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| Team name: | B7 | | |
| Homework number: | 05 | | |
| Due date: | November 1st | | |
|  |  |  |  |
| Contribution | NO | Partial | Full |
| 1 Massa Giacomo |  |  | *x* |
| 2 Giampà Simone |  |  | *X* |
| 3 Galimberti Claudio |  |  | *x* |
| 4 Micelli Johanna |  |  | *x* |
| 5 Raduzzi Luca Francesco |  |  | *x* |
| Notes: | | | |

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| Project name | 05: Light Dependent Resistor | | |
| Not done | Partially done  (major problems) | Partially done  (minor problems) | Successfully completed |
|  |  |  | *x* |
| Explanation:  Firstly, we checked the Microcontrollers Hands-on lab and the datasheet, where we saw that LDR is connected to PA0 PIN, so we enabled the channel IN0 of ADC1. Then we enabled the DMA in circular mode activating the DMA requests, we set 1 conversion and we configured the ADC sensible to the trigger out event of timer 2. After that, we enabled timer 2 setting its parameter to get a conversion every 1ms. We also set the UART with a baud rate of 115200bit/s.  Code:  The ADC interrupt callback void HAL\_ADC\_ConvCpltCallback(ADC\_HandleTypeDef\* hadc) tells us when the conversion is done, and the value read is stored in our integer variable converted. We defined an array of 1000 elements and a variable that indicates the number of conversions the ADC is doing. Every time the ADC ends a conversion, we calculate the correct lux value corresponding to the value read by the LDR sensor. We also memorize the corresponding voltage value in the array. After 1000 conversions (so after 1 sec) we calculate the average of all the 1000 elements and we transmit that value, with UART, via the serial monitor. After that, we reset our counter and proceed to the next 1000 ADC conversions. | | | |
| Professor comments: | | | |