



Pico-Projector based Automation

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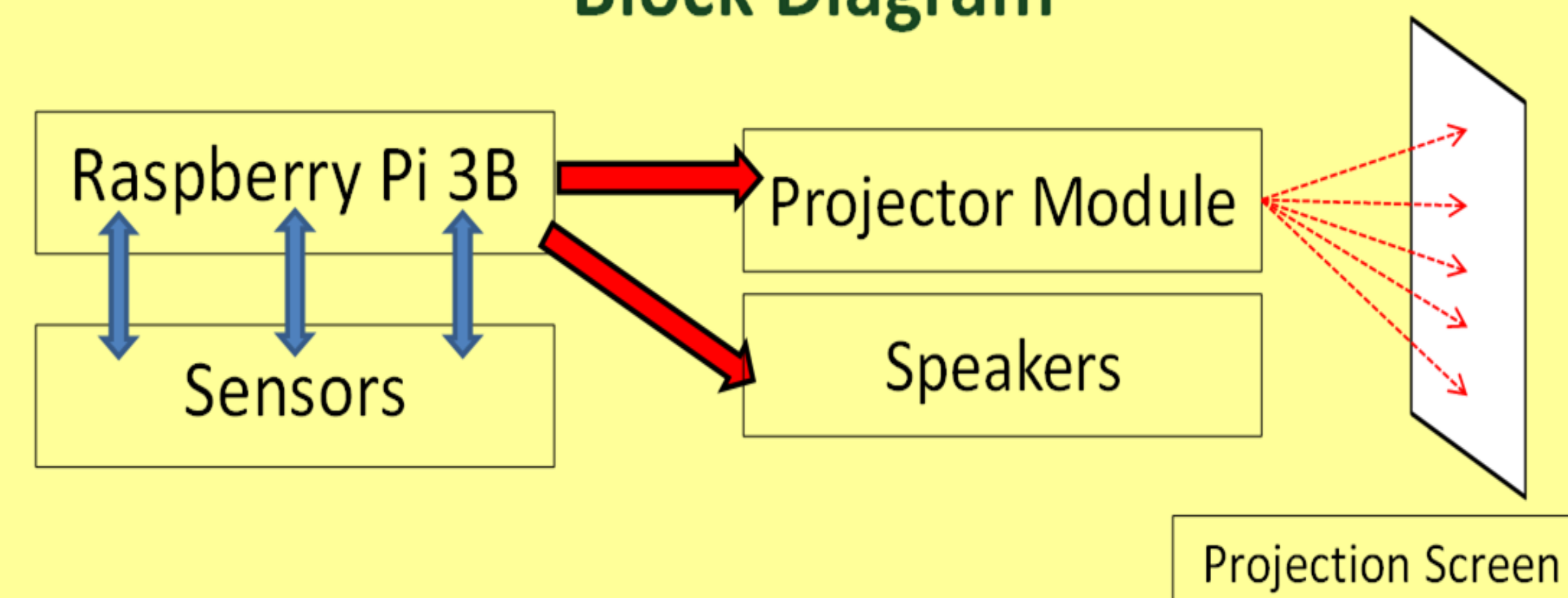


Objective

The aim of this project is to automate a set of tasks with the help of a Pico-projector module, interfaced to a suitable controller device.

Currently, this includes Classroom automation, Real Time video conferencing, and IoT using WebRTC protocols.

Block Diagram



Software Stack

Execution will be carried out by **Raspberry Pi**

* **Linux/Python Scripting + Server-Side programming**

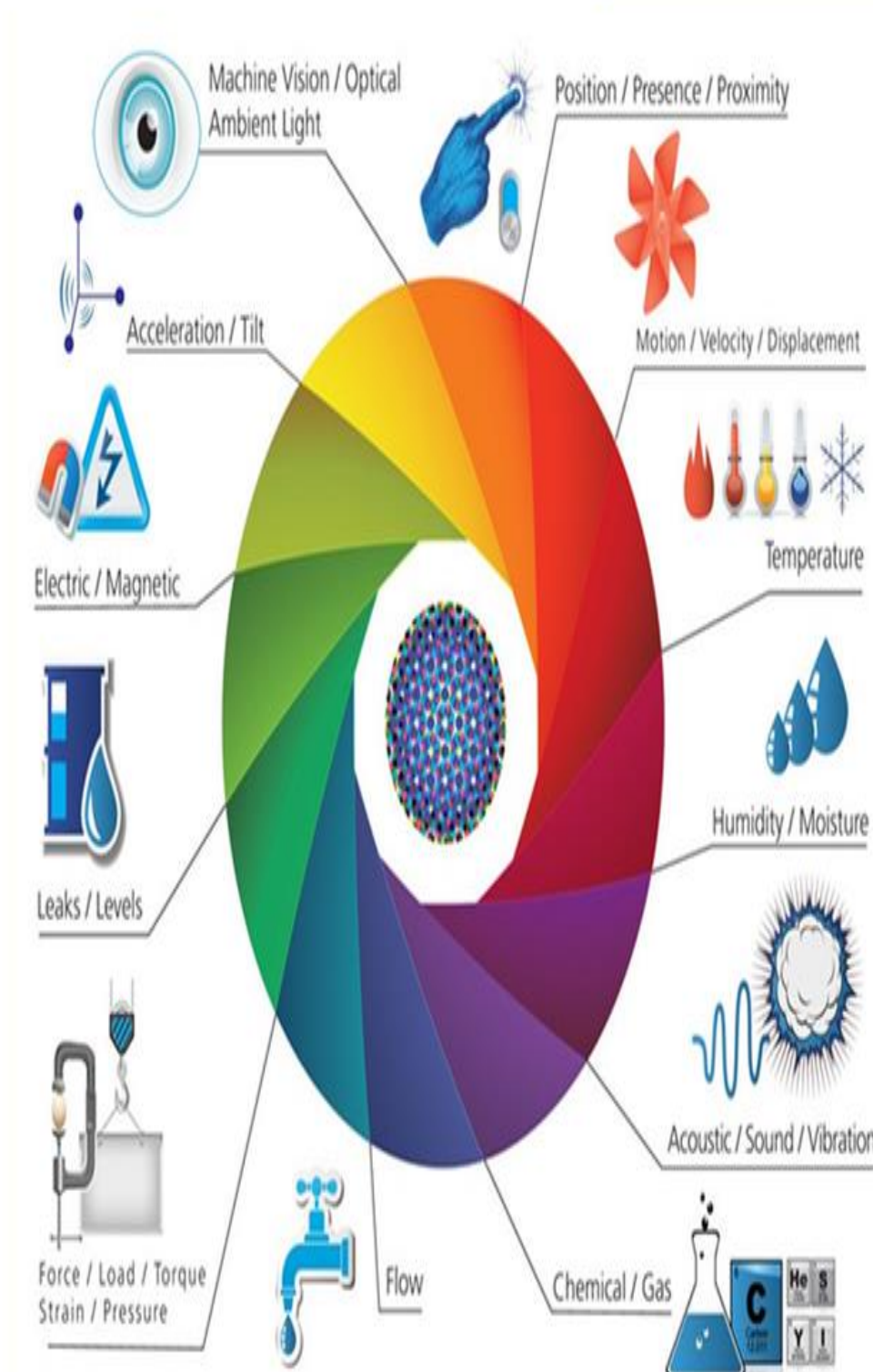
Actions controlled by **PC/Smartphone**

* **Minimal steps for use**

Parts Selection



- * Pico-Projector (DLPDLCR2000EVM)
- * Single Board Computer (RPI3B)
- * Android Device (Smartphone)
- * Sensors (?)



Examples

Classroom Automation

Added Voice-over using TTS support for lecture notes

Broadcast Support

Classroom Content-Sharing Support

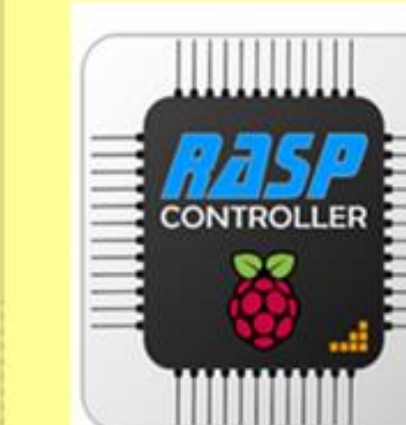
Lab Assistant Support

* Equipment identification & content retrieval using QR codes.

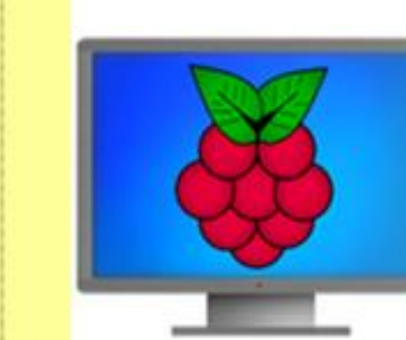
Student Attendance

* Scan barcodes from student ID. Send log as CSV files online.

IoT Controlling



RaspController
Ettore Gallina Tools
Contains ads



Raspicast
Benjamin H. Video Players & Editors



Lab-Assistant SMARTPHONES



To fetch files from VNC Server, navigate to the VNC Server icon in the notification tray or status bar and select **File Transfer** from its shortcut menu.
To change where files fetched to this computer are saved, use the **Fetch files** to drop-down list, below.

Content-Sharing

Send files... Clear Fetch files to: Desktop

Student Attendance



Applications of Pico-Projectors



Mobile device projection



Pico projectors



Wearable displays



Smart home displays



Digital signage



Mobile smart TVs