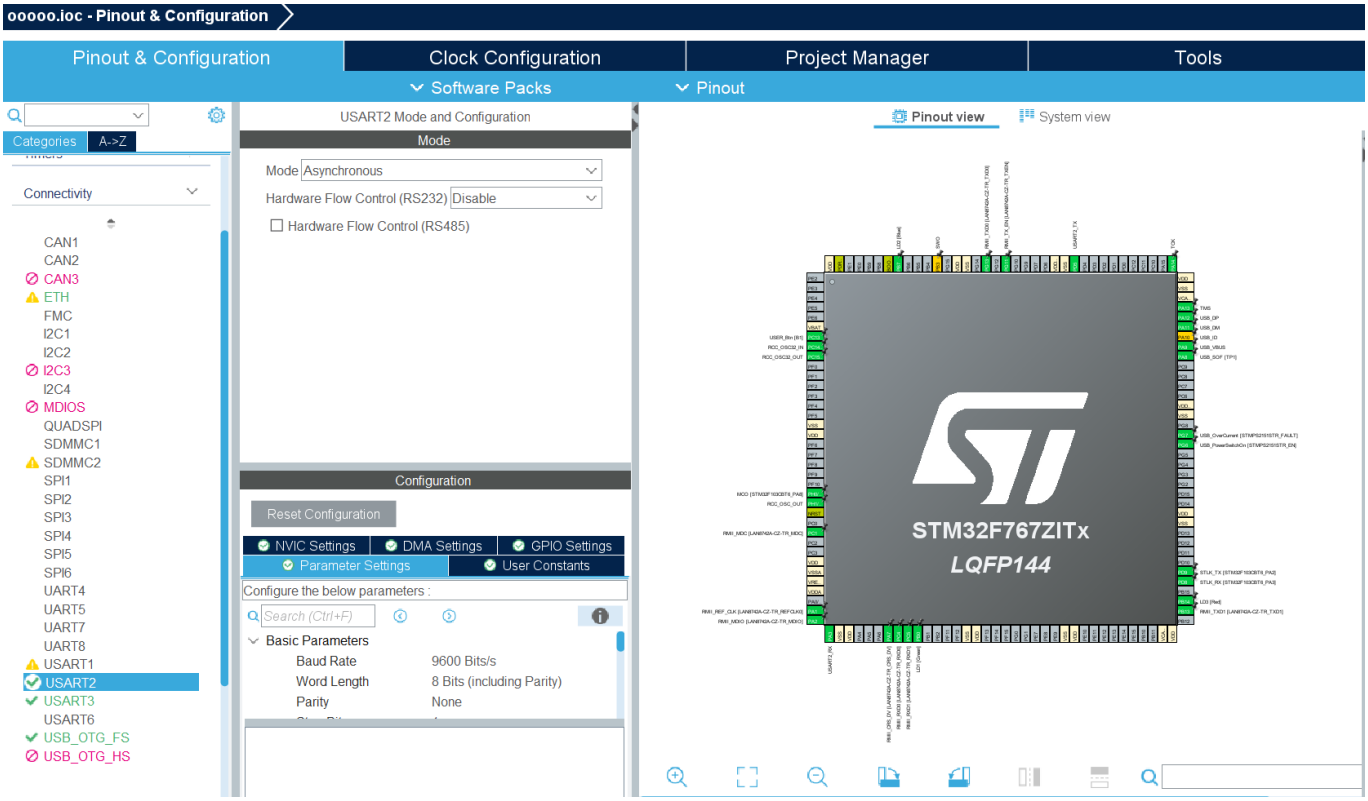
Click Next, give it a Project Name and the click Finish. It may ask if you want to initialize all peripherals with their default mode, just click Yes.

Once it's done, it will open an ioc file that shows the CPU pinout configuration.

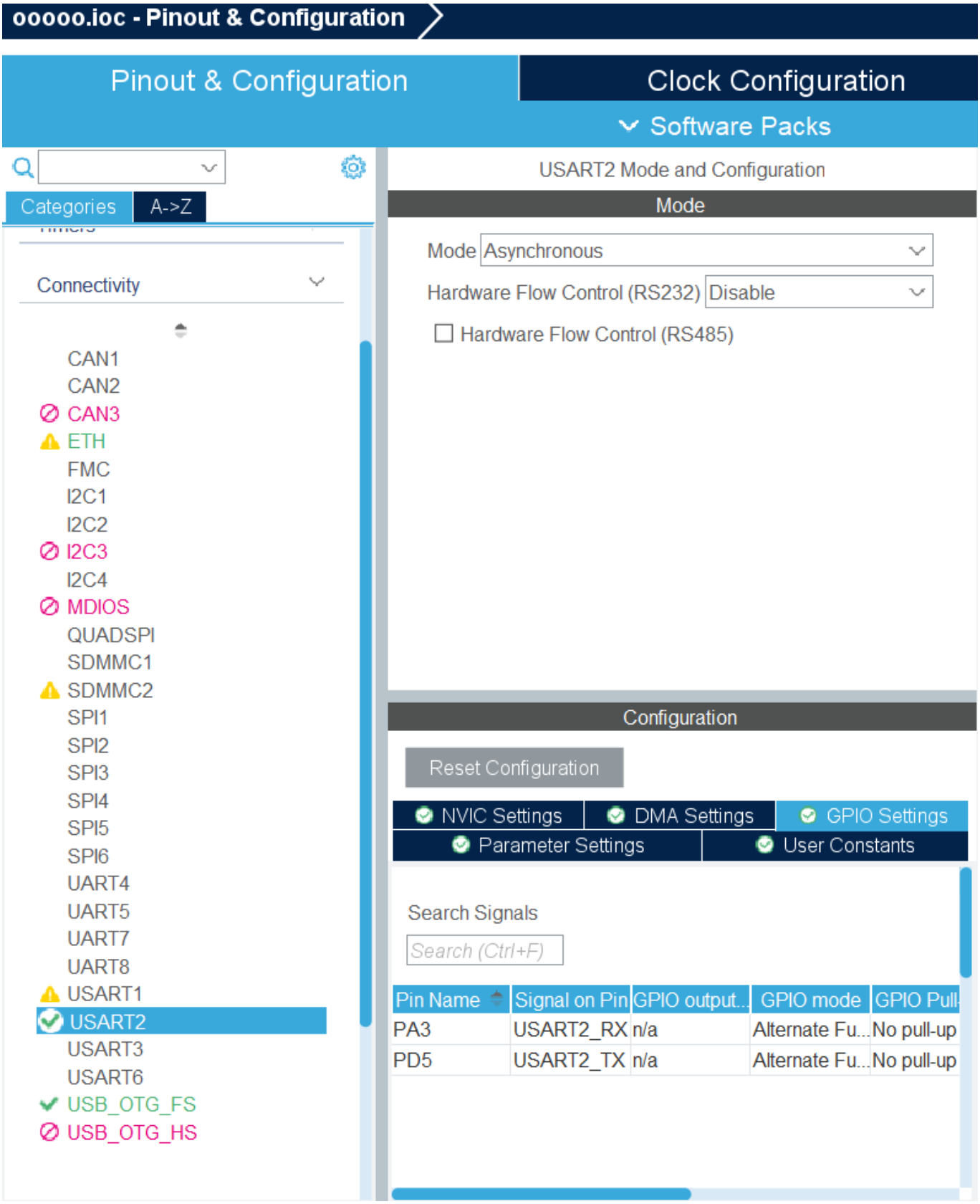


On the left sidebar you can configure different peripherals. The green ones already have some pins configured for them. The Kangaroo requires two pins for serial (Rx and Tx). Under the *Connectivity* category select USART2 or any other USART not in use.

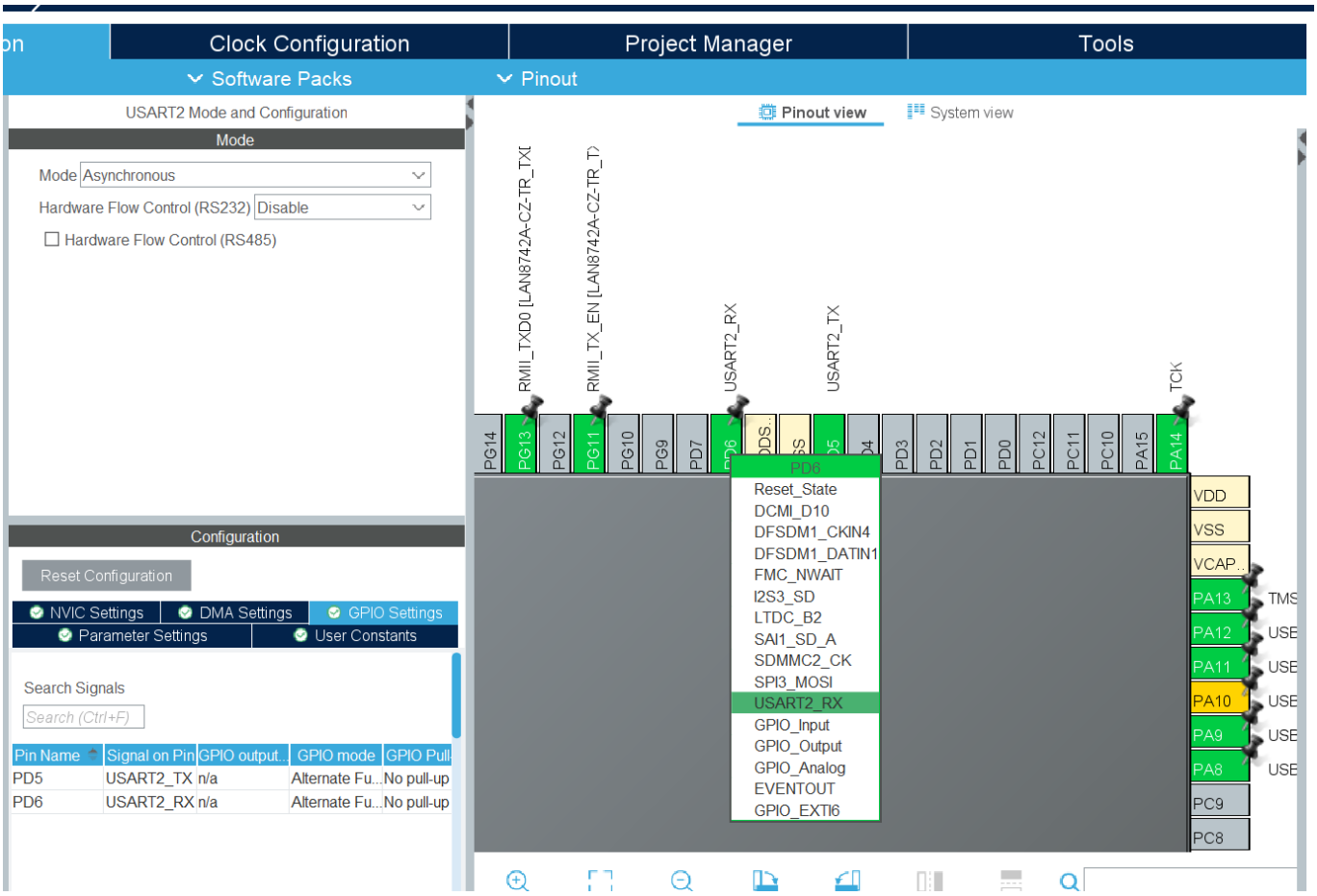
Set it to Asynchronous mode. Under Parameter settings you can change things like Baud Rate to match whatever you're communicating with. I believe the Kangaroo is 9600 Bits/s but you can double check the Kangaroo Manual or Packet Serial Reference at the bottom of the Kangaroo page on Dimension Engineering.



Under the GPIO Settings there are two pins assigned. The mbed website has some pictures showing the pinout of the board which I find easier for locating which pins I need to connect to.

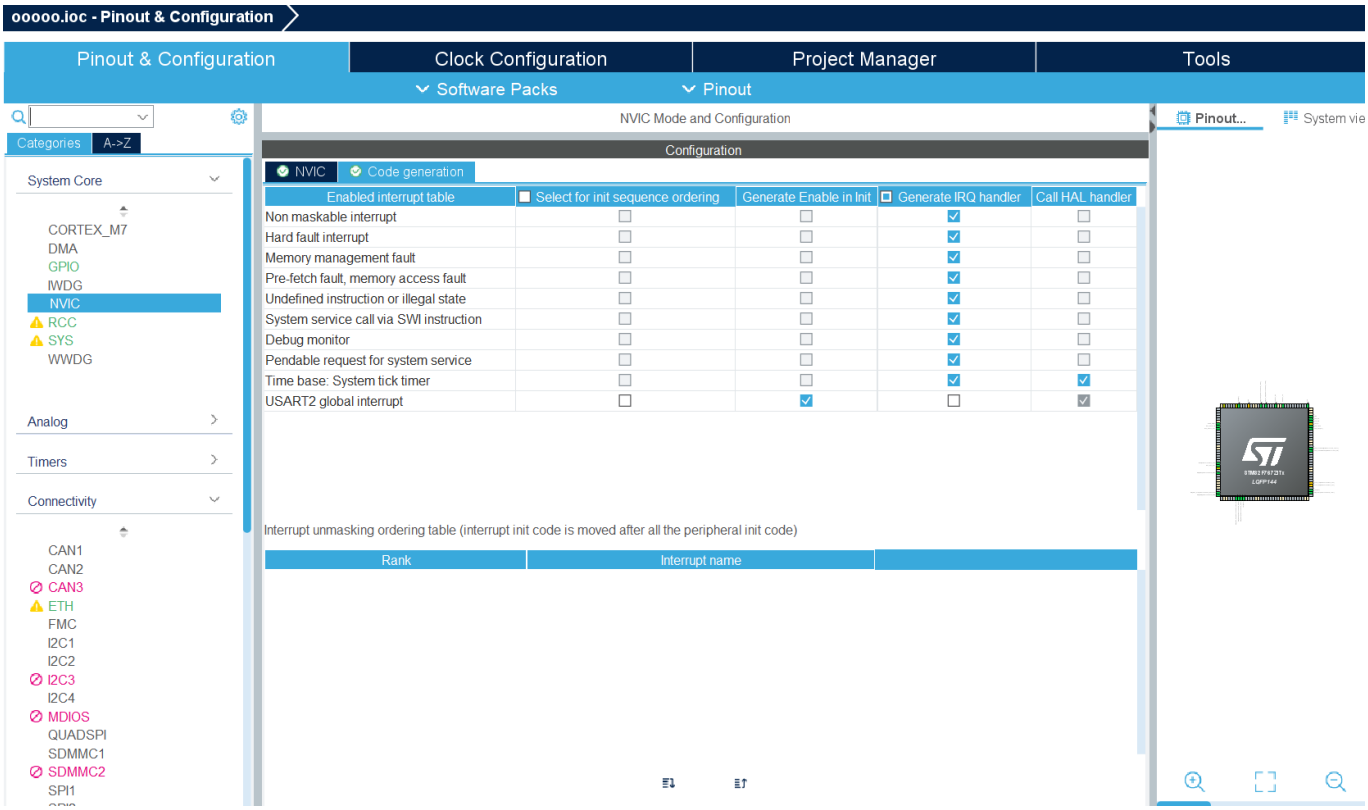


You can also change it to use any of the pins labelled UART_RX or TX on the mbed website pinout. In the pinout view in the middle, find the pin you want to use and click on it to bring down a menu, then select USART2_RX or TX. For example, if I want to use PD6 as my Rx:



Also, go to NVIC settings and enable the global interrupt.

Now, go to NVIC under the *System Core* category and then the Code generation tab. You should see "USART2 global interrupt" (or whatever usart you used). Uncheck *Generate IRQ Handler* because there is already a custom one in the Kangaroo.c file.



Now under Project Manager tab at the top you can change settings if you want but you don't have to. I prefer to go to Code Generator on the left and then check *Generate peripheral initialization as a pair of '.c/.h' files per peripheral*, but it's up to you. Now, when you Ctrl+S to save, say Yes to "Do you want to generate code?" and to the C/C++ perspective question. It will generate the files and initialization code for all the peripherals configured in the .ioc file.

In the main.c you must add `#define KANGAROO_USING_USART2 true` or whatever USART you are using. You can check the #ifdef statements in Kangaroo.c or .h to see what to call them.

There is also a way to include Kangaroo.c and .h without actually adding it to the project but I forget rn so I'll figure it out later if you can't. If you want for now though you could just copy them into the project.

The Kangaroo manual should include more info on how to setup the Kangaroo and Sabertooth but I can also try to go to the lab soon and connect it to the wheel setup or help to connect it.