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DETECTOR FOR UVA/UVB DIFFERENTIATION IN RESEARCH APPLICATIONS

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Need

Primary User: Dr. Erum Ilyas

- UVA and UVB affect skin differently
- Darker skin offers natural UVB protection
- Lighter skin needs protection from both.
- Current preventative solutions do not independently measure UVA and UVB continuously.

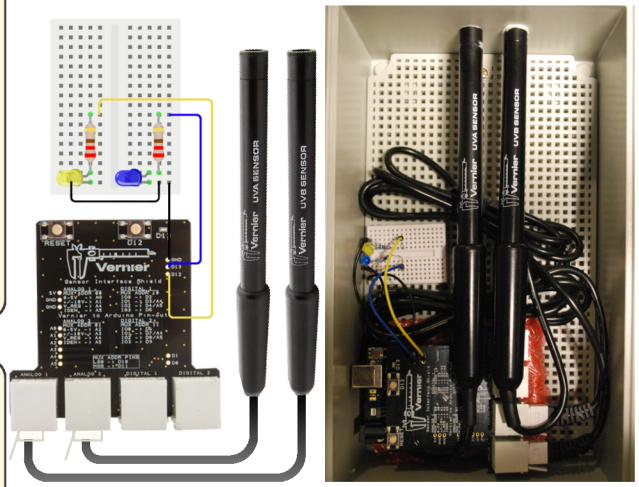
Objective

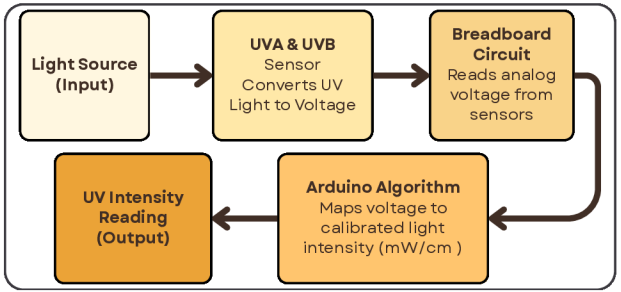
Develop a device that can independently monitor UVA and UVB exposure over time for lab testing conducted by researchers/clinicians.

Design Inputs

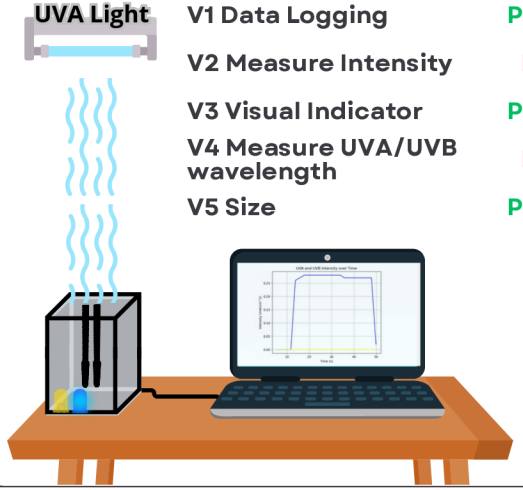
- Measure: UVA (315-400nm) UVB (280-315nm)
- Measure Intensity 0.1 mW/cm^2 to 0.325 mW/cm^2
- Blue LED: UVA Indicator Yellow LED: UVB Indicator
- Store ≥ 2 hours of Data
- Device Size: 35cm x 15cm x 30 cm

Solution





Verification



V1 Data Logging	Pass
V2 Measure Intensity	Fail
V3 Visual Indicator	Pass
V4 Measure UVA/UVB wavelength	Fail
V5 Size	Pass

Impact and Future

- Enhanced UVA/UVB data availability for physicians
- Testing platform UV-protection research
- Measure UVB separately by sourcing appropriate UVB light source