Kids Invoke Innovation
And Maybe Eskom Too

Rohan Schwartz
SARAO
About

● Mechatronics turned Software Engineer
● Enjoy building stuff
Engineering solutions start with a problem
Engineering solutions start with a problem
Solution

Problem + RaspberryPi + Python = homepy

- Monitor gate and garage doors
- Control driveway floodlight
- Report states via LCD interface and beeper
Alert messaging

- Garage Right Opened 08:26
- Gate Opened 08:26
- Gate Opened 08:38
- Gate Opened 08:44
- Garage Right Still Open 08:46

- RPi Startup 09:20
- SOS 09:21
- Gate Opened 09:23
Control and status

s - status
d - display message
b - buzzer alert
a - alarm set
o - outside light
p - passenger gate
g - gate
l - garage left
r - garage right
x - solar aux

Alarm Disarmed
Garage Left Closed
Garage Right Open
Garage Single Closed
Gate Closed
Solar

Graphs showing solar power, battery power, load power, aux load power, and voltage for PV1 and PV2.
Python libraries

- RaspberryPi - pigpio
- Telegram - requests (python-telegram-bot, Telethon)
- MODBUS - minimalmodbus
- Blynk - BlynkLib
Future dev

- Download weather data and add intelligence for automatically control of non-essential loads (geyser element and pool pump) depending on how much PV there is for the day
Thank you

Rohan Schwartz
SARAO