List of files & Brief Summary of each file function:

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| **main.asm** | State-machine |
| **SSR.asm** | Controls the SSR Relay box:  Switch On: SSR enables  Switch Off: SSR disables |
| **Serial\_Port.asm** | 1.)Takes and Reads the temperature from the K-Type thermocouple  connected to the MCP3004  2.)Displays the temperature to a Python Strip Chart through the Serial Port |
| **ADC Converter** | Analog to digitalized form |
| **Buzzer.asm** | Interface for the Buzzer component |
| **Thermo2.asm** | Loads the variable Temperature\_Measured with the correct temperature in the oven, calibrated with the cold junction outside of the box. |
| **User\_Interface.asm** | 1)Settings Initialization (Settings\_Initialization)Called at the beginning of the code, this is the user interfacefunction used to get the temperature settings and stores them into registers.  1.1)Welcome\_message 1.2)Soak\_Temperature\_Input  1.3)Soak\_Time\_Input 1.4)Reflow\_Temperature\_Input  1.5)Reflow\_Time\_Input  2)Checking for other inputs (Check\_Inputs)Provides a check to the other user inputs used during the heating process (ie force stop / oven open)  3)Status Display / Value Display (Display\_board)Ability to write to the Hex Display / LCD Display and output set messages onto the LCD Display |
| **Door.asm** | Controls the SSR Relay box:  1 if door is open, SSR disable,  0 if door is closed, SSR enable |
| **LCD\_Display.asm** | Write messages to the LCD according to state |
| **Read\_sw5.asm** | Control switches |
| **Thermo\_Python** | Display graph chart on the computer |

Thermocouple Temperature

(Thermo2.asm)

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Serial Port

(serial\_port.asm

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Interface

(User\_Interface.asm)

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Toaster Oven

ADC Converter

(adc\_converter.asm

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LM335

Room Temperature

Power Control

(SSR.asm)

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LCD Display

(LCD\_Display.asm)

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Check Door

(Door.asm)

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Control Switches

(Read\_sw5.asm)

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Temperature Chart

(Thermo\_python)

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Display graph chart

on the computer

State-Machine

(main.asm