arm Education

Embedded Systems Essentials with Arm: Getting Started

Module 2

TP (2): Thinking point

Walking down the street, I stopped to watch a team of builders working on a new house. Two were bent over a half-finished wall, patiently spreading mortar with a trowel, adding to the structure brick by brick. One was at the cement mixer, preparing the next batch of mortar. Another was energetically digging a foundation, his spade flying through the air as each shovel-full of earth was removed. The last builder was testing the quality of a completed wall section with a spirit level.

It was interesting to watch the skills and energy of the team at work, and to reflect on the tools that they used so well. They had tools for different jobs, tools to build, to dig, to measure and test. Some tools were mechanized tools, and others were hand tools. And invisible but vitally important was the architect, their design skills, and their plan for the house.

In the first module of this course, we learned about embedded systems and what microcontrollers are. Now we need the tools to develop a working product, just like the builders and their mixer, spade, and spirit level. As embedded system developers, we need to adopt a set of tools, and learn to understand and apply them. We will need to develop both hardware and software, so expect tools for each. Expect tools which, like the architect, allow us to develop and define design; expect other tools which allow us to build the project, including both hardware and software; finally expect tools which allow us to examine and test what we've built, and correct any faults which may have emerged. We know that we're working with Arm products on this course, so it's primarily Arm tools that we will be studying, but remember: the concepts and skills we are learning are transferrable to other microprocessor types, and to other embedded environments.

Think of five different professions that require manual skills and specialized tools: for example, dentist, carpenter, surgeon, chef, and car mechanic. Write down a list of up to five tools that each of these professions use. Make your list of tools as varied as possible. Think about what each tool is used for - planning/designing, implementing, or measuring/testing? At the end of this module, try doing the same - for an embedded systems developer!