Project Selection Form

# Group: 9 [Diogo Luís (96922), Duarte Marques (96523)]

# Project

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| --- | --- |
| **Title** | SolarMax |
| **Description** | Solar panel installed on a rotatory support. The rotation (in two different planes) is performed by two servo motors, in order to maximize efficiency considering the direction of the incident light – measured with LRD sensors. An Arduino UNO WiFi Rev2 is used so that the position of the solar panel and the power generation efficiency can be tracked in real-time by an Android application. |

# Required hardware

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| --- | --- | --- |
|  | **HW Item Reference** | **Quantity** |
|  | |
| **HW provided by IST** | Arduino UNO WiFi Rev2 | 1 |
| Sunfounder Sensor Kit V1 for Arduino – **apenas interessados em alguns jumper wires** (poderão ser jumper wires disponíveis no laboratório, não necessariamente deste kit…) | (1) |
|  | | |
| **HW provided by the students** | Servo motor MG996R - <https://www.botnroll.com/pt/servos/3168-servo-mg996r-180-11kg-cm.html> | 2 |
| Placa PCB perfurada 5cm x 7cm - <https://www.lojapm.pt/product/placa-pcb-perfurada-5-x-7-cm> | 2 |
| Sensores LRD 5mm - <https://www.electrofun.pt/sensores-arduino/sensor-luz-ldr> | 5 |
| Resistências de 10kΩ - <https://mixtronica.com/0-25w-carvao/9229-resistencia-carvao-0-25w-10kohm.html> | 5 |
| LM2596 DC-DC Buck Converter - <https://mixtronica.com/alimentacao-modulos/7588-mx130731002-lm2596-dc-dc-buck-converter-step-down-power.html> | 2 |
| Interruptor On/Off - <https://www.electrofun.pt/switch-on-off/interruptor-onoff-15a-250v-vermelho> | 2 |
| Pequeno painel solar de 12V - <https://cb-electronics.com/products/solar-panel-12v/> | 1 |
| Bateria 12V - <https://mauser.pt/catalog/product_info.php?cPath=74_60_285&products_id=115-2018> | 1 |
| LED display module - https://www.aliexpress.com/item/32870739404.html | 1 |
| Female DC Barrel Jack - https://www.ptrobotics.com/fonte-de-alimentacao/2229-21mm-female-dc-barrel-jack-to-alligator-clips.html | 1 |
| Interruptor de pressão - https://www.ptrobotics.com/push-button/5050-cmt302b-interruptor-de-pressao-n-fechado-prok.html | 1 |