CPE301 – SPRING 2019

Design Assignment 4B

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Primary Github address: https://github.com/buenj1/submission\_da.git

Directory:

Submit the following for all Labs:

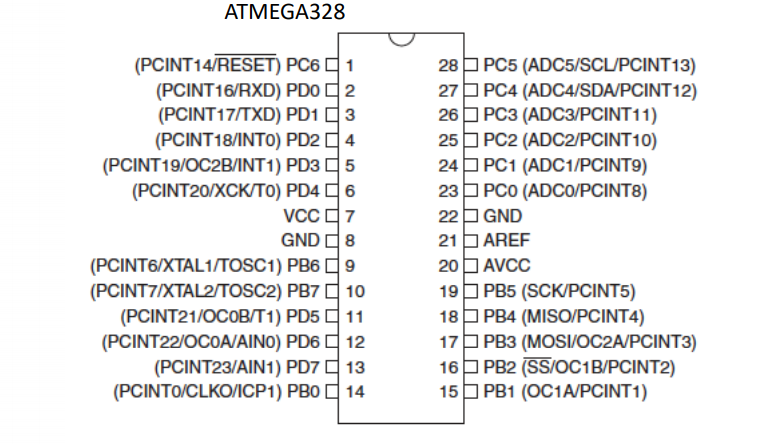
1. In the document, for each task submit the modified or included code (only) with highlights and justifications of the modifications. Also, include the comments.
2. Use the previously create a Github repository with a random name (no CPE/301, Lastname, Firstname). Place all labs under the root folder ESD301/DA, sub-folder named LABXX, with one document and one video link file for each lab, place modified asm/c files named as LabXX-TYY.asm/c.
3. If multiple asm/c files or other libraries are used, create a folder LabXX-TYY and place these files inside the folder.
4. The folder should have a) Word document (see template), b) source code file(s) and other include files, c) text file with youtube video links (see template).

1. **COMPONENTS LIST AND CONNECTION BLOCK DIAGRAM w/ PINS**

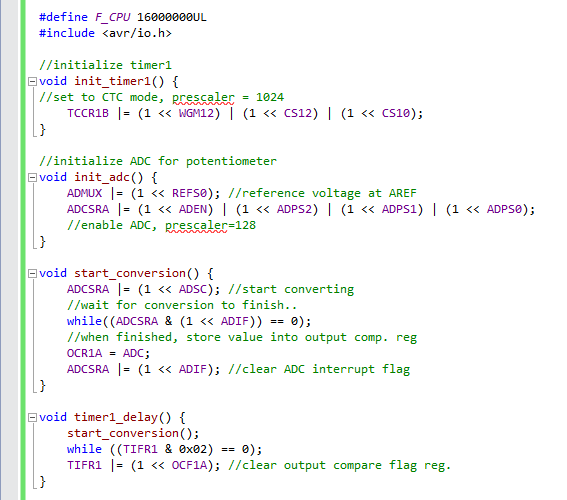
Components: atmega328p Xplained Mini board, jumper wires, Stepper Motor, Servo Motor, ULN2003, potentiometer, breadboard

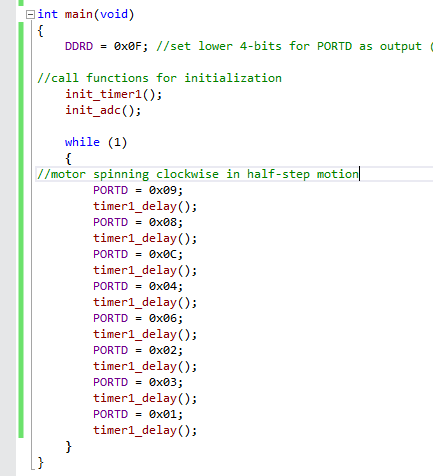
Block Diagram:

ATMEGA328P block diagram:

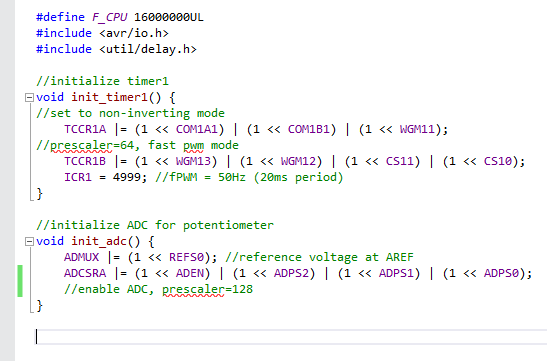


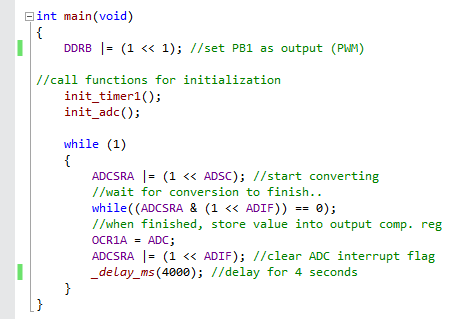
1. **INITIAL/MODIFIED/DEVELOPED CODE OF TASK 1 (Stepper)**





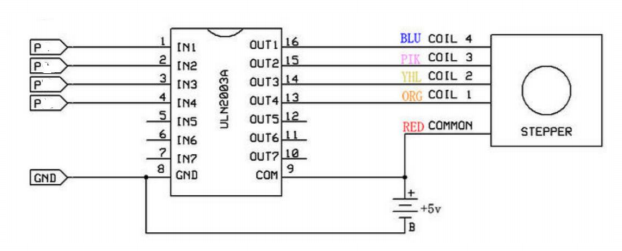
1. **INITIAL/MODIFIED/DEVELOPED CODE OF TASK 2 (Servo)**



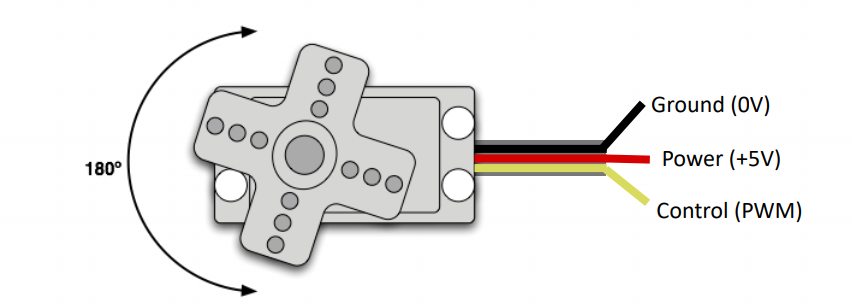


1. **SCHEMATICS**

ULN2003 Stepper Motor Driver:



Servo Motor (does not require a driver):

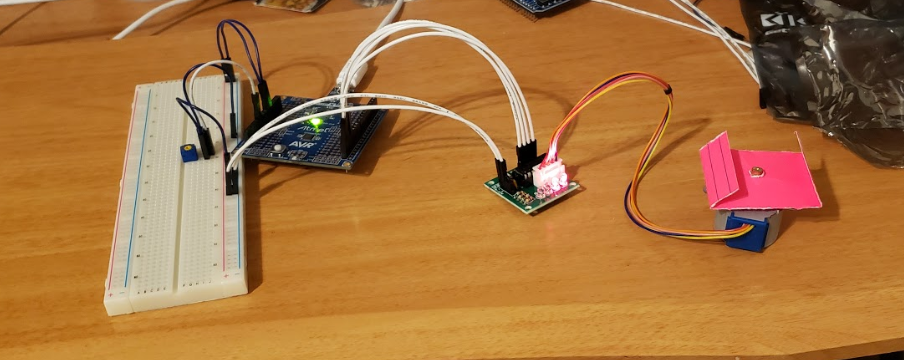


1. **SCREENSHOTS OF EACH TASK OUTPUT (ATMEL STUDIO OUTPUT)**

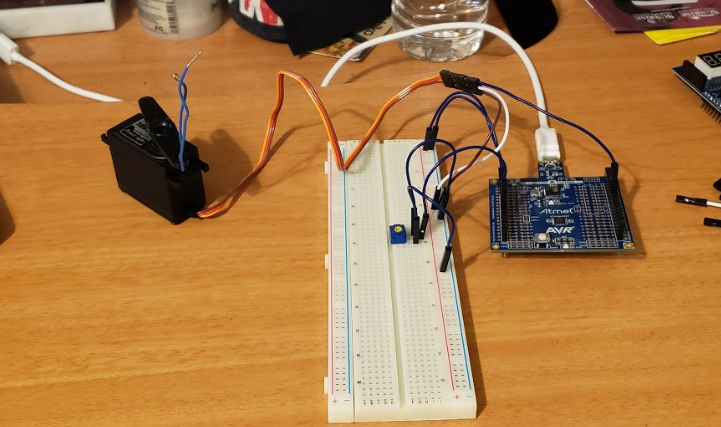
None for this assignment

1. **SCREENSHOT OF EACH DEMO (BOARD SETUP)**

Stepper motor setup:



Servo motor setup:



1. **VIDEO LINKS OF EACH DEMO**

<https://www.youtube.com/watch?v=LRu4MaoxbqM> (Stepper)

<https://www.youtube.com/watch?v=rQrMFK9m3zk> (Servo)

1. **GITHUB LINK OF THIS DA**

https://github.com/buenj1/submission\_da.git

**Student Academic Misconduct Policy**

<http://studentconduct.unlv.edu/misconduct/policy.html>

“This assignment submission is my own, original work”.

JOHN PATRICK BUEN