IDP Hardware Presentation 2

Group B - Foxtrot

Group Members

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2. Md. Rokonuzzaman Reza - 201814021
3. Kazi Tasnim Rahman - 201814044
4. Muhammad Munswarim - 201814052
5. Tashfia Fatema - 201814057
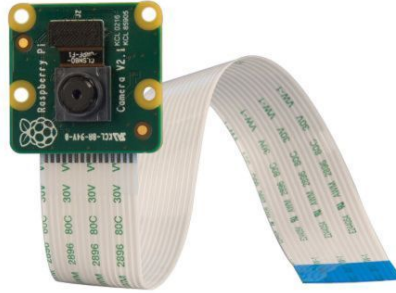6. Shaqran Bin Saleh - 201814059

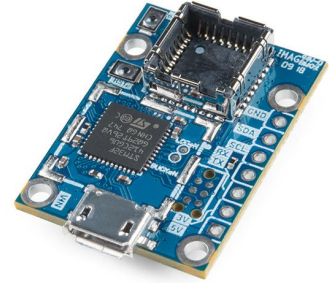# Project Thermique

A smarter sentinel
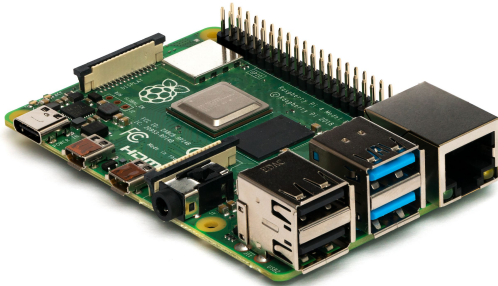
An introduction to the components

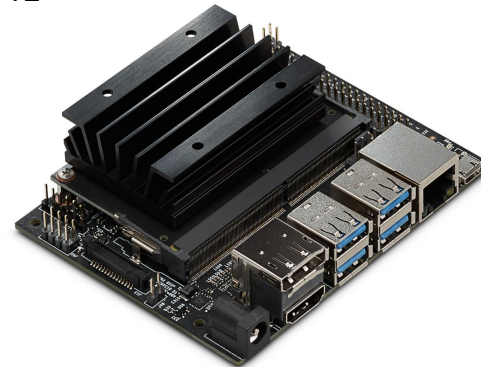Lepton Module + Breakout
board

PiCamera v2

PureThermal v2 Interfacing
board

Raspberry Pi Model 4B+

Nvidia Jetson Nano (model B01)

Project Thermique [Rev. 1]
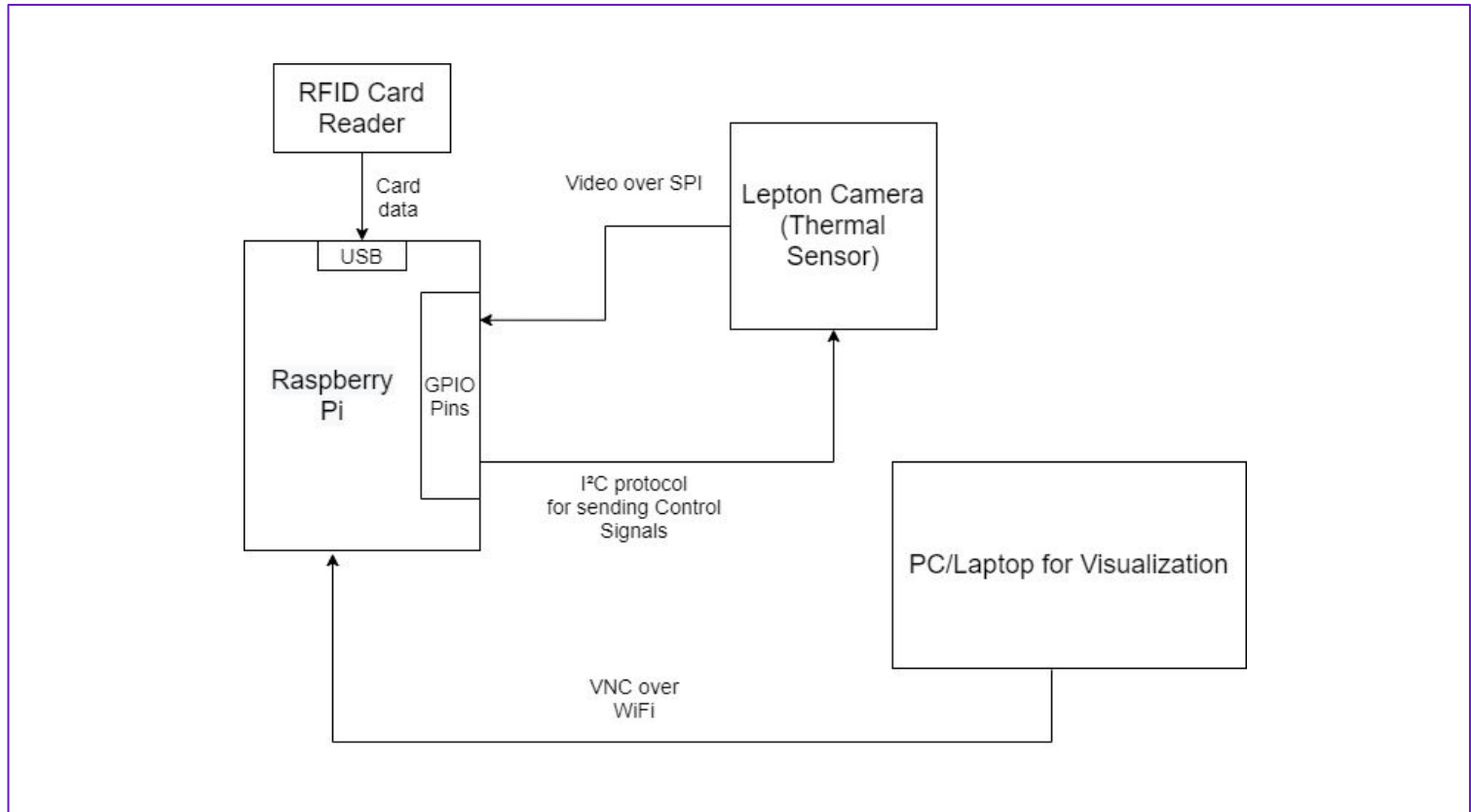
First working prototype

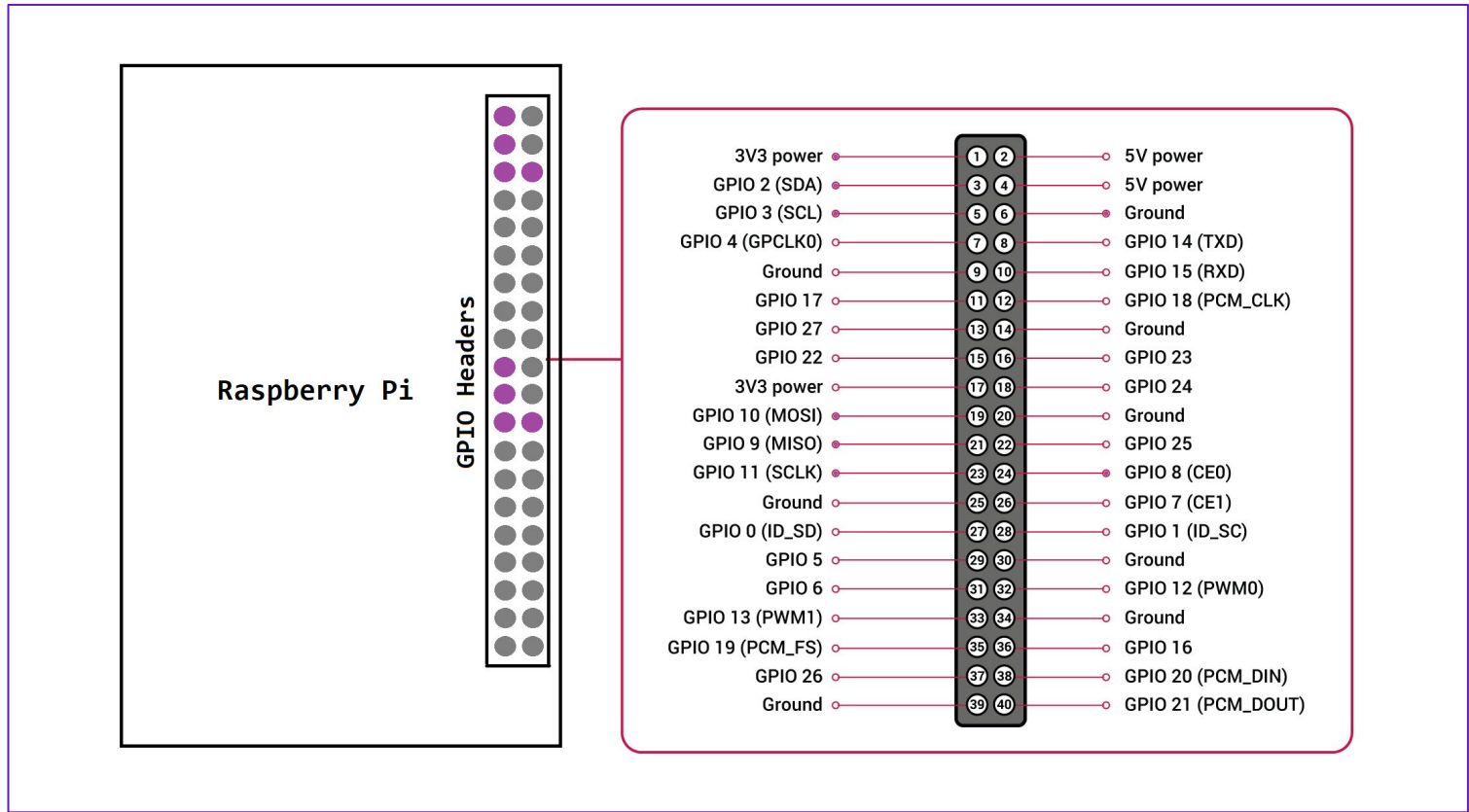Fig: Simplified hardware block diagram for reference (Rev 1)
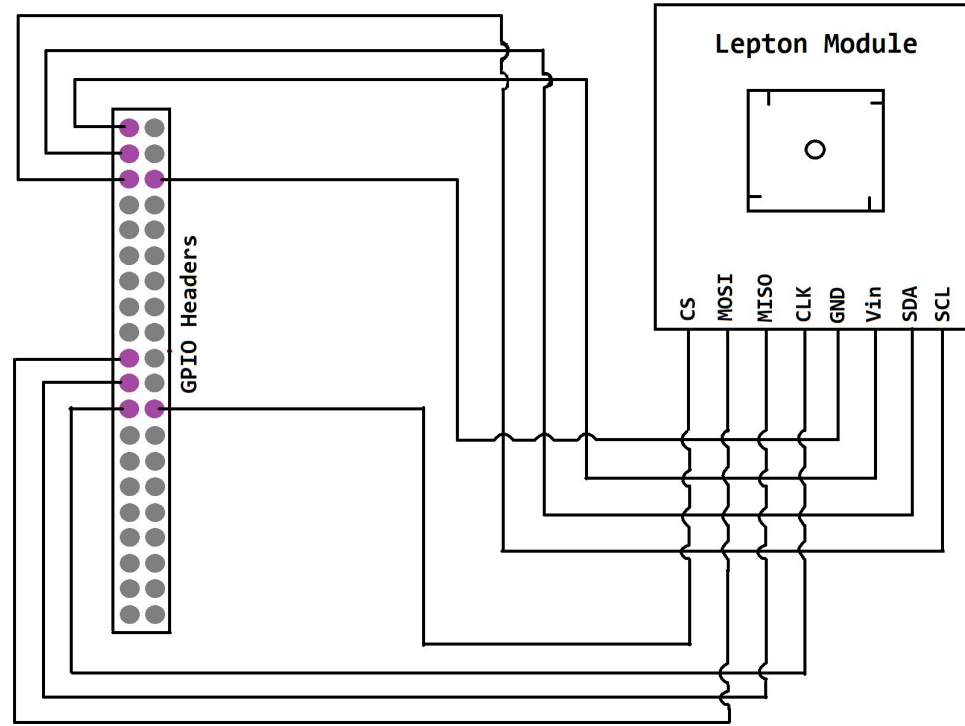
Fig: Reference for Pi GPIO headers

Fig: Circuit diagram - Lepton and Pi (Rev 1 and Rev2)

Most used resources

1. Lepton datasheet

   [https://www.flir.com/globalassets/imported-assets/document/flir-lepton-engineering-datasheet.pdf]

2. Groupgets library for the Lepton module

   [https://github.com/groupgets/LeptonModule]

Project Thermique [Rev. 2]
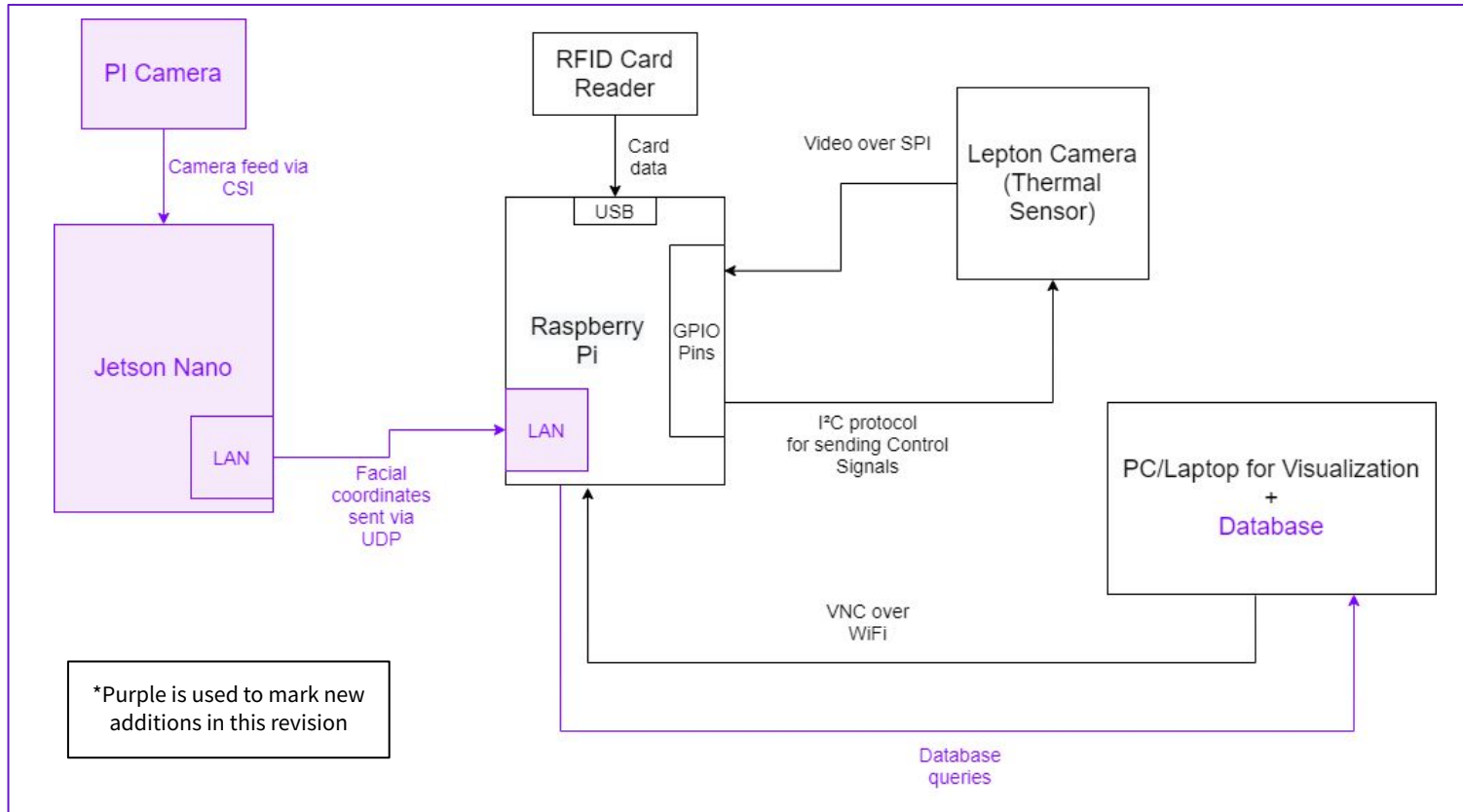
Now with better processing!

Fig: Simplified hardware block diagram for reference (Rev 2)

Project Thermique [Rev. 3]
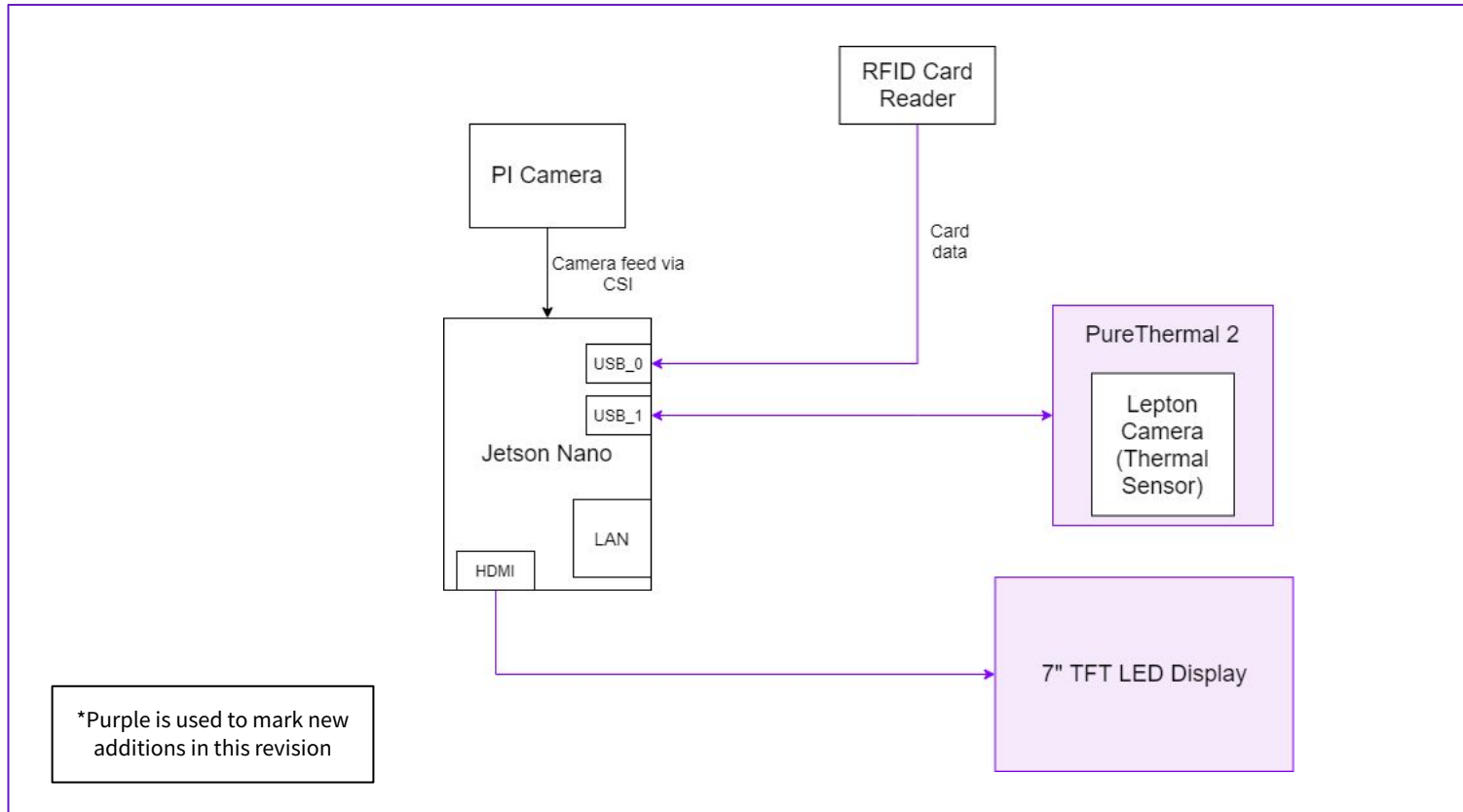
Still in active development...

Fig: Simplified hardware block diagram for reference (Rev 3) // Database connection is implied

Planning of the next steps

As soon as the parts arrive

Updated Scheduling Part 1 of 2

The following are to be started at once, when the equipment arrives:

Week 1:

+   [Ishraq]   Interface the Lepton camera with the Jetson directly
+   [Reza]   Implement facial detection on the Jetson
+   [Munswarim]   Make the REST api on remote PC

Week 2:

+   [Tasnim]   Create the admin panel (web based)
+   [Tashfia]   Handle JSON requests/responses on the front end
+   [Shaqran]   Quality assurance, testing, and overall designing of the UI

Week 3:

+   [Ishraq + Munswarim]   Error correction and experimentation
+   [Reza + Shaqran]   Booth preparation and sensor positioning/calibration
+   [Tasnim + Tashfia]   Commence work on 3D design of the enclosure

Updated Scheduling Part 2 of 2

Week 4

+ [Ishraq + Tasnim]   Database remodelling according to newly obtained data
+ [Reza + Tashfia]   Use LED display as a viewfinder for the Jetson
+ [Munswarim + Shaqran]   Finalize 3D design

Week 5 and onwards:

+ [Everyone]   Field tests, with planned bug fixes

Thank you

If you have any queries, feel free to ask!