

ELDERLY MONITORING SYSTEM

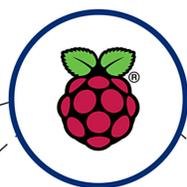
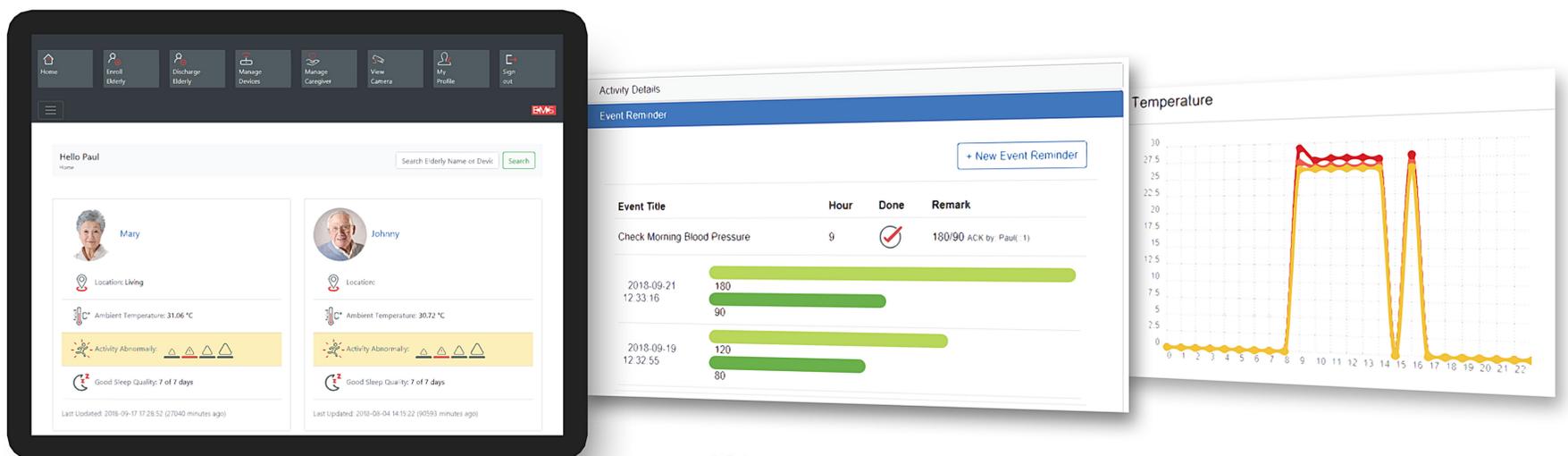
Motivation

In an ageing population[1], most Singapore citizens aged 65 and above prefer not to move into a nursing home. With the low birth rates in Singapore coupled with the increasing healthcare costs and limited healthcare professionals, solutions for "ageing in place" is necessary[2].

Objective

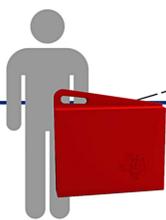
This project aims to develop an elderly monitoring system that empowers caregiver or medical professional with an insight into the elderly condition and day-to-day living.

The project leverage modern technologies in both hardware and software to capture and generate insights through mining and analysis.



EMS Central Hub

Powered By RaspberryPi



Wearable SensorTag

A personalized wearable device provides sensor input to detect a potentially critical situation such as:

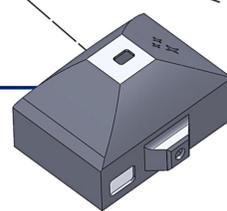
- Elderly Fall
- Anomaly in Elderly Daily Behavior
- Poor Sleep Quality
- Panic Button Activation
- High Ambient Temperature



Video Camera

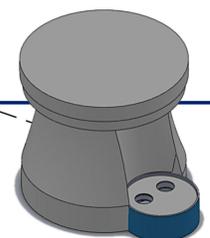
Provide indoor location tracking and live video feed from this device to a laptop or tablet of the caregiver.

Video footage is accessible remotely with video clips organized by time or urgency such as a potential elderly fall.



SleepCam

SleepCam is a product designed to be part of an early warning system. It is mainly used to detect night fever or indoor heatstroke. It monitors the temperature of an elderly by placing the product in areas such as above the pillow and facing the forehead of the elderly.



Pill Station

This device aims to enhance the user experience of the elderly in consuming medication in pill form. Appropriate pills can be loaded and linked with the EMS to remind the elderly to consume their medication. It is also the first in the market for a touchless process of receiving pill medication.

References:

- [1] K. Ng. (2015, June) Singapore feeling impact of rapidly ageing population. [Online]. <https://www.todayonline.com/singapore/singapore-feeling-impact-rapidly-ageing-population?singlepage=true>
- [2] L. Wong. (2015, June) Elderly sick turn to foreign, live-in caregivers.[Online]. <https://www.straitstimes.com/singapore/health/elderly-sick-turn-to-foreign-live-in-caregivers>.

Suitable for: Nursing Home or Home Assisted Living Facility

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