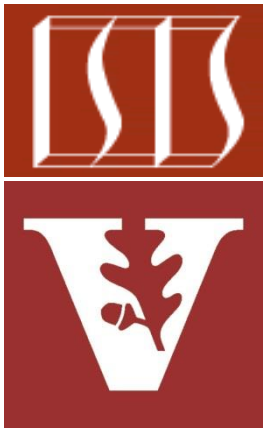
Evolution of Programming Abstraction Mechanisms: C-style Stack Implementations

Douglas C. Schmidt

d.schmidt@vanderbilt.edu

www.dre.vanderbilt.edu/~schmidt



Professor of Computer Science

Institute for Software Integrated Systems

Vanderbilt University
Nashville, Tennessee, USA

Learning Objectives in This Part of the Lesson

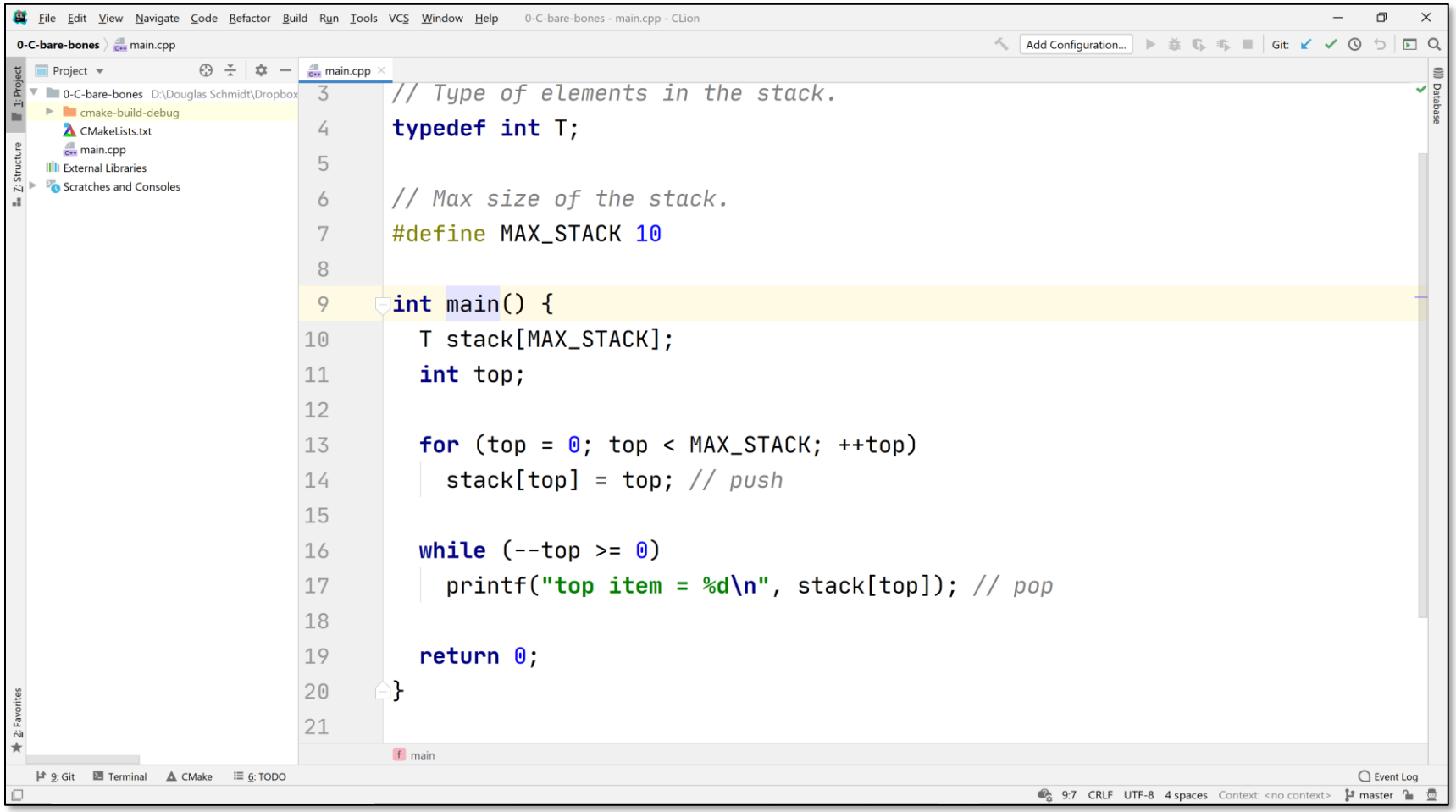
- The rest of this overview examines several alterative methods of implementing a Stack
  - We'll begin with C & evolve up to various C++ implementations

See en.wikipedia.org/wiki/Stack_(abstract_data_type)

C-style Stack Implementations

"Bare-Bones" C Stack Example

- First, consider the "bare-bones" C implementation:



See CPlusPlus/tree/master/overview/capabilities/0-C-bare-bones

Pros of "Bare-Bones" C Stack Example

- Highly "efficient," i.e., no function call overhead!

Cons of "Bare-Bones" C Stack Example

- It's not very abstract, so small mistakes can cause big problems!