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## Project 1 Module 4

## ECEN 5803-002

- 1. **a**. See attached file startup\_stm32f401retx.s.
  - **b**. The startup files differ depending on the compiler used for the project. For our Keil projects (previous modules) we use the ARM Compiler which has a template startup file (startup\_stm32f401xe.s) while the STM32Cube tool generates a startup file for the GCC compiler. The ARM compiler seems to have explicit allocation of stack and heap size; otherwise, the differences between the two startup files are due to compiler syntax.
  - **c**. See attached files Project\_1.map (map file using STM32Cube tool generated startup code) and digital\_io.map (map file from previous project module).