CD-ROM accompanying Embedded Control Systems in C/C++

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The CD-ROM accompanying this book contains MATLAB® M-files (MATLAB language source code) and Simulink® block diagram models for designing, implementing and testing control systems.

The top-level directories on the CD-ROM are organized as follows:

- **Design/** The Design directory contains the main MATLAB M-files described in the book for performing control system design and implementation in the C/C++ languages. You may wish to copy these files to a directory on your MATLAB path for future use. The MATLAB Control System Toolbox is required for many of these functions.
  - ✓ *ss_design.m* Design a state space observer-controller and feedforward gain for a SISO plant using the pole placement method.
  - ✓ *optimal_design.m* Design a state space observer-controller and feedforward gain for a SISO plant using the linear quadratic regulator and steady-state Kalman filtering approaches.
  - ✓ *select_poles.m* Determine a set of pole locations for use in pole placement design.
  - ✓ *plot_poles.m* Plot system pole locations along with settling time and damping ratio constraints.
  - ✓ *write_c_model.m* Write a C language implementation of a discrete-time state-space controller using floating-point mathematics.
  - ✓ *write_c_fixpt_model.m* Write a C language implementation of a discrete-time state-space controller using fixed-point mathematics.
  - ✓ *write_cpp_model.m* Write a C++ language implementation of a discrete-time state-space controller using floating-point mathematics.
  - ✓ *write_cpp_fixpt_model.m* Write a C++ language implementation of a discrete-time state-space controller using fixed-point mathematics.
- **Examples/** The Examples directory contains many of the MATLAB M-file and Simulink model examples presented in the book organized by chapter number.
- **Self-Test/** The Self-Test directory contains partial and complete solutions for many of the Self-Test questions given at the end of each chapter.