Hardware Simulator Tutorial

This program is part of the software suite
that accompanies the book

The Elements of Computing Systems

by Noam Nisan and Shimon Schocken

MIT Press

www.nand2tetris.org

This software was developed by students at the
Efi Arazi School of Computer Science at IDC

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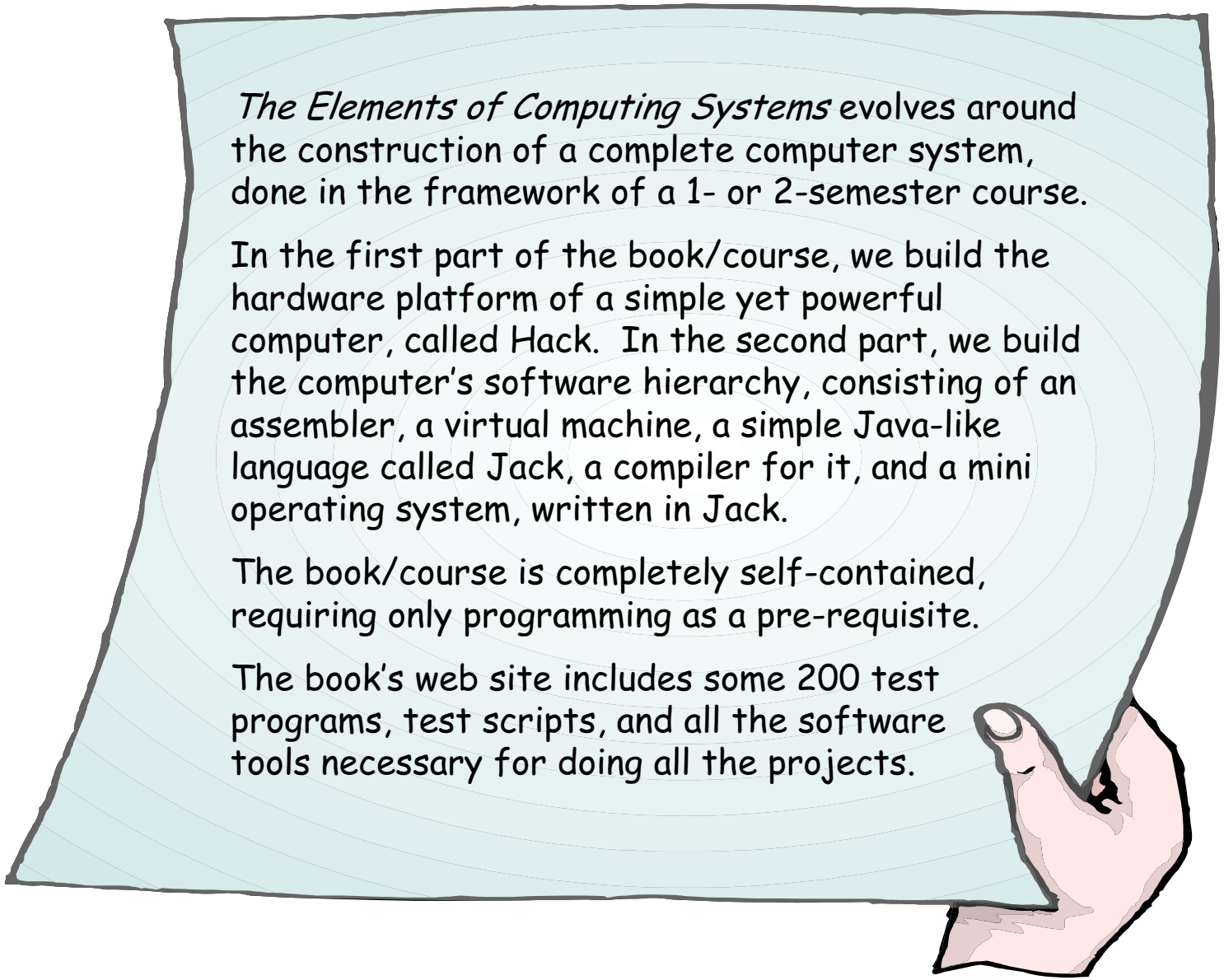
Background



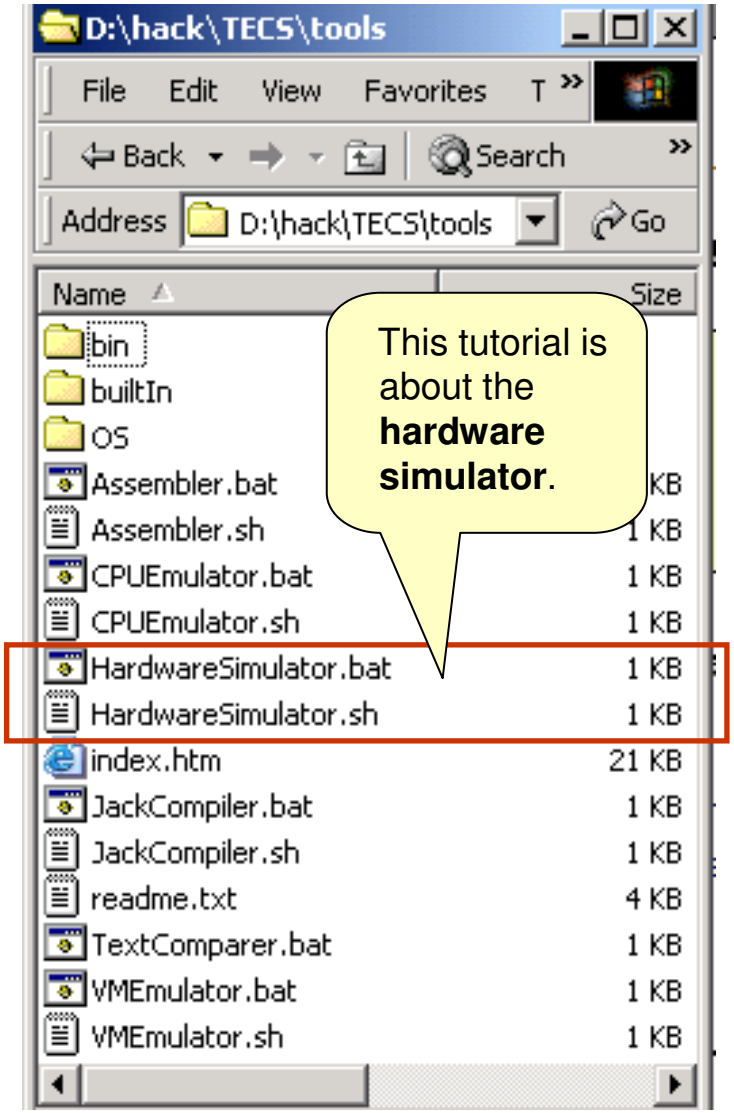
The Elements of Computing Systems evolves around the construction of a complete computer system, done in the framework of a 1- or 2-semester course.

In the first part of the book/course, we build the hardware platform of a simple yet powerful computer, called Hack. In the second part, we build the computer's software hierarchy, consisting of an assembler, a virtual machine, a simple Java-like language called Jack, a compiler for it, and a mini operating system, written in Jack.

The book/course is completely self-contained, requiring only programming as a pre-requisite.

The book's web site includes some 200 test programs, test scripts, and all the software tools necessary for doing all the projects.

The book's software suite



(All the supplied tools are dual-platform: **`Xxx.bat`** starts **`Xxx`** in Windows, and **`Xxx.sh`** starts it in Unix)

Simulators

(**`HardwareSimulator`**, **`CPUEmulator`**, **`VMEmulator`**):

- Used to build hardware platforms and execute programs;
- Supplied by us.

Translators (**`Assembler`**, **`JackCompiler`**):

- Used to translate from high-level to low-level;
- Developed by the students, using the book's specs; Executable solutions supplied by us.

Other

- **`Bin`**: simulators and translators software;
- **`builtIn`**: executable versions of all the logic gates and chips mentioned in the book;
- **`os`**: executable version of the Jack OS;
- **`TextComparer`**: a text comparison utility.