Aim
Design and set up a battery system that charges the battery using energy from a solar panel within Cisco Packet Tracer.

Problem Statement
Create a Packet Tracer simulation that demonstrates solar energy capture and storage: the solar panel produces energy (when sunlight is present), the power meter measures produced power, and the battery stores energy. Expose monitoring via an IoT registration server / web browser so a user can observe solar power, battery charge, and load operation.

Scope of the solution
Simulate energy flow: Sun → Solar Panel → Power Meter → Battery → LED
Monitor device telemetry using Packet Tracer's IoT registration server & web interface.

Show how changing sunlight affects generated power and battery level.

Provide documentation and a short demo video/screencast.

No real hardware required — fully simulated in Cisco Packet Tracer.

Required Components
Solar Panel (IoT)

Power Meter (IoT)

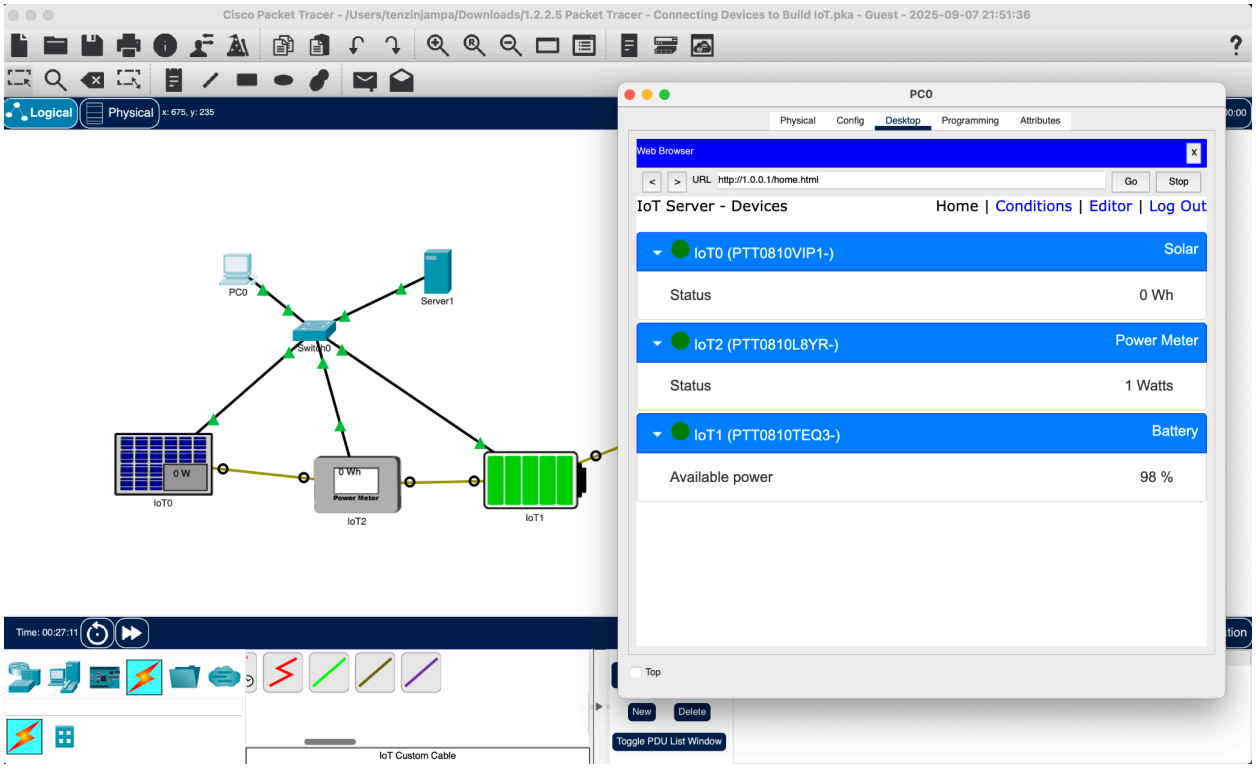
Battery (IoT) / Smart Battery device

Generic PC (to open the IoT web UI / registration server)

IoT Registration Server / Cloud (Packet Tracer built-in IoT server)

Server for DHCP

Image


Cisco Packet Tracer - /Users/tenzinjampa/Downloads/1.2.2.5 Packet Tracer - Connecting Devices to Build IoT.pka - Guest - 2025-09-07 21:51:36
Logical
Physical
x: 675, y: 235
PC0
Server1
Switch0
0 W
IoT0
0 Wh
Power Meter
IoT2
IoT1
PC0
Physical
Config
Desktop
Programming
Attributes
Web Browser
URL
http://1.0.0.1/home.html
Go
Stop
IoT Server - Devices
Home | Conditions | Editor | Log Out
IoT0 (PTT0810VIP1-)
Solar
Status
0 Wh
IoT2 (PTT0810L8YR-)
Power Meter
Status
1 Watts
IoT1 (PTT0810TEQ3-)
Battery
Available power
98 %
Top
Time: 00:27:11
IoT Custom Cable
New
Delete
Toggle PDU List Window