

Quartus Project Setup

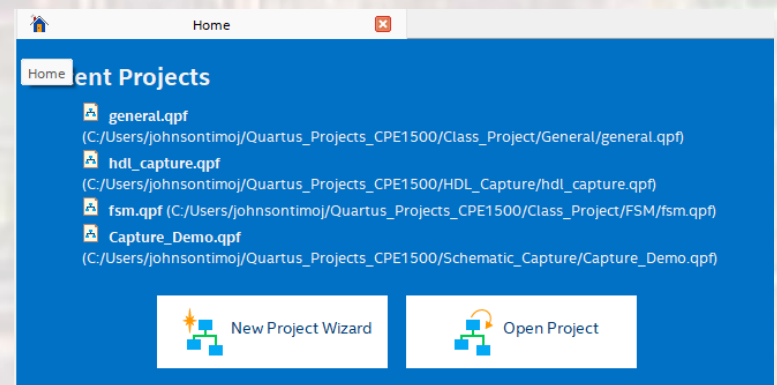
Last updated 1/21/25

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

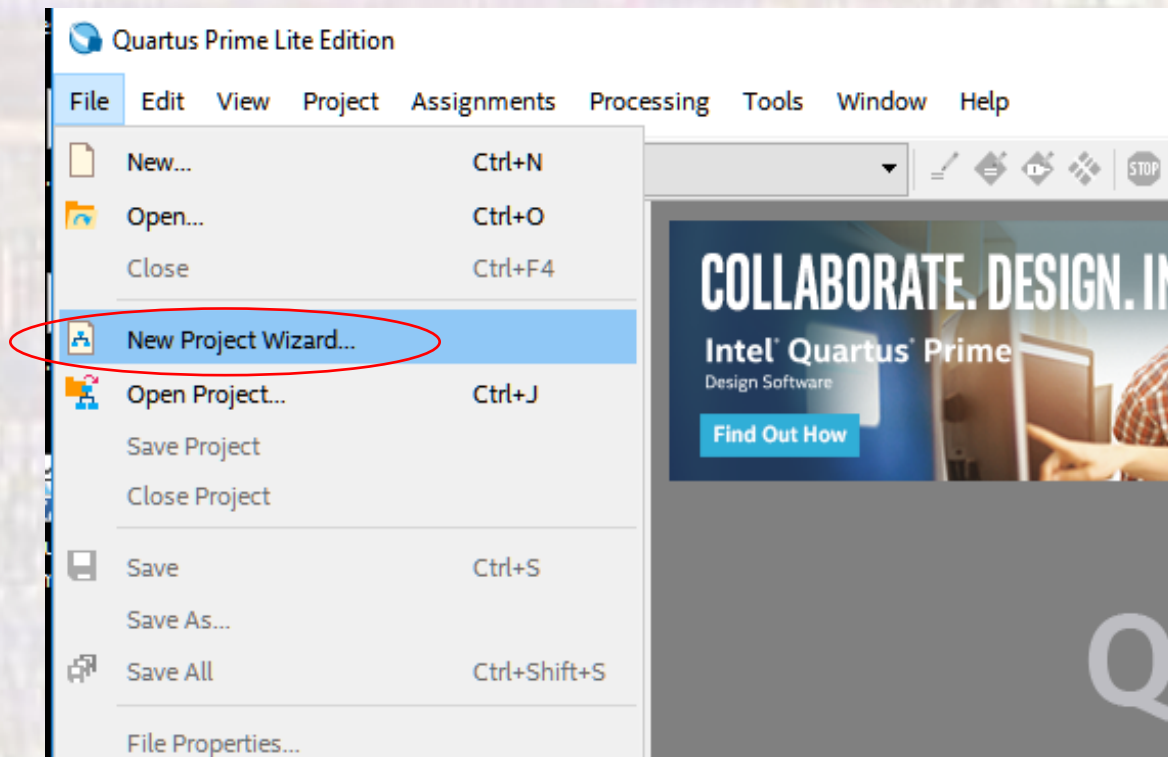
- Quartus Project File System
 - Quartus was, and continues to be, developed for Linux based computer systems
 - Linux systems are commonly used for sophisticated engineering programs
 - **Linux systems do not allow spaces in file paths or file names**
 - Use `_` (**underscore**) instead
 - Quartus support 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

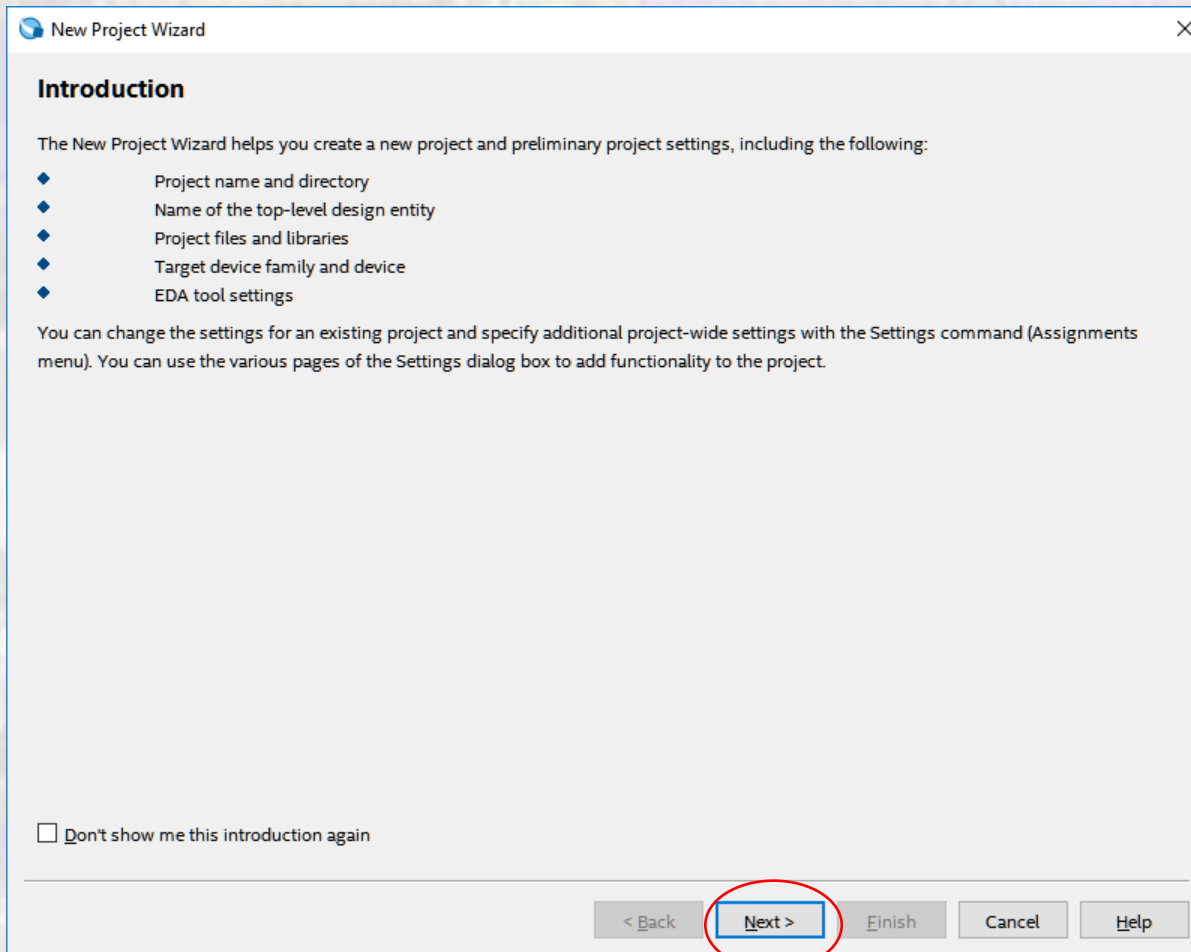
Quartus Project Setup

- 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 sensitive and must match the top-level design file.

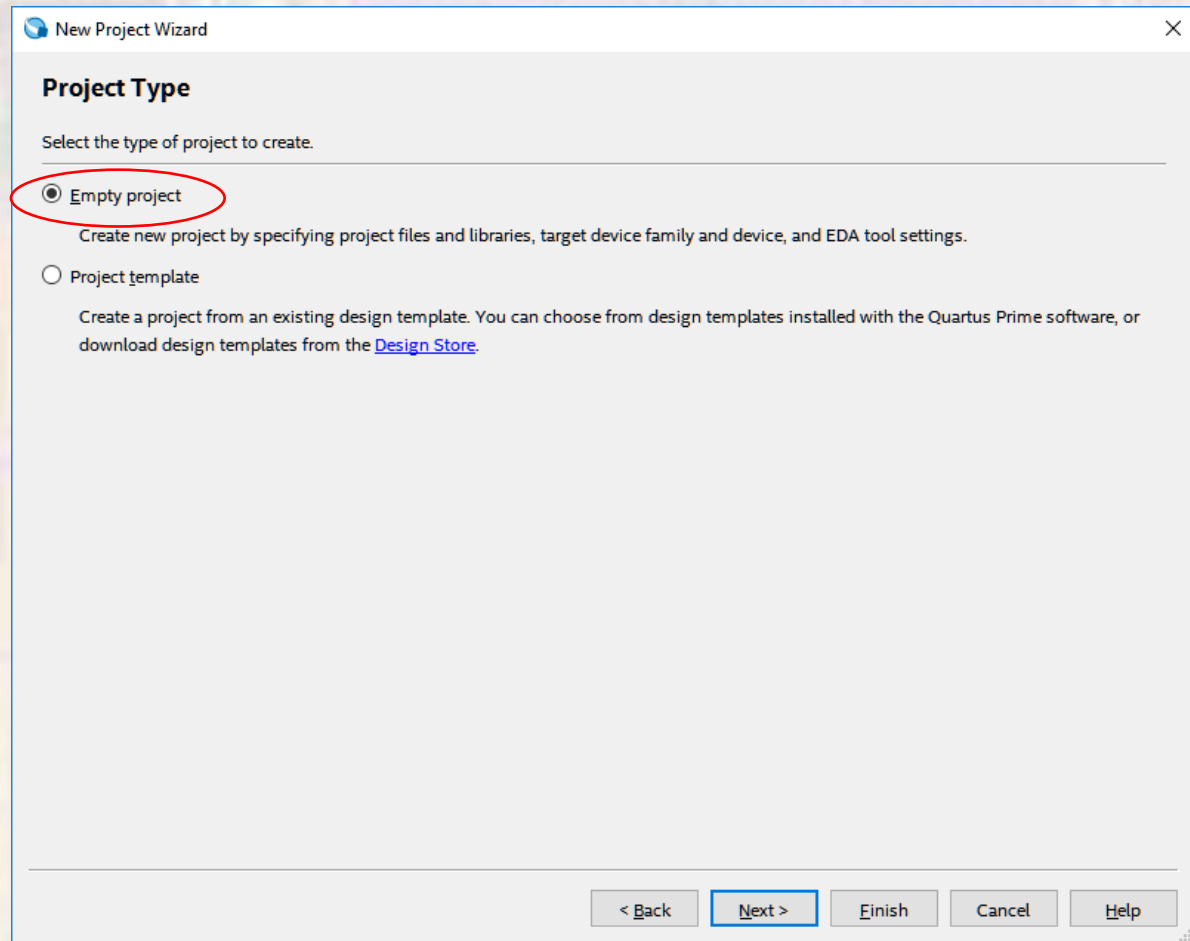
MyFirstCounter

Use Existing Project Settings...

- Click **Next**

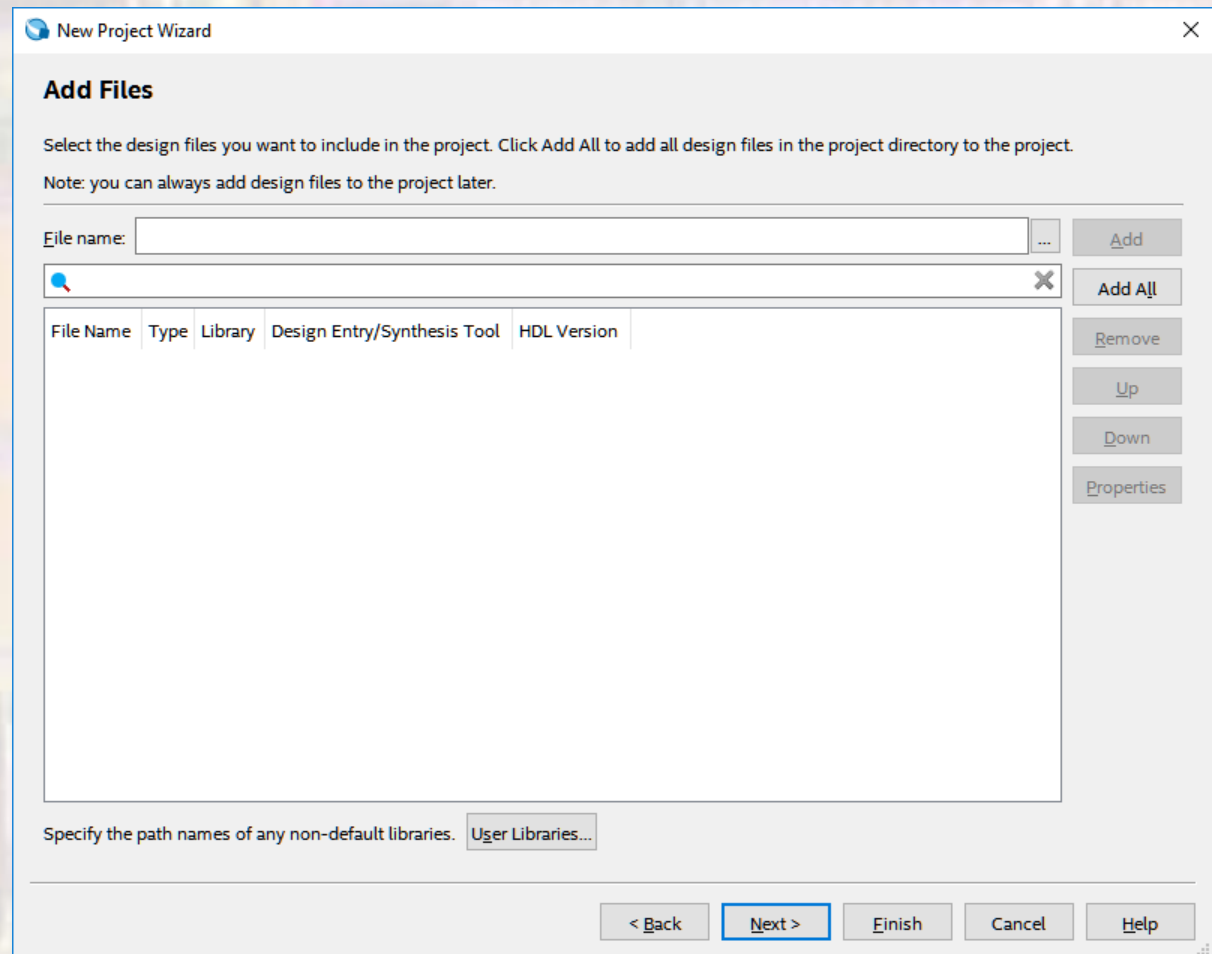
Quartus Project Setup

- 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**

New Project Wizard

Family, Device & Board Settings

Device Board

Select the family and device you want to target for compilation.
You can install additional device support with the Install Devices command on the Tools menu.

To determine the version of the Quartus Prime software in which your target device is supported, refer to the [Device Support List](#) webpage.

Device family

Family: MAX 10 (DA/DF/DC/SA/SC)

Device: MAX 10 DA

Target device

Auto device selected by the Fitter

Specific device selected in 'Available devices' list

Other: n/a

Show in 'Available devices' list

Package: Any

Pin count: Any

Core speed grade: Any

Name filter:

Show advanced devices

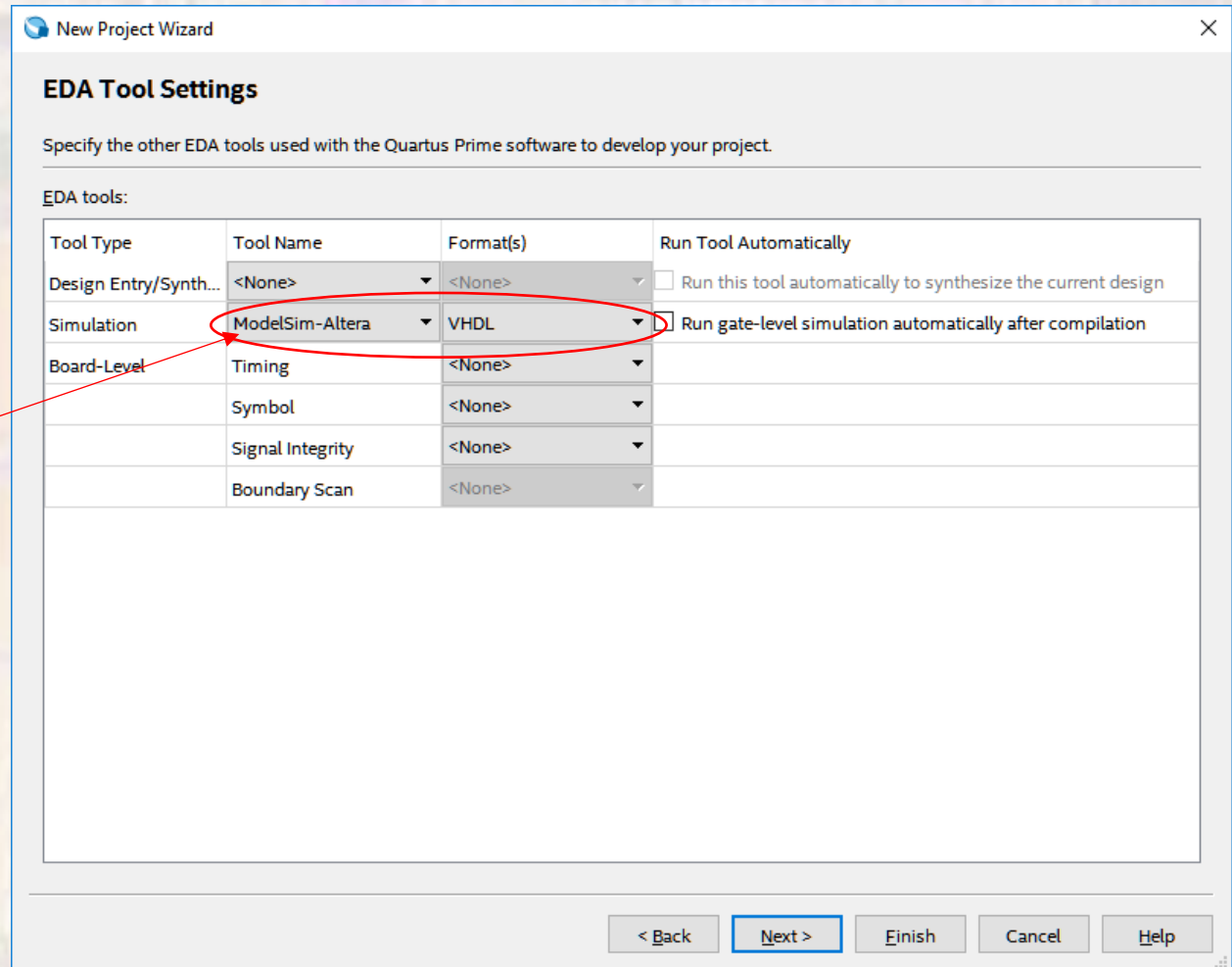
Available devices:

Name	Core Voltage	LEs	Total I/Os	GPIOs	Memory Bits	Embedded multiplier s
10M50DAF484C7G	1.2V	49760	360	360	1677312	288

< Back Next > Finish Cancel Help

Quartus Project Setup

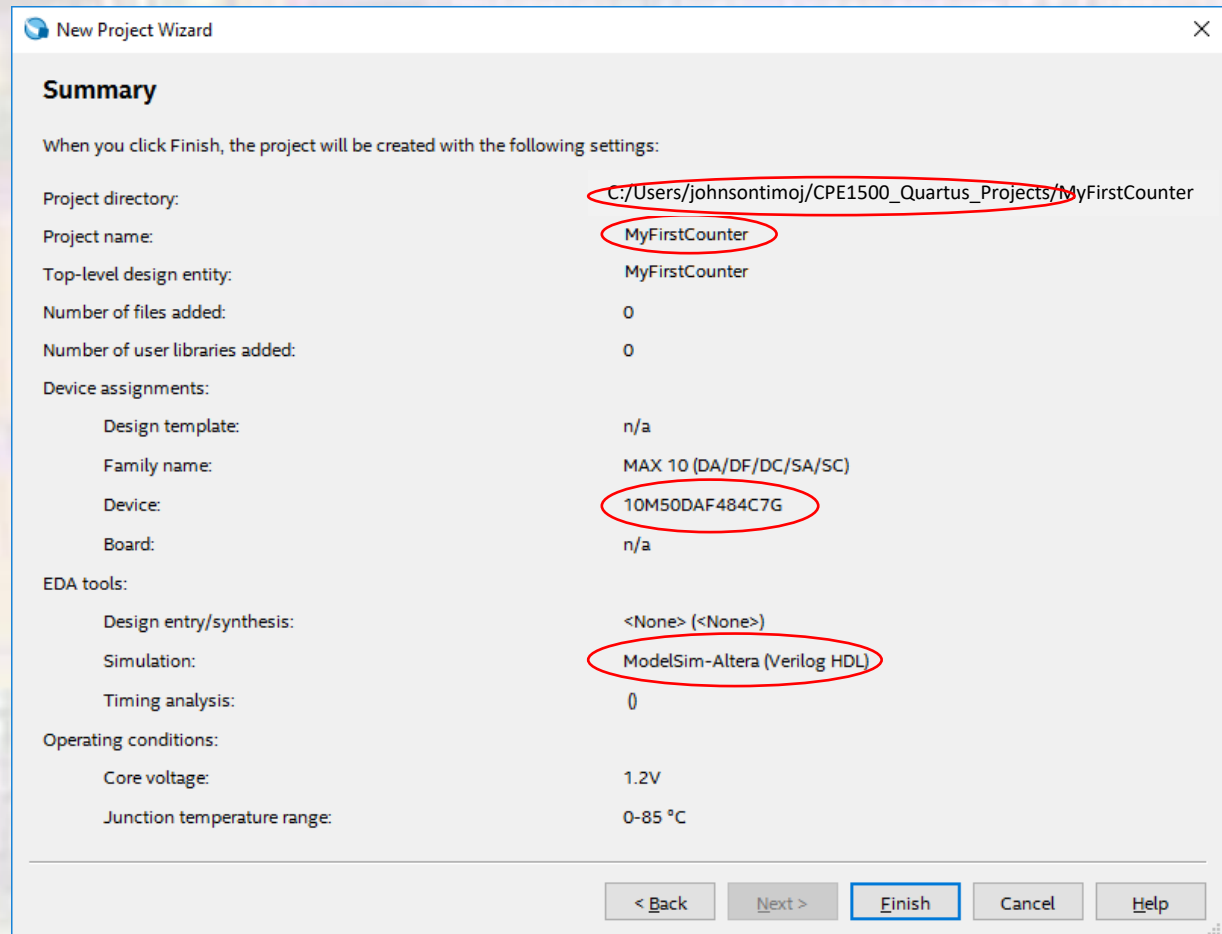
- Quartus Prime – Project Setup
 - Under simulation – select **ModelSim-Altera** and **VHDL**
 - Click **Next**



Note: ModelSim-Altera
not ModelSim

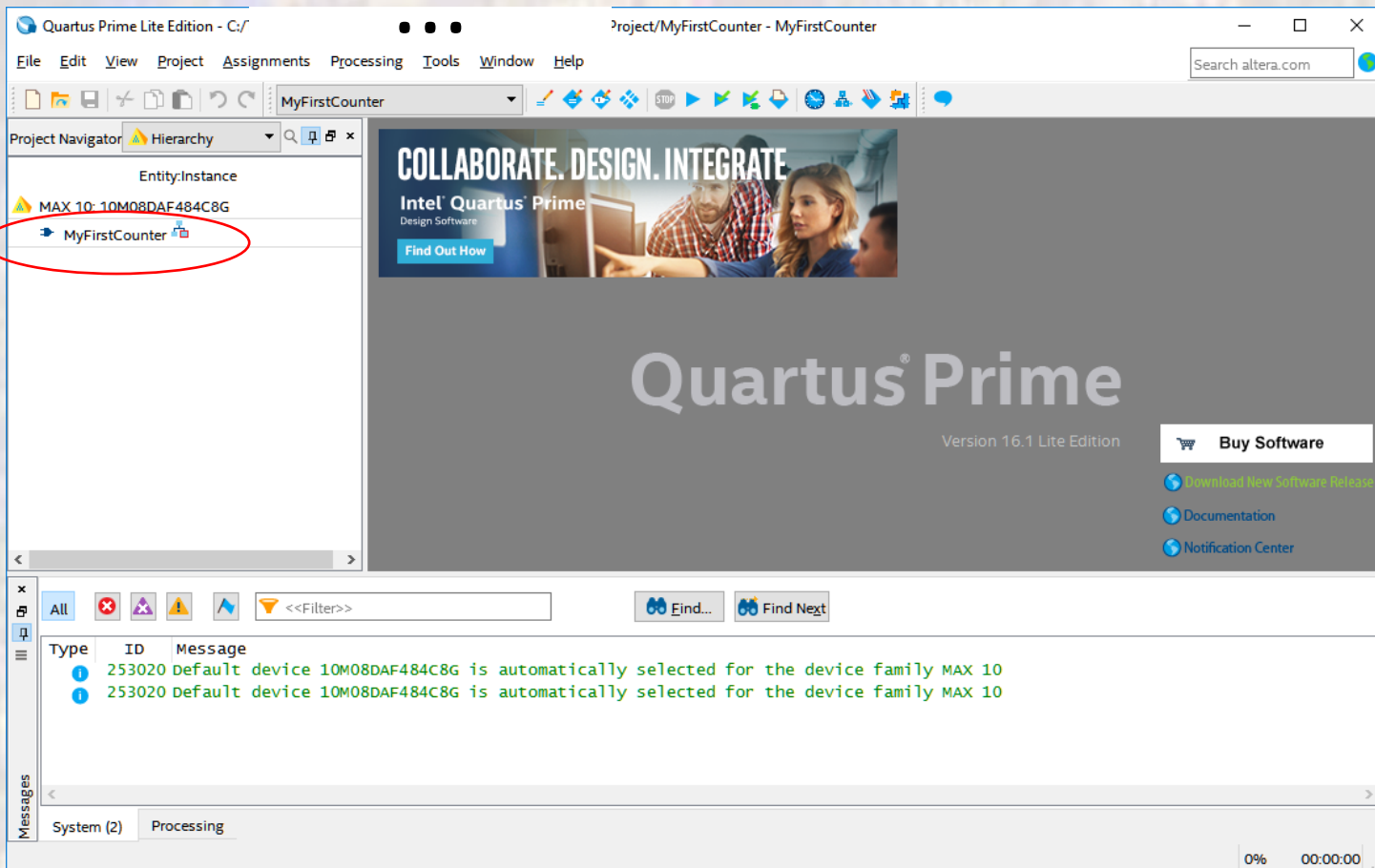
Quartus Project Setup

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



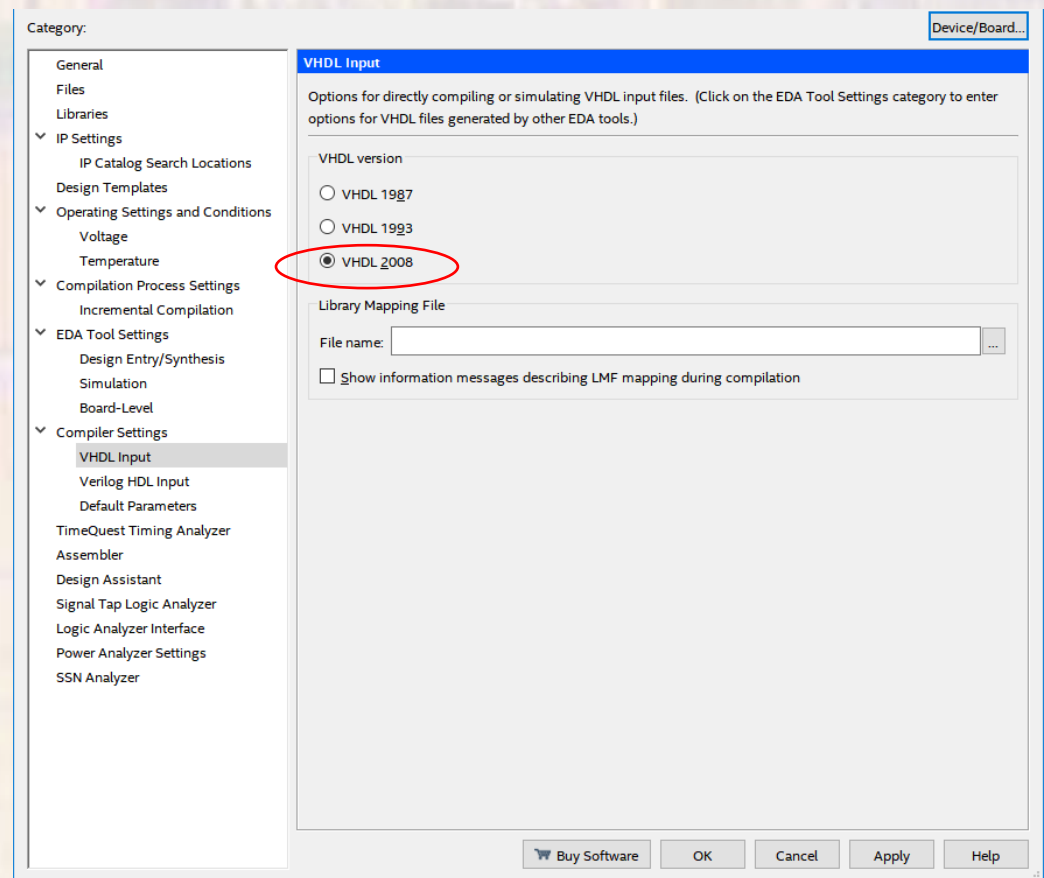
Quartus Project Setup

- 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