CPE301 – SPRING 2019

Design Assignment 2A

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

Directory:

Submit the following for all Labs:

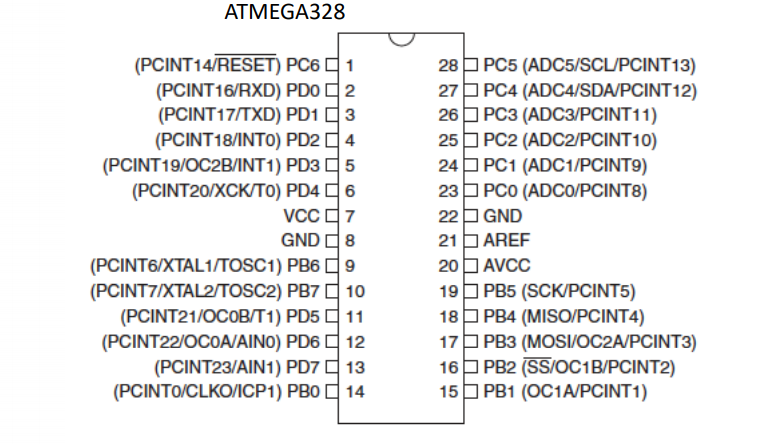
1. In the document, for each task submit the modified or included code (only) with highlights and justifications of the modifications. Also, include the comments.
2. Use the previously create a Github repository with a random name (no CPE/301, Lastname, Firstname). Place all labs under the root folder 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, Multi-function Shield board, micro USB

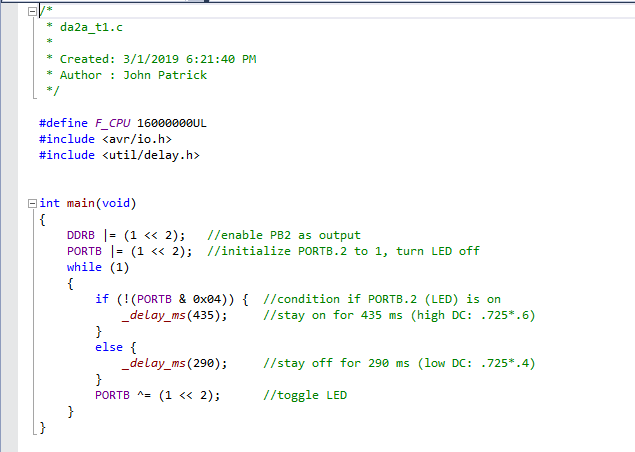
Block Diagram:

ATMEGA328P block diagram:

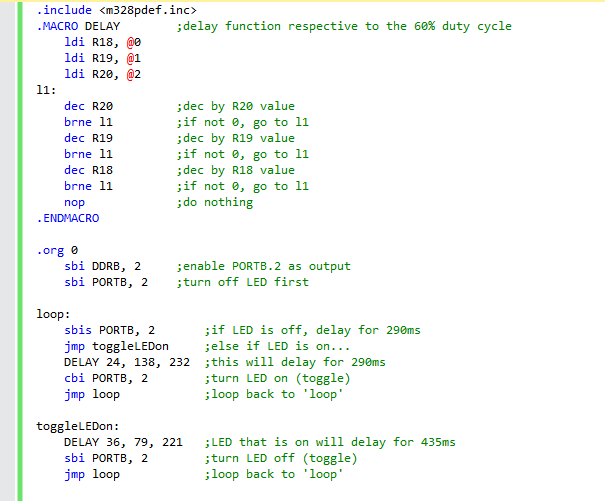


1. **INITIAL/MODIFIED/DEVELOPED CODE OF TASK 1/A**

C Code:

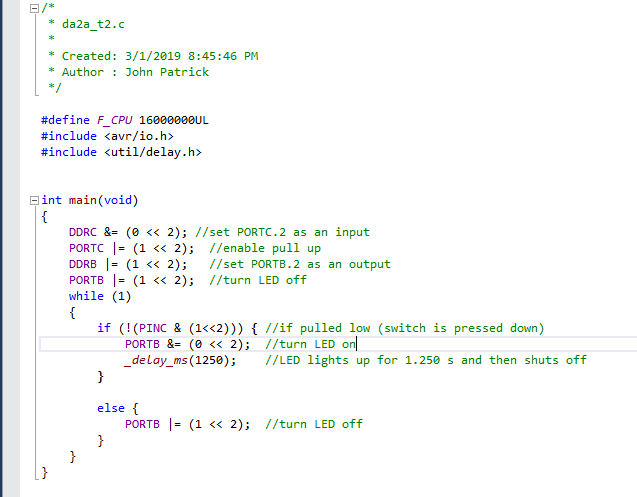


Assembly code:

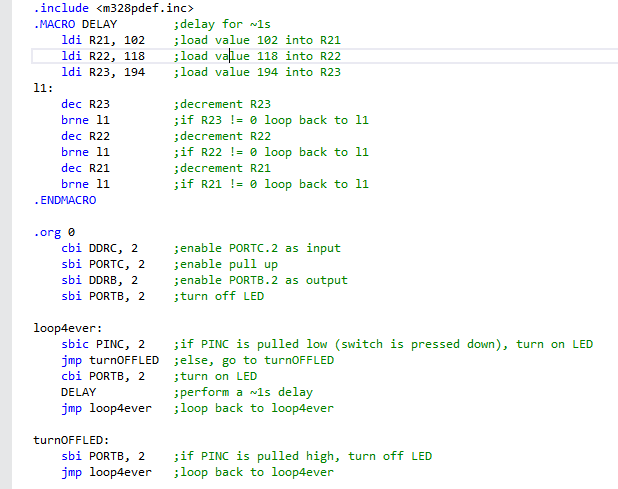


1. **DEVELOPED MODIFIED CODE OF TASK 2/A**

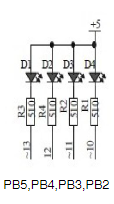
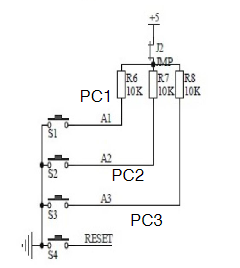
C code:



Assembly code:



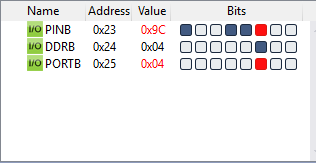
1. **SCHEMATICS**

LEDs and switches on Multi-function shield

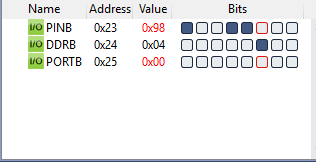
1. **SCREENSHOTS OF EACH TASK OUTPUT (ATMEL STUDIO OUTPUT)**

Task 1:

When PORTB.2 is high (LED is off)

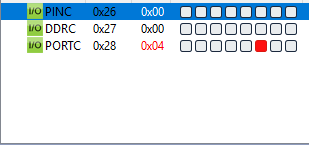


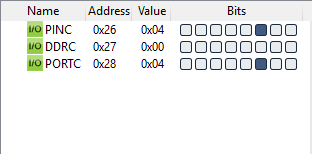
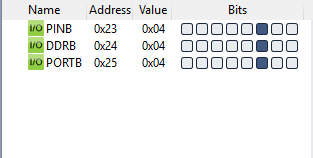
When PORTB.2 is low (LED is on)

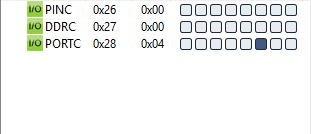
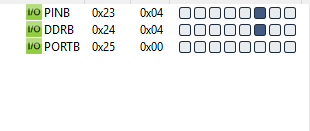


Task 2:

Enabled PORTC.2 (input) as pull up

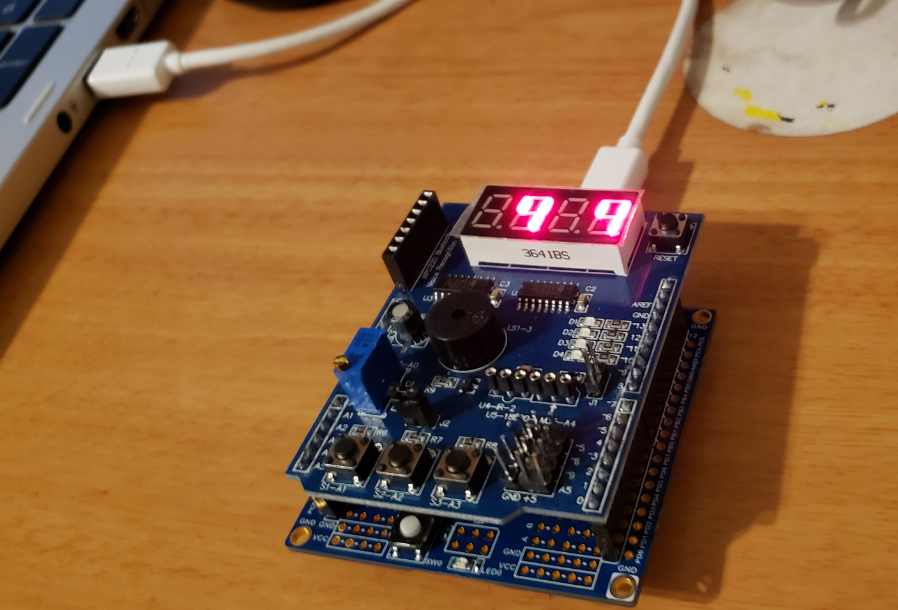


 When LED is off (PINC.2 and PORTB.2 is high)

 When LED is on (PINC.2 and PORTB.2 is low)

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

Setup:



1. **VIDEO LINKS OF EACH DEMO**

Task 1: <https://www.youtube.com/watch?v=xmXJHxwX8MQ>

Task 2: <https://www.youtube.com/watch?v=vAb5eQqeUNQ>

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