MATLAB to C with MATLAB Coder

Prerequisites

MATLAB Fundamentals and knowledge of C programming language

Day 1 of 2	
Code Generation with MATLAB Coder	**Objective:** Become familiar with MATLAB Coder and its applications. MATLAB Coder overview Workflow for generating C code from MATLAB code Generating C code Verifying generated code Navigating generated code
Preparing MATLAB Code for Code Generation	**Objective:** Use MATLAB Coder coding standards to write MATLAB code that is ready for code generation. Translating MATLAB code into C code Calling unsupported MATLAB functions Preparing existing MATLAB code Code preparation workflows
Working with Fixed-Size Data	**Objective:** Generate C code from MATLAB code that has fixed-size or constant inputs. Data characteristics overview Specifying fixed-size, top-level inputs Specifying constant top-level inputs
Working with Variable-Size Data	**Objective:** Generate C code from MATLAB code that has variable-size inputs or local data. Specifying variable-size, top-level inputs Specifying variable-size local data Reusing variables

Day 2 of 2	
Working with Global Data, Structures, and Cell Arrays	**Objective:** Generate C code from MATLAB code that contains persistent data, global variables, input structures, or cell arrays. Persistent variables Global variables Working with structures Cell arrays in generated code Passing arguments by reference

Day 2 of 2	
Integrating with External Code	**Objective:** Integrate generated C code from MATLAB Coder with external C code. - Code integration overview - Entry points to generated code - Integrating external C code using MATLAB Coder interface - Integrating external C code using an external IDE - Calling external C functions - Code verification and profiling - Source code debugging
Optimizing Generated Code	**Objective:** Use various options and techniques to optimize generated code. - Code optimization with loop unrolling and null initialization - Function inlining and file partitioning - Configuration objects - Removing unnecessary code - Naming conventions in generated code - Converting a project to a script