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| **Mark** | **A-** |

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| Team name: | *B01* | | |
| Homework number: | *HOMEWORK 3* | | |
| Due date: | 17/10/2023 | | |
|  |  |  |  |
| Contribution | NO | Partial | Full |
| 1 Francesco Maria Tranquillo |  |  | *x* |
| 2 William Stucchi |  |  | *x* |
| 3 Giada Silvestrini |  |  | *x* |
| 4 Francesco Scroccarello |  |  | *x* |
| 5 Paolo Salvatore Galfano |  |  | *x* |
| Notes: | | | |

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| Project name | DMA and LCD | | |
| Not done | Partially done  (major problems) | Partially done  (minor problems) | Completed |
|  |  |  | *x* |
| Explanation:  We successfully completed the homework.  **Part 1:**  The main problem to solve was the fact that the UART communication stopped after sending a message with the DMA.  We tried to check what was done in the HAL\_UART\_Transmit\_DMA function and we found out that a flag present in the struct huart2 was set to busy for the message sending (specifically the flag is huart2->gState).  We tried to set manually the flag in the main and that solved the problem (but clearly it wasn’t the right solution since the struct should probably be accessed only by the library functions) so after enabling the UART2 global interrupt we checked in the handle (HAL\_UART\_IRQHandler) and found out that after the termination of the transmission an interrupt was called to set that flag in the struct. So by just enabling the UART2 global interrupt the problem was solved.  **Part 2:**  We enabled all the pins as output for the LCD as suggested in the slides and imported the libraries. First we initialized a char matrix which contained the names in alphabetical order, then initialized the lcd and the backlight with the proper functions given by the library. The first name was printed outside of the while, in order to leave a blank row as required, then in the while loop we printer the names cycling across the matrix and waiting a delay of 1000 ms. | | | |
| Professor comments:  Try to explain more in detail what you have done (especially for PartA).  Report also the most important parts of your code.  Very good that you explained the problem you encountered and how you solved it. The tutor will discuss it during the homework review in class.  Better not to use long delays in the while loop, but exploit the timers interrupts. | | | |