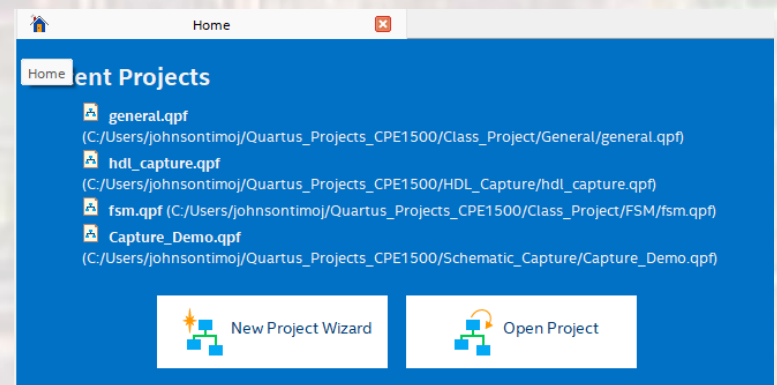# Quartus Project Setup

Last updated 1/21/25

Quartus Project Setup

- Before creating your first Quartus project:

  - Install the Quartus software – see "Quartus Software Setup"

Quartus Project Setup

- Quartus Project File System
  - Quartus collects all the files and setting for a design into what it calls a Project
    - Multiple designs can be stored in a single project
      but
    - for CPE1500 I suggest you create a new project for each design
  - A single design may have more than one Block inside it
    - Consequently, a single project may have more than one block stored in it
    - Quartus maintains a concept of a "top level block" to track which block is currently being worked on in the project
  - When you start Quartus it will ask you to open a new or existing project
    - It also lists 3-4 recent projects to choose from
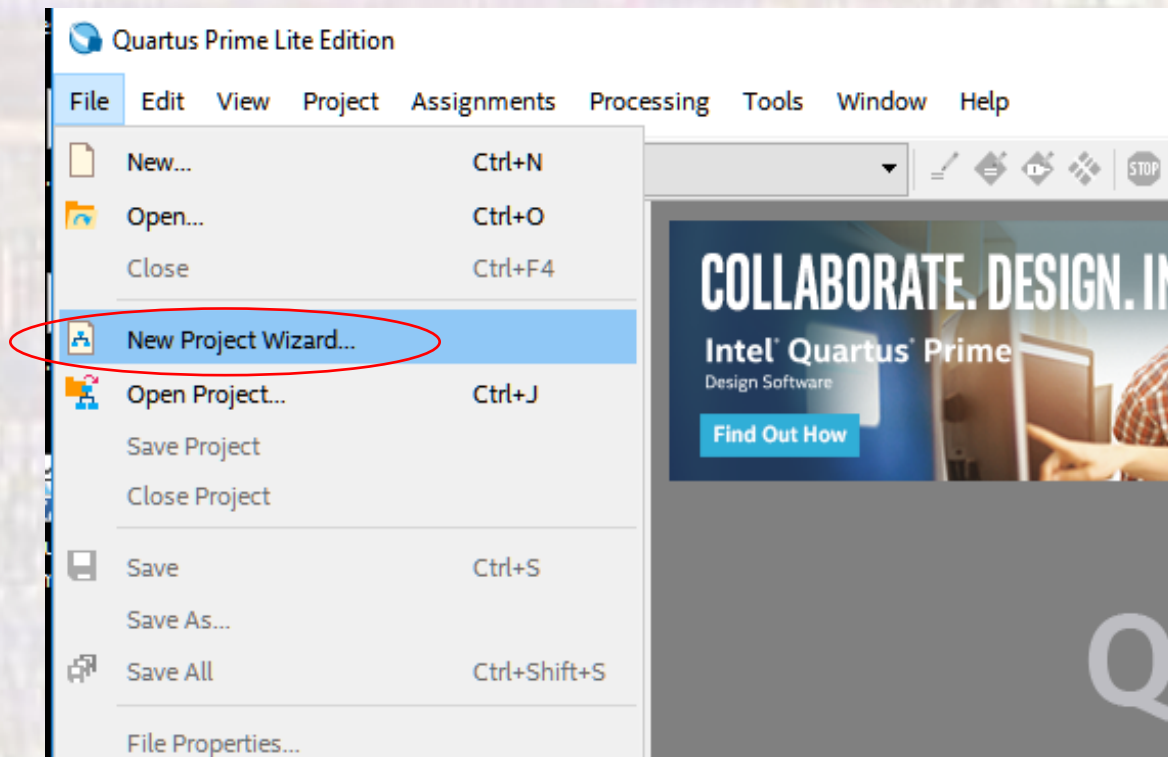
Quartus Project Setup

- Quartus Project File System
  - Quartus was, and continues to be, developed for Linux based computer systems
    - Linux systems are commonly used for sophisticated engineering programs
    - Linux systems do not allow spaces in file paths or file names
      - Use _ (underscore) instead
  - Quartus support for Windows 11 is very buggy
    - We must use version 18.1 for now (Quartus is beyond 23.0)
  - Quartus and OneDrive do not work well together
    - At MSOE OneDrive has been configured by IT to backup most of your personal files
      - Quartus will fail if OneDrive tries to back it up (file access issues)
  - You must create a folder to store your Quartus Projects in a location that OneDrive will not back up

Quartus Project Setup

- Quartus Project File System
  - To create a OneDrive/Quartus safe location for your projects
    - File Explorer → This PC → Windows(C:) → Users → Your_User_Name
    - rt-click → New → Folder and enter the folder name CPE1500_Quartus_Projects

  - To create a new project – first create a new folder in your CPE1500_Quartus_Projects folder
    - Use appropriate names
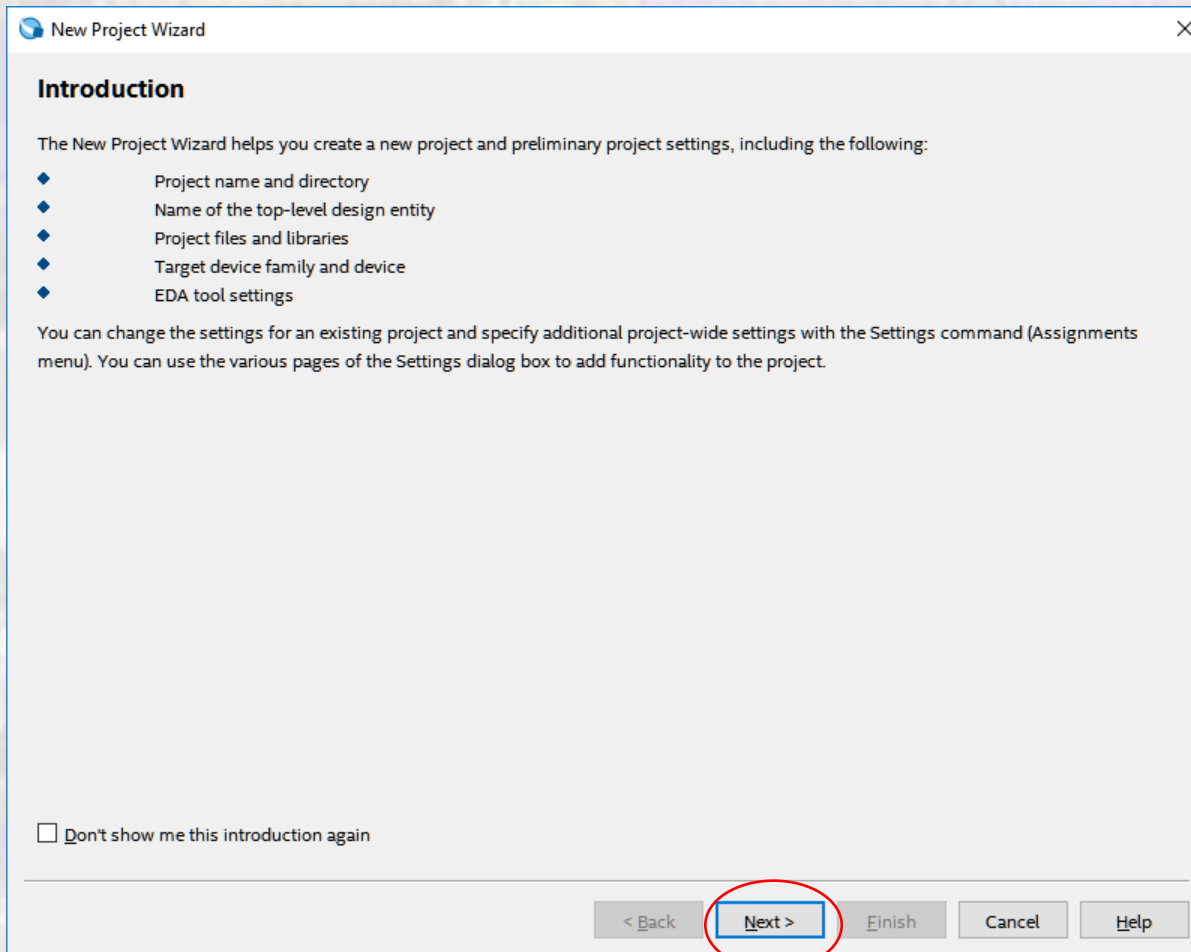   - Lab2_Project
      - HW11_Vending_Machine

Quartus Project Setup

- Quartus Prime – Project Setup

  - Start the Quartus software
  - Under File – select New Project Wizard …

Quartus Project Setup

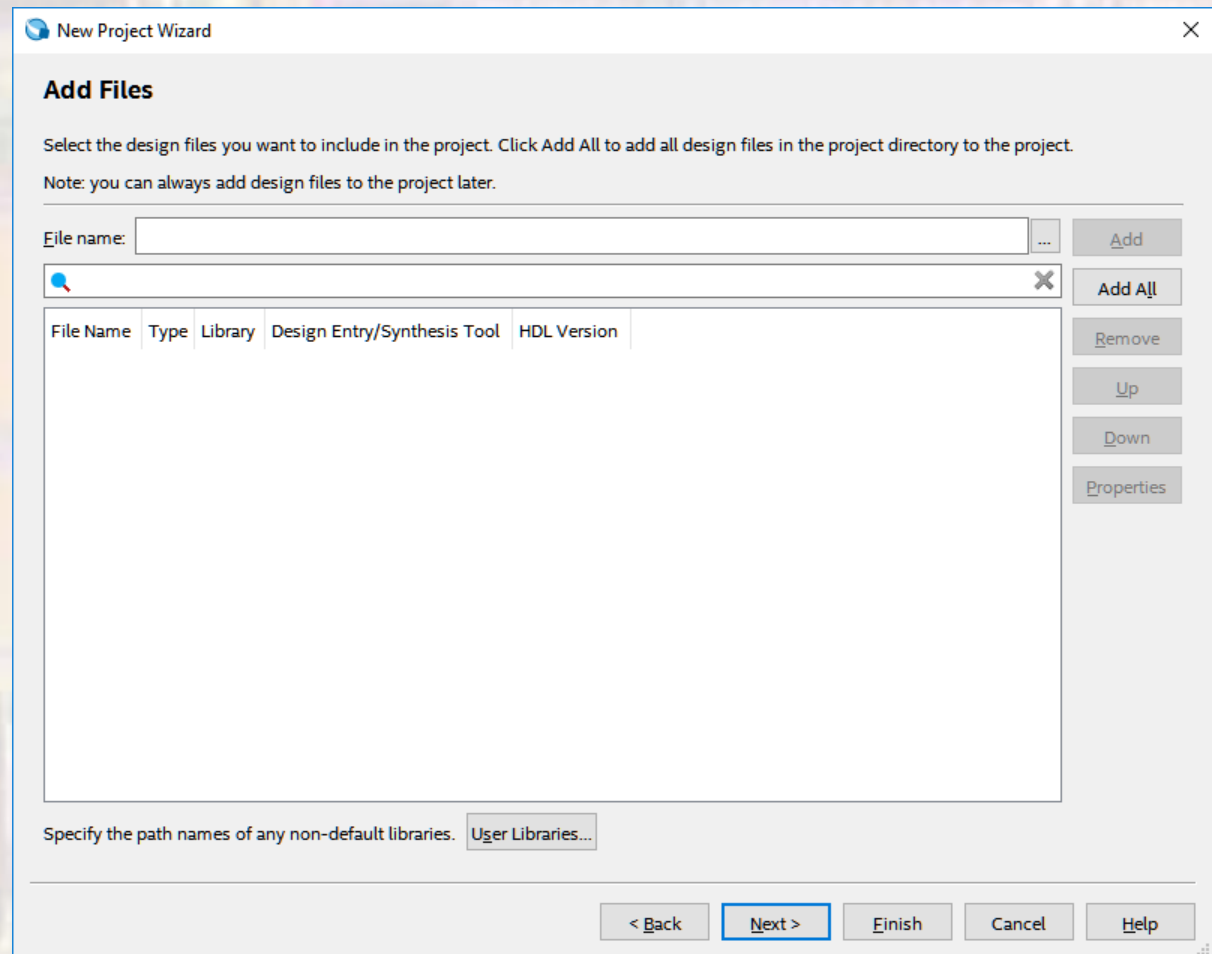- Quartus Prime – Project Setup
  - Select Next

Quartus Project Setup

- Quartus Prime – Project Setup
  - Select your project directory
  - Name your project
  - Your project name and top level entity name should be the same

  New Project Wizard

  Directory, Name, Top-Level Entity

  What is the working directory for this project?

  | C:/ | • • • | CPE1500_Quartus_Projects/MyFirstCounter |

  What is the name of this project?

  MyFirstCounter

  What is the name of the top-level design entity for this project? This name is case s
  design file.

  MyFirstCounter

  Use Existing Project Settings...

  - Click Next

Quartus Project Setup

- Quartus Prime – Project Setup
  - Select Empty project
  - Click Next
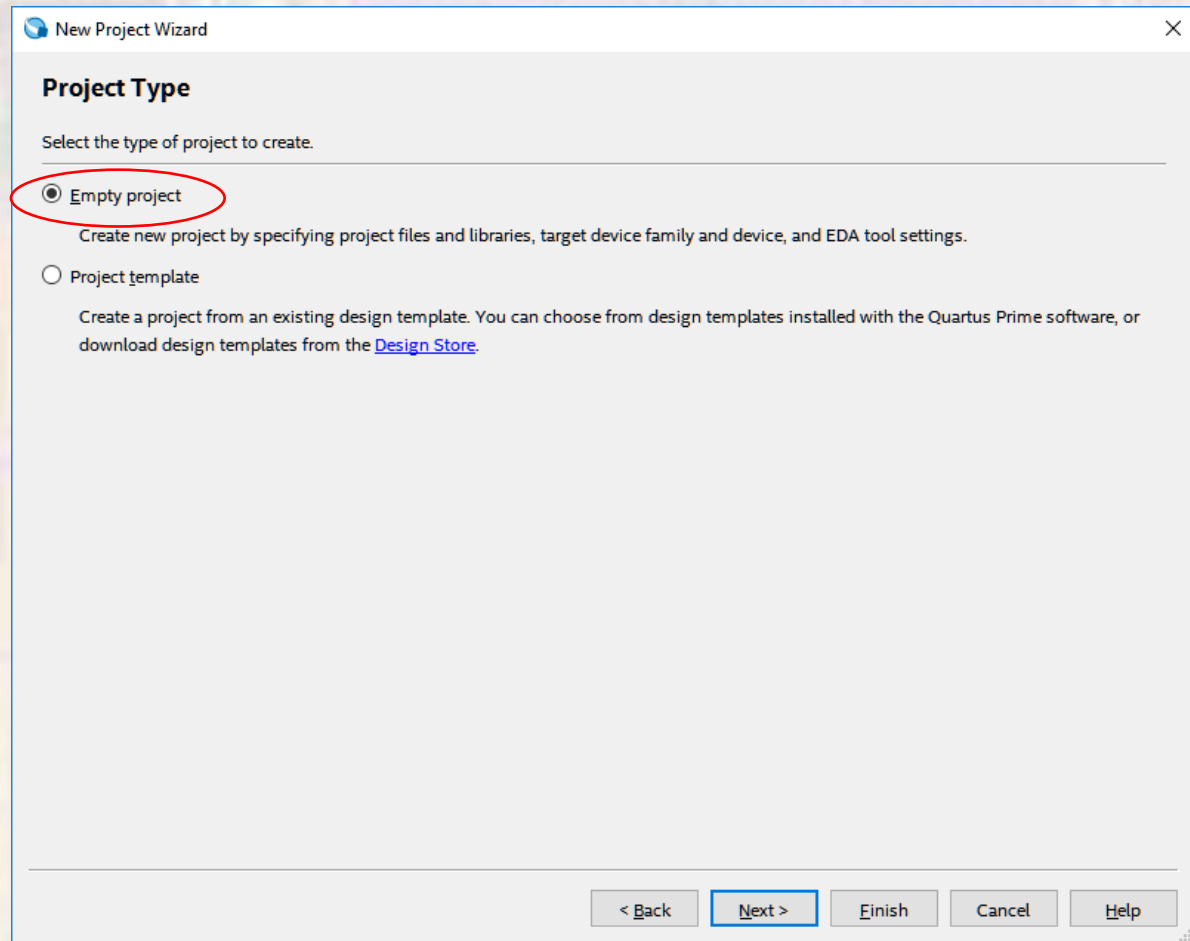
Quartus Project Setup

- Quartus Prime – Project Setup
  - We will not add any files right now
  - Click Next

Quartus Project Setup

- Quartus Prime – Project Setup
  - Select Max 10 (DA/DF/DC/SA/SC) under Family
  - Select Max 10 DA under Device
  - Scroll down to 10M50DAF484C7G under Available devices
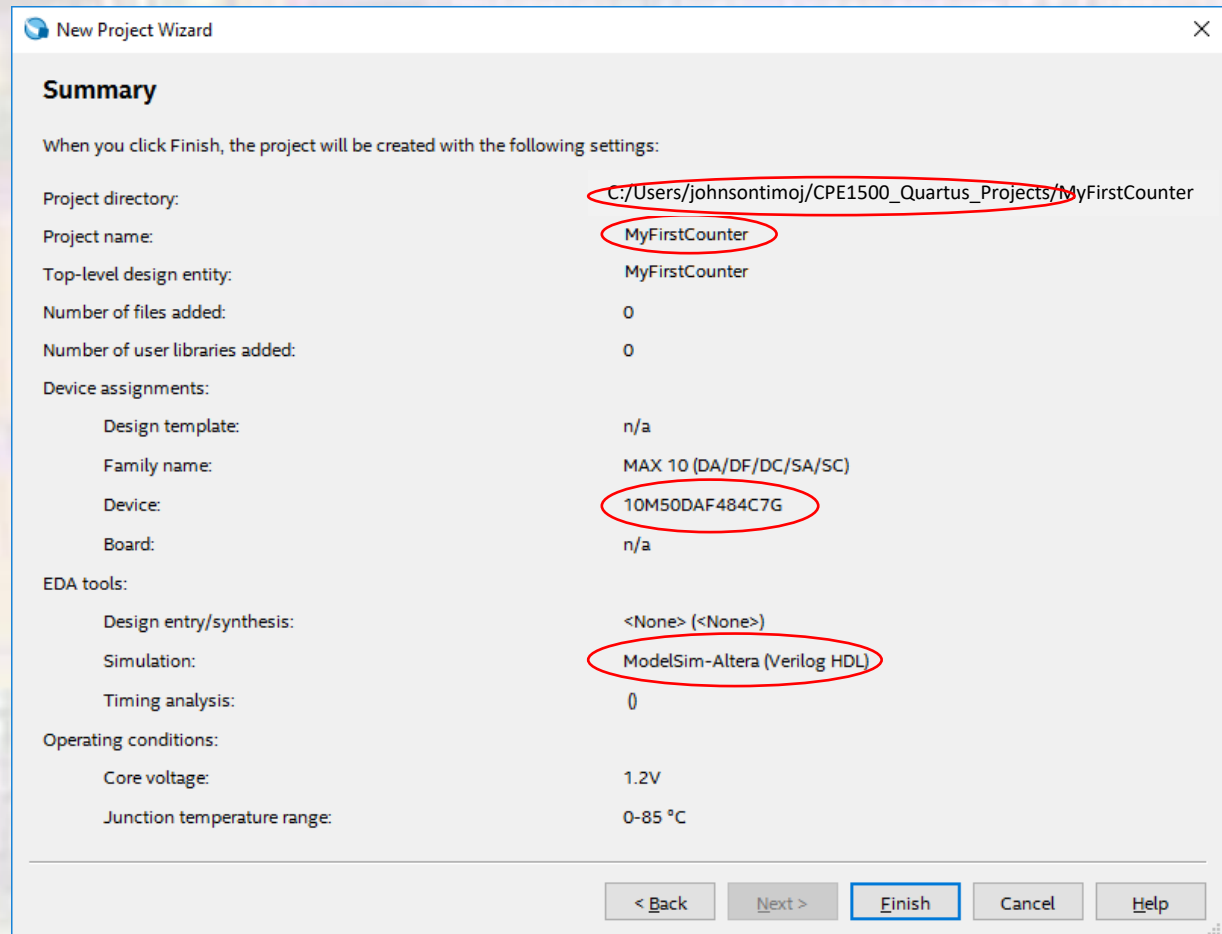 - Click Next

Quartus Project Setup

- Quartus Prime – Project Setup
  - Under simulation – select ModelSim-Altera and VHDL
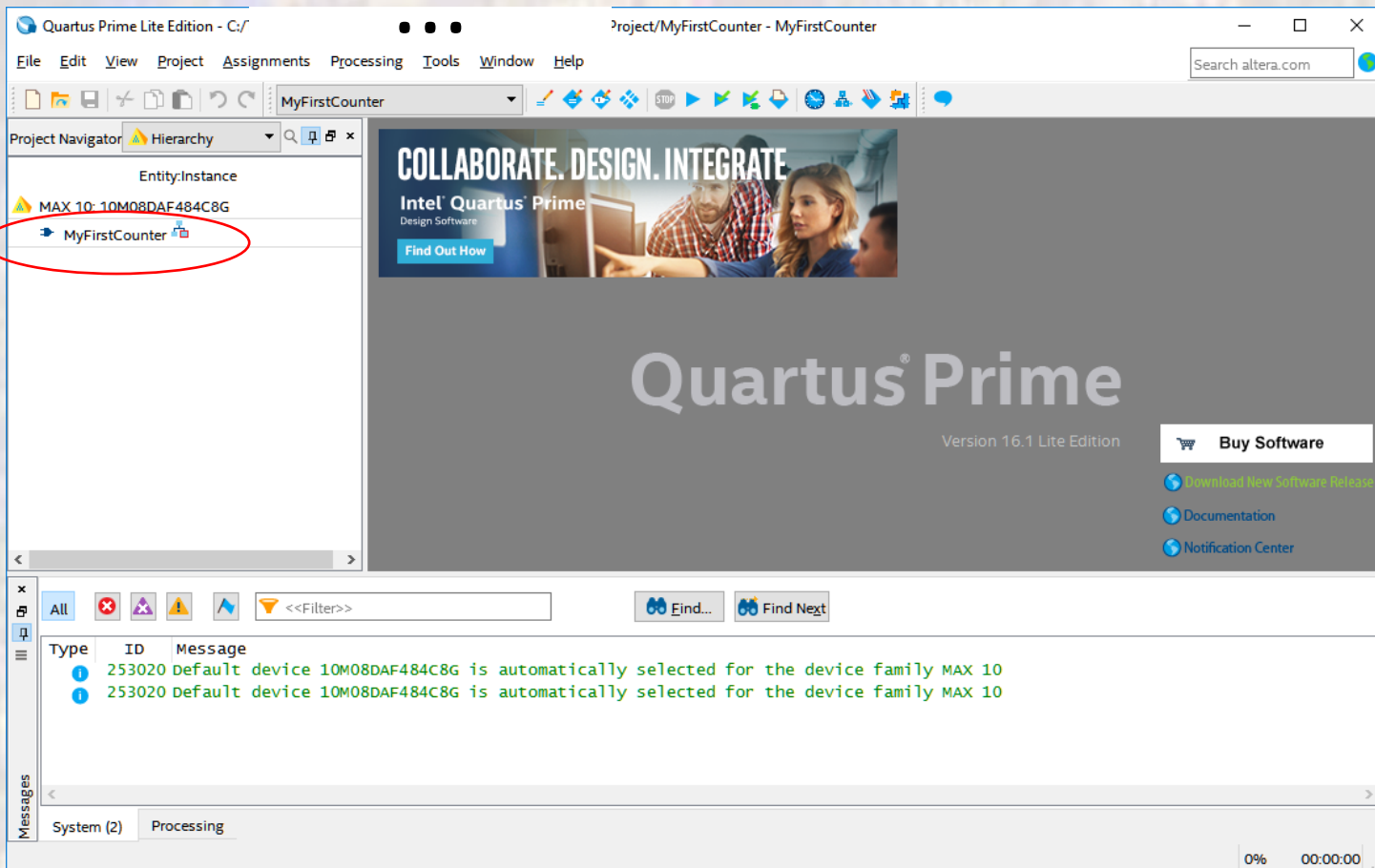 - Click Next
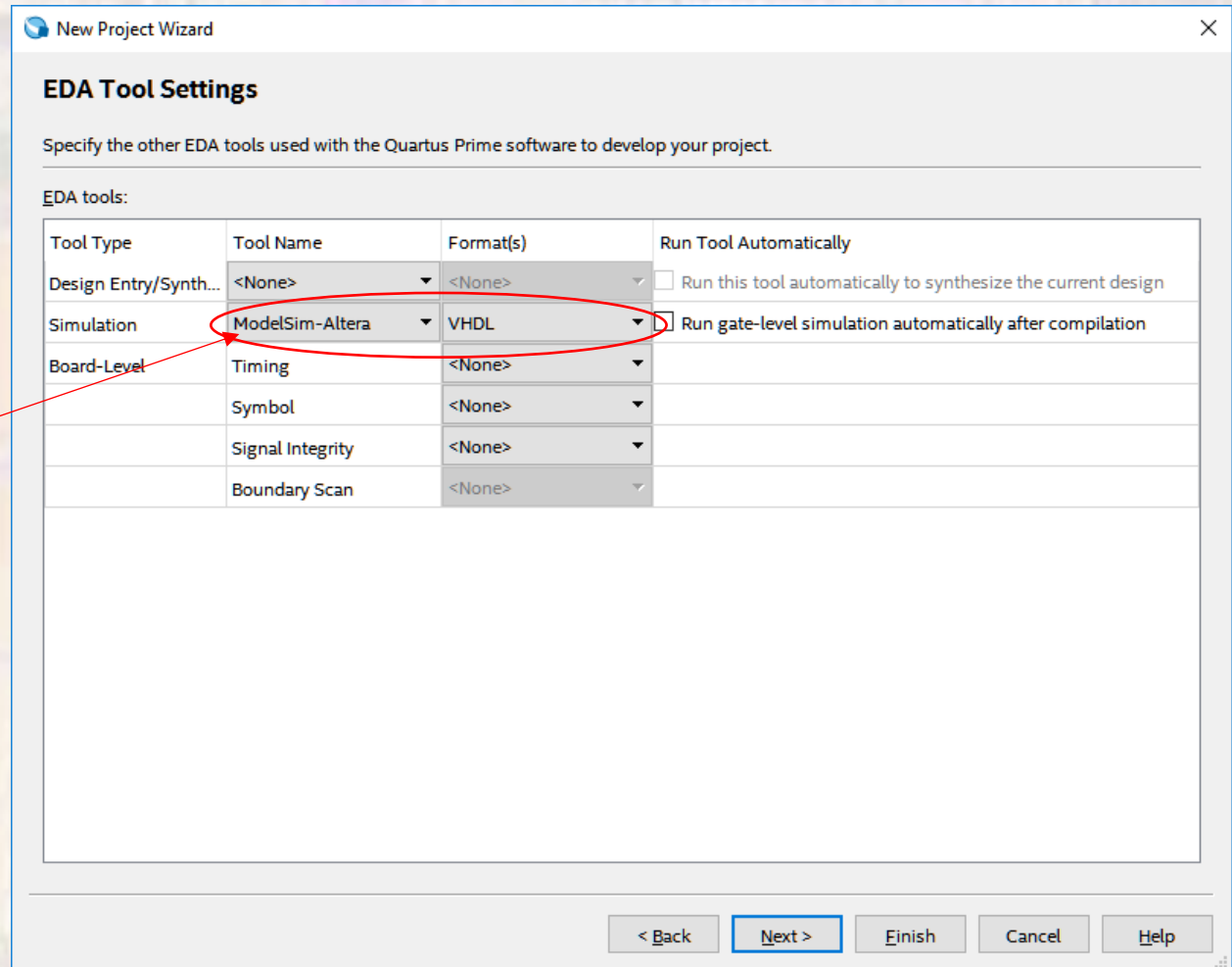
Note: ModelSim-Altera
not ModelSim

Quartus Project Setup

- Quartus Prime – Project Setup
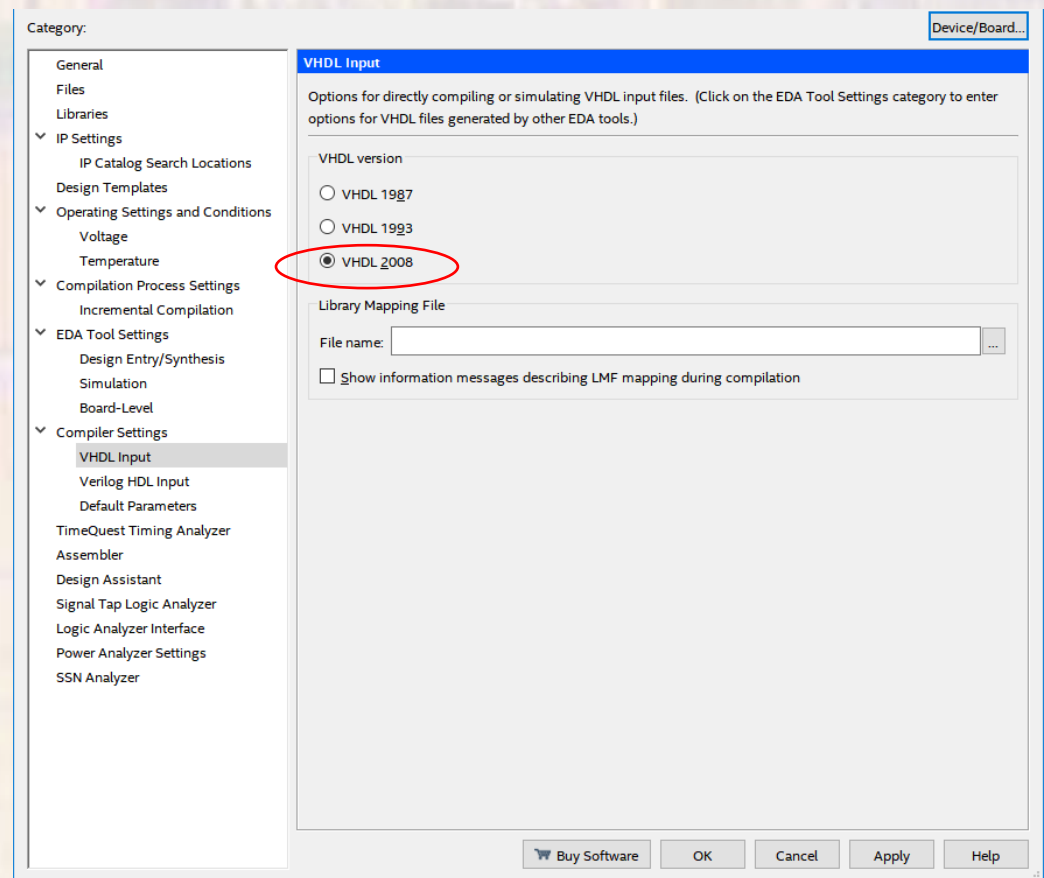 - You will get a summary window
  - Click Finish

Quartus Project Setup

- Quartus Prime – Project Setup
  - Your project will now appear in the Project Navigator window

Quartus Project Setup

- Quartus Prime – Project Setup
  - We will be using the 2008 version of VHDL
  - Assignments -> Settings -> Compiler Settings -> VHDL Input
    - Select VHDL 2008

Quartus Project Setup

- Quartus Prime – Project Setup

  - Your project is ready to use