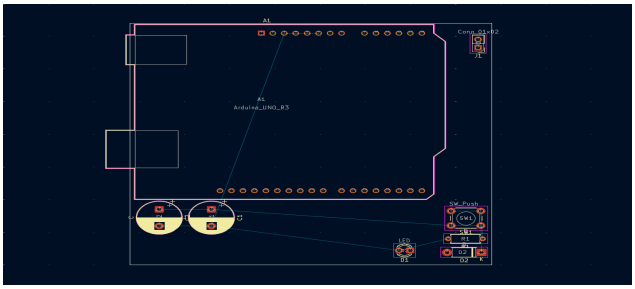
Readme:

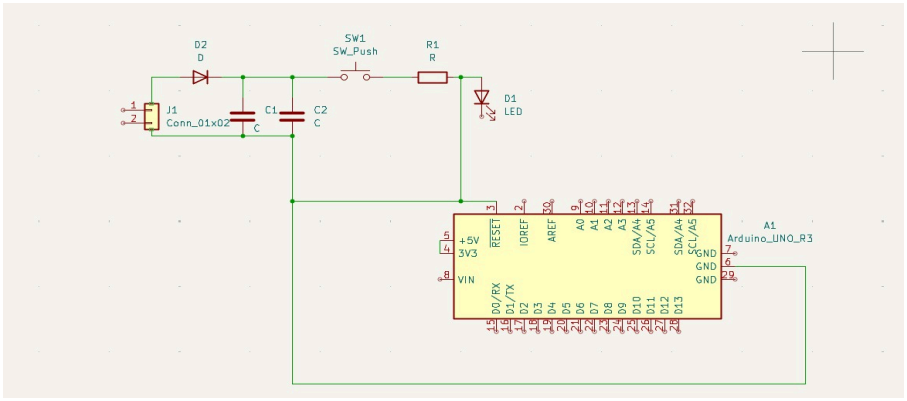
Description:
My project consists on a digital voltage multimeter designed to measure and record the voltage produced by a power energy generation system based on bacteria that produce that energy. This type of system uses the bacteria an cathode and anothe to extract the energy that bacteria produces. The system uses an Arduino as the main controller and a PCB designed by me.

Why I made this project:
I made this project because I have a bacterial energy production system and I need an automatic and reliable way to study its behavior and measure its energy production. Recording voltage data over time helps me better understand how the system works.

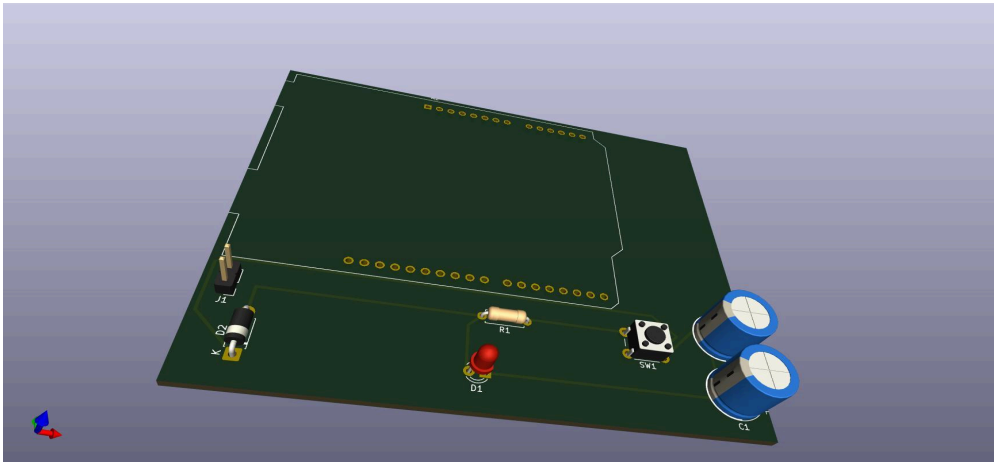
How to use my project:
To use it, connect the anode and cathode to the PCB, connect the Arduino to a computer, and upload the code from my GitHub.

Some images of my project:



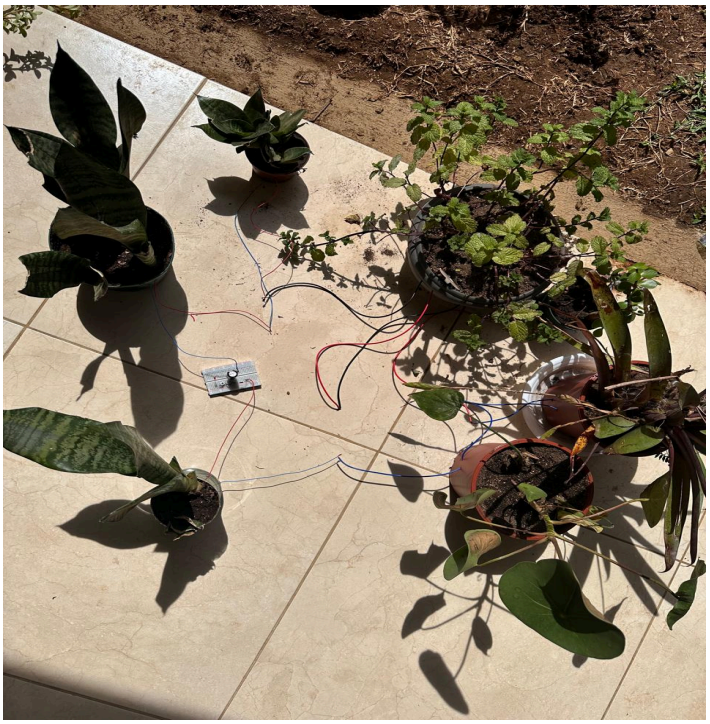


This is the structure of my sistem(a diagram).



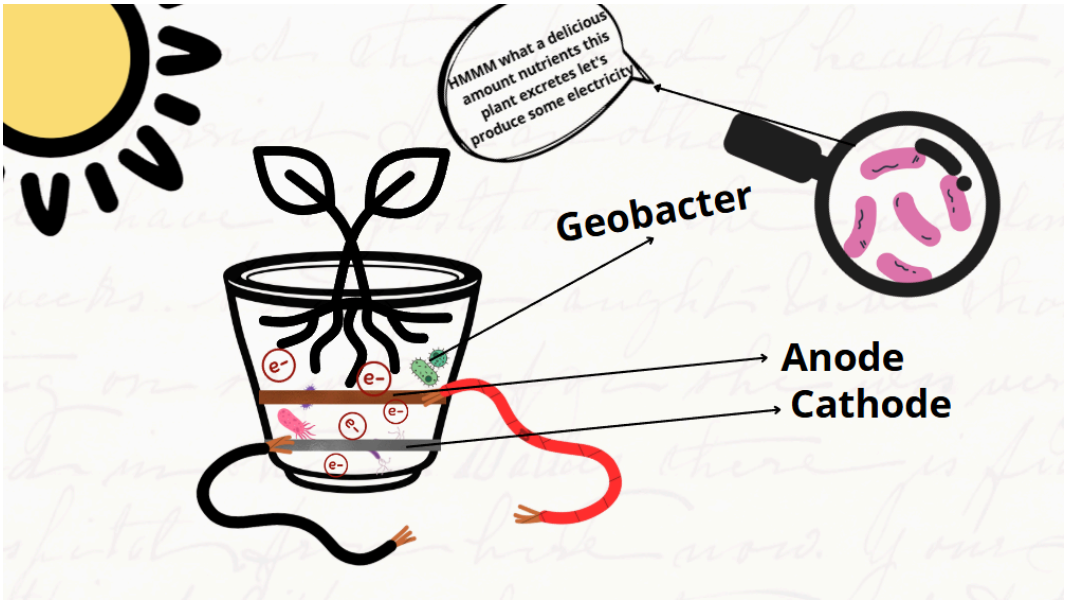
This one is the same structure but in 3D.

This is the system to which the PCB should be connected (in my case) in order to measure the voltage in the system:



This system is what I have already built the PCB is what I need to add for me to had better measurements about the energy production of the system.

This is an illustration about how it works:



Components you need to build the PCB:

Soldering station	diode	Profesional multimeter	
Soldering Tin	resistors	perforated blade	
Capacitors	arduino kit	gloves	
Leds	Blank copper board		

Links of all the products:

https://www.steren.cr/estacion-profesional-para-soldar-con-lupa-y-lampara.html (Soldering station)

https://www.steren.cr/baquela-de-10-cm-x-15-cm.html(Blank (blank copper board)

https://www.steren.cr/baquela-perforada-de-10-7-cm-x-14-cm.html (perforated blade)

https://www.steren.cr/condensador-electrolitico-radial-de-4700-uf-micro-faradios-a-63-volts.html (capacitors)

https://www.steren.cr/diodo-rectificador-de-proposito-general-3-amperes-1000-v.html (diode)

https://www.steren.cr/led-de-5-mm-color-rojo-claro.html (leds)

https://www.steren.cr/resistencia-de-carbon-de-1-2-watt-al-5-de-tolerancia-de-1-ohm.html (resistors)

https://www.steren.cr/multimetro-profesional-rms-con-detector-de-voltaje-sin-contacto-ncv.html (multimeter)

https://www.steren.cr/rollo-de-100-gramos-de-soldadura-con-aleacion-estano-plomo-60-40.html (Soldering Tin)

https://www.ellagar.com/ECOMMERCE/DetalleArticulo/7024668/guante-caucho-uso-quimicos-m-truper (gloves)

https://www.steren.cr/curso-inicio-en-la-programacion-con-biomakers.html (arduino kit)