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|  | COMPUTER SCIENCE DEPARTMENT  TE2004B – ADVANCED EMBEDDED SYSTEMS DESIGN  *LAB #2* – *TIMERS* | |
| Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  ID: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  ID: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
|  | Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  ID: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  ID: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

**Instructions:**

1. Create a new project in which the frequency of the timer clock source is of 24 MHz. Copy and paste a screenshot of the resulting clock tree.

Picture 1.1. Clock source for problem #1

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1. Using the SysTick registers make the LED in PA5 high during 1 second and low for another second.

Listing 2.1. Code for problem #2

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Figure 2.2. Calculations for problem #2

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Picture 2.1. Oscilloscope output for Problem #2

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1. Using the TIM4 make the LED in PA5 high during 1 second and low for another second.

Listing 3.1. Code for problem #3

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Figure 3.2. Calculations for problem #3

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Picture 3.1. Oscilloscope output for Problem #3

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1. Using the TIM2 and an interruption make the LED in PA5 high during 1 second and low for another second.

Listing 4.1. Code for problem #4

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Figure 4.2. Calculations for problem #4

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Picture 4.1. Oscilloscope output for Problem #X

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1. Use a timer and an interruption from the NUCLEO-H533 board generate a square wave with a frequency of 100Hz.

Listing 5.1. Code for problem #5

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Figure 5.2. Calculations for problem #5

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Picture 5.1. Oscilloscope output for Problem #5

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