

# Environmental Invention(2)

---

TEAM 301: Fatema Alshehhi, Salsabil Soliman



# CONTENTS OF THE PRESENTATION



1. Selected design

2. Block Diagram

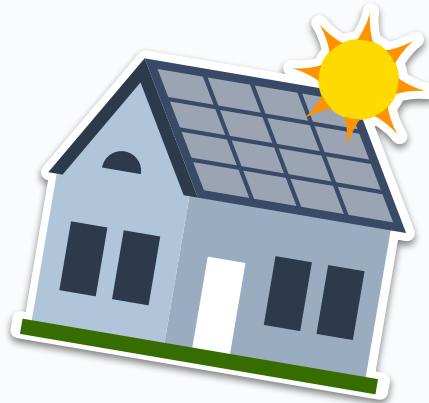
3. Component Selections

4. Microcontroller Selection

5. Software Proposal

6. Hardware Proposal

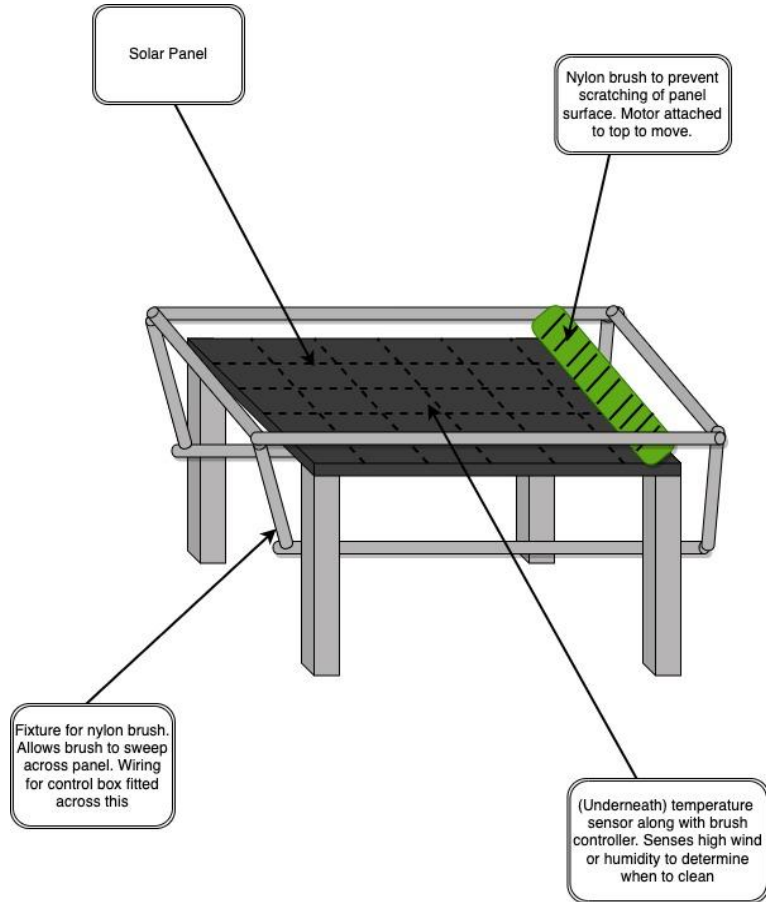




## *Selected Design*

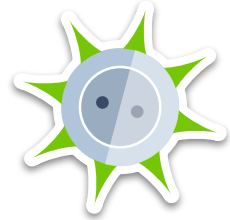
---

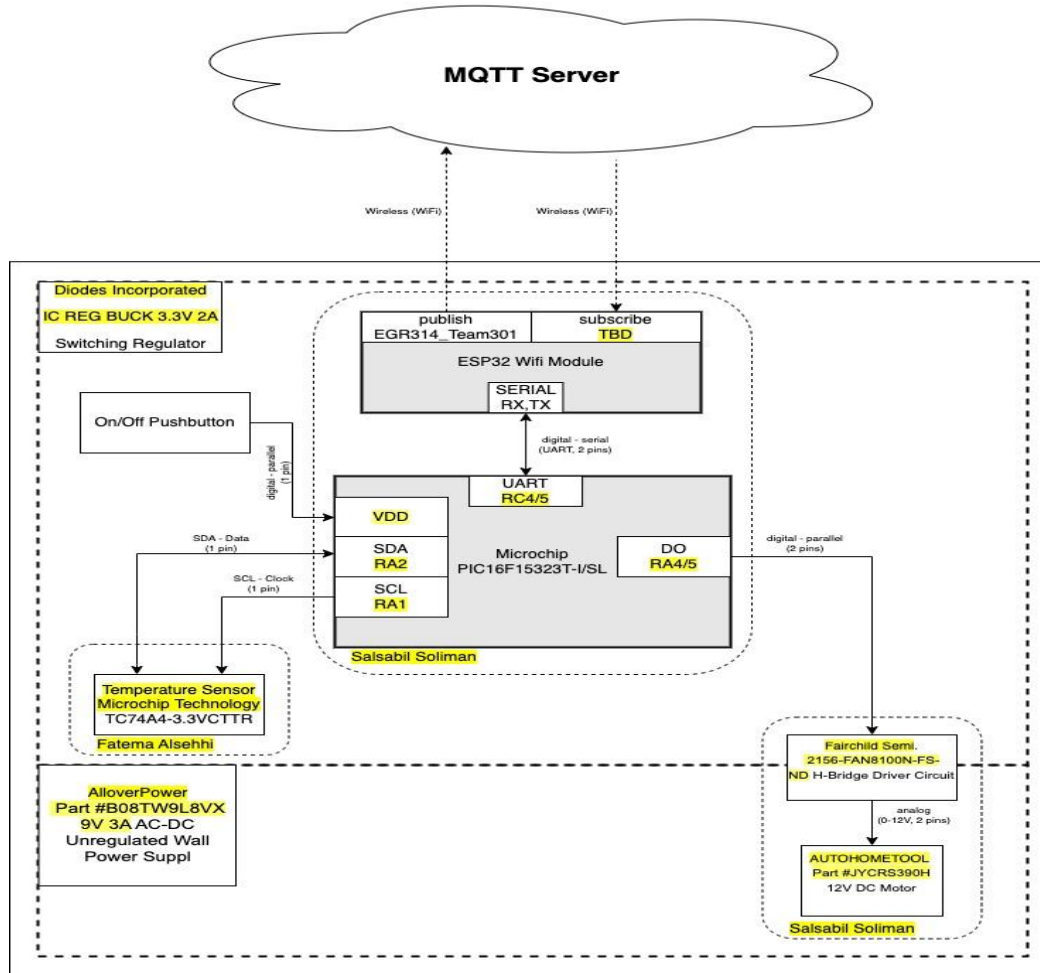




# Solar Panel Cleaner

- All features
- Simplicity





# Block Diagram

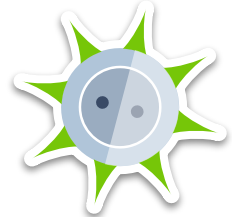
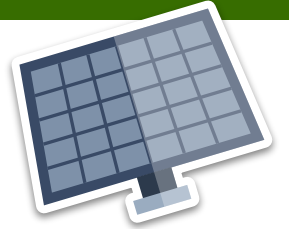
- 9V to 3.3V
- H-bridge to motor (RA4,RA5)
- Temperature sensor with amplifying and functioning (RA1,RA2)






# Component Selection

---

- Two main subsystems: Temperature sensor, Micro-controller
- Extra parts for a fully functioning Project
- Chosen based on three categories, price, quality, availability



Component	Pros	Cons
 <p>Temperature Sensor Digital. Part No. TC74A4-3.3VCTTR Price: 1.09\$</p>	<ul style="list-style-type: none"> <li>• It's digital</li> <li>• Well manufactured</li> <li>• Famous in the industry</li> </ul>	<ul style="list-style-type: none"> <li>• Limited temperature range</li> <li>• It can heat itself</li> <li>• Hard to find</li> </ul>
 <p>Mini motor Part No. B01M58POHF Price: 6\$</p>	<ul style="list-style-type: none"> <li>• Have a wide range of voltage</li> <li>• Not expensive</li> <li>• Run on low current .24A</li> </ul>	<ul style="list-style-type: none"> <li>• Sold by amazon</li> <li>• Require a motor driver</li> <li>• Bearings wearing out quickly</li> </ul>
 <p>Brush DC Motor Controller Part No. IFX9201SGAUMA1 Price: 4.88\$/each</p>	<ul style="list-style-type: none"> <li>• Lowest price</li> <li>• Previous experience with FAN8100N</li> <li>• Drive up to 3A</li> </ul>	<ul style="list-style-type: none"> <li>• Power efficiency</li> <li>• Not available in peralta lab</li> <li>• Only up to 9v of supplying and loading voltage</li> </ul>





DC Power Connectors  
Part No.  
PJ-075DH-SMT-TR  
Price: 1.15\$

- Low cost
- Rated for 24VDC
- Small footprint
- Rated for 3.5A

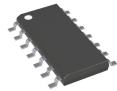
- Smaller outer contact



IC REG BUCK 3.3V 2A  
Part No.  
AP63203WU-7  
Price: 0.91\$

- Cheaper cost
- Good 2A output
- Smaller footprint

- Operating temperature range is lower



PIC16F15323T-I/SL  
Part No.  
PIC16F15323T-I/SLTR-ND  
Price: 0.99\$

- High performance
- Low power consumption
- Low cost

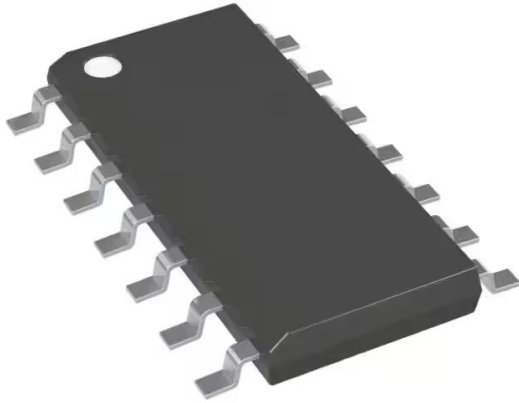
- Limited availability of third-party libraries
- Limited peripheral options



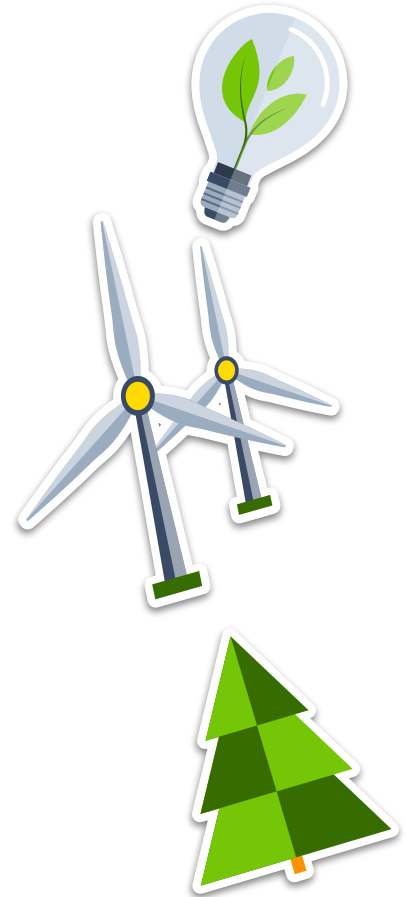


# Microcontroller Selection

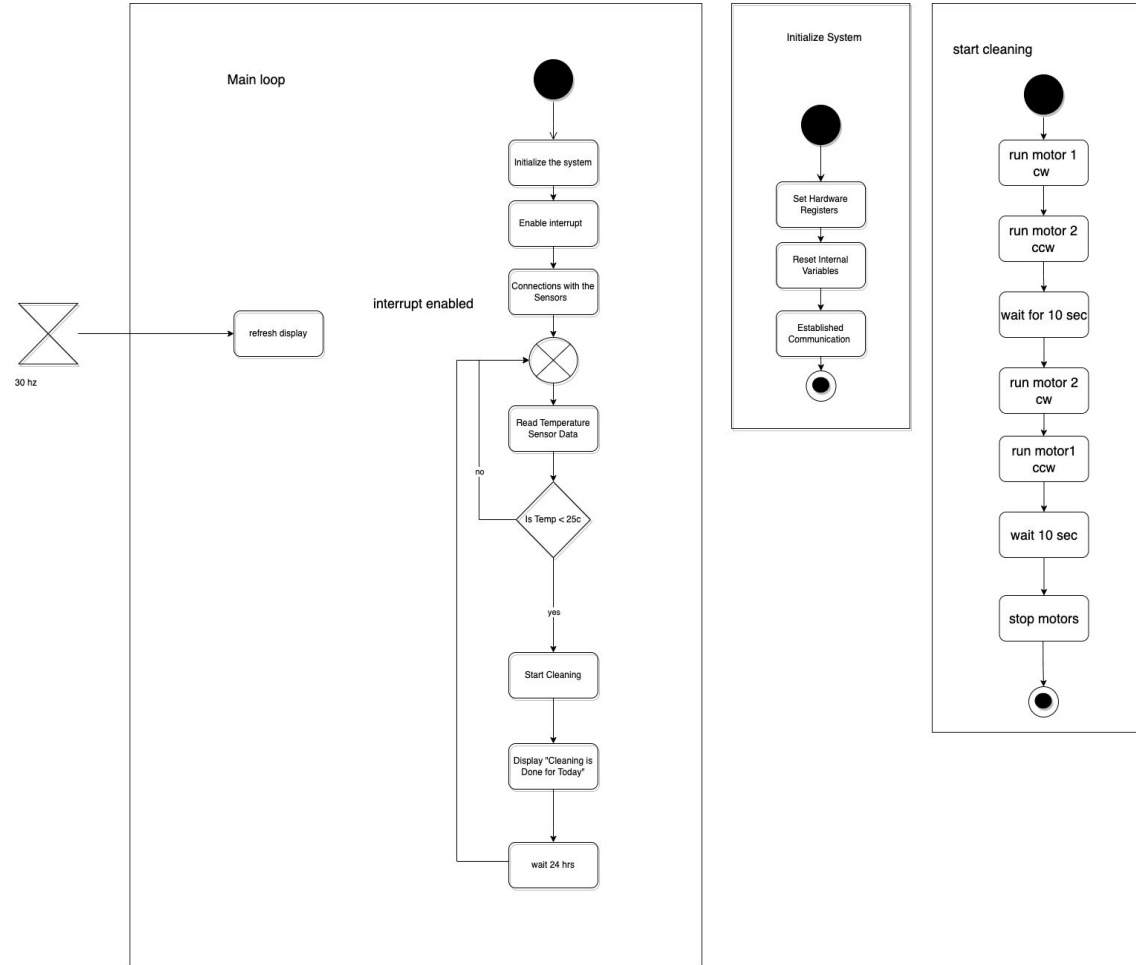
---



- It has the best quality
- It has all the features we are looking for
- In -stock and fast delivery
- 8 Bit , 1 i2c pin, 1 SPI, 4 PWM, 2 UART



# Software Proposal



# Hardware Proposal

