Tenniel Takenaka-Fuller

CPE301 – SPRING 2018

Design Assignment X

**DO NOT REMOVE THIS PAGE DURING SUBMISSION:**

The student understands that all required components should be submitted in complete for grading of this assignment.

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| --- | --- | --- | --- |
| **NO** | **SUBMISSION ITEM** | **COMPLETED (Y/N)** | **MARKS**  **(/MAX)** |
| 1 | COMPONENTS LIST AND CONNECTION BLOCK DIAGRAM w/ PINS |  |  |
| 2. | INITIAL CODE OF TASK 1/A |  |  |
| 3. | INCREMENTAL / DIFFERENTIAL CODE OF TASK 2/B |  |  |
| 3. | INCREMENTAL / DIFFERENTIAL CODE OF TASK 3/C |  |  |
| 3. | INCREMENTAL / DIFFERENTIAL CODE OF TASK 4/D |  |  |
| 3. | INCREMENTAL / DIFFERENTIAL CODE OF TASK 5/E |  |  |
| 4. | SCHEMATICS |  |  |
| 5. | SCREENSHOTS OF EACH TASK OUTPUT |  |  |
| 5. | SCREENSHOT OF EACH DEMO |  |  |
| 6. | VIDEO LINKS OF EACH DEMO |  |  |
| 7. | GOOGLECODE LINK OF THE DA |  |  |
|  |  |  |  |
|  |  |  |  |

1. **COMPONENTS LIST**

Components for task 1: Atmel Studio 7, Fixed 5 Volt DC Power Supply HY3003F-3, 7 stripped wires, 1 push button, LED blink bar, ATMEGA328P, and 2 (220 ohm) resistors.

1. A screenshot of a cell phone

   Description generated with very high confidenceA screenshot of a cell phone

   Description generated with high confidence**INITIAL/DEVELOPED CODE OF TASK 1**

C Code of Task 1

ASM Code of Task 1. Used timer1 for a delay since a timer to use was not specified.

1. A screenshot of a cell phone

   Description generated with very high confidence**INITIAL/DEVELOPED CODE OF TASK 2**

C Code of Task 2. LED originally begins as off. Once the button is pressed, the light stays on for 1 second then turns off. Refer to video for better understanding.

A screenshot of a cell phone

Description generated with very high confidence

C Code of Task 2. LED originally begins as off. Once the button is pressed, the light stays on for 1 second then turns off. Refer to video for better understanding.

A screenshot of a cell phone

Description generated with very high confidence

ASM Code of Task 2. LED originally begins as off. Once the button is pressed, the light stays on for 1 second then turns off. Refer to video for better understanding.

A screenshot of a cell phone

Description generated with very high confidence

ASM Code of Task 2. LED originally begins as off. Once the button is pressed, the light stays on for 1 second then turns off. Refer to video for better understanding.

1. **MODIFIED CODE OF TASK 3 from TASK 1**

A screenshot of a cell phone

Description generated with very high confidence

C code Task 3. The LED blinks in .25 seconds intervals using an overflow flag.

1. **MODIFIED CODE OF TASK 4 from TASK 1**

A screenshot of a cell phone

Description generated with very high confidence

C Code Task 4. The LED blinks in .25 seconds intervals using the timer0 overflow vector interrupt.

1. **MODIFIED CODE OF TASK 5 from TASK 2**

**A screenshot of a cell phone

Description generated with very high confidence**

C Code Task 5. The LED will blink every .25 seconds. Once the button is pressed, it will delay for one second then continue blinking. Refer to video and period verification screenshots for a better understanding.

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

## Task 1

**A screenshot of a social media post

Description generated with very high confidenceA screenshot of a cell phone

Description generated with very high confidenceC Code Before & After Output from toggle on to toggle off**

Before the toggle. Notice the stopwatch is at 0 us

After the toggle. Notice the stopwatch is at 250,000 us

A screenshot of a cell phone

Description generated with very high confidenceA screenshot of a cell phone

Description generated with very high confidence**ASM Before & After Output from toggle on to toggle off**

After the toggle. Notice the stopwatch is very close to 250,000 us

Before the toggle. Notice the stopwatch is at 0 us

## Task 2

A screenshot of a cell phone

Description generated with very high confidenceA screenshot of a cell phone

Description generated with very high confidence**Code Before & After Output from toggle on to toggle off**

Before the toggle. Notice the stopwatch is at 0 us

After the toggle. Notice the stopwatch is at 10,000 us which is equal to 1 second.

## Task 3

A screenshot of a cell phone

Description generated with very high confidenceA screenshot of a cell phone

Description generated with very high confidence**C code Before & After Output from toggle on to toggle off**

After the toggle. Notice the stopwatch is at 250,000 us

Before the toggle. Notice the stopwatch is at 0 us

## Task 4

A screenshot of a cell phone

Description generated with very high confidence**A screenshot of a cell phone

Description generated with very high confidenceC code Before & After Output from toggle on to toggle off**

Before the toggle. Notice the stopwatch is at 0 us

After the toggle. Notice the stopwatch is at 250,000 us

## Task 5

A screenshot of a cell phone

Description generated with very high confidenceA screenshot of a cell phone

Description generated with very high confidence**C code Before & After Output from toggle on to toggle off**

After the toggle. Notice the stopwatch is at 250,000 us

Before the toggle. Notice the stopwatch is at 0 us

1. **A close up of a map

   Description generated with very high confidenceSCHEMATIC**
2. **BOAD SET UP**

A circuit board

Description generated with very high confidenceA microwave oven

Description generated with high confidenceThe board set up was the same throughout the entire design assignment.

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1. **VIDEO LINKS OF EACH DEMO**

<https://www.youtube.com/watch?v=MIkJVxzUZV4>

All tasks are put into one video and labeled accordingly.

1. **GITHUB LINK OF THIS DA**

<https://github.com/TennielTakenaka/DA2>

**Student Academic Misconduct Policy**

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

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

Tenniel Takenaka-Fuller