Exploring COVID-19 Robotics Market

Options for future preliminary design

Focus Areas

Public Surfaces

Medical Industry

Office Spaces

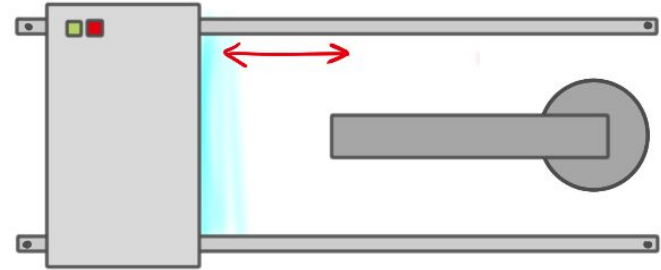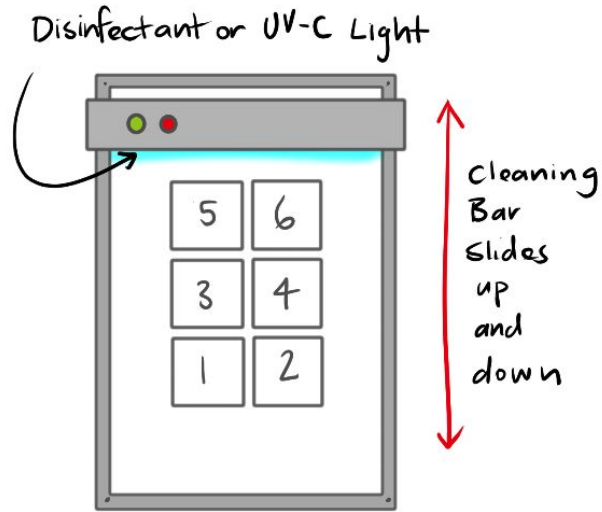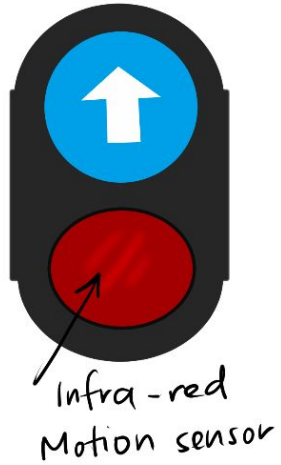Food Stores

Public Surfaces

Current Contactless Solutions

- Automated taps/ hand dryers
- Automated doors
- Automated payment

Areas for Improvement:

- Traffic Light Buttons
- Elevator Buttons
- Door Handles

Public Surfaces

Disinfectant or UV-C Light

Infra-red Motion sensor

Cleaning Bar Slides up and down

Medical Industry

COVID-19 Impacts:

- Staff Shortages
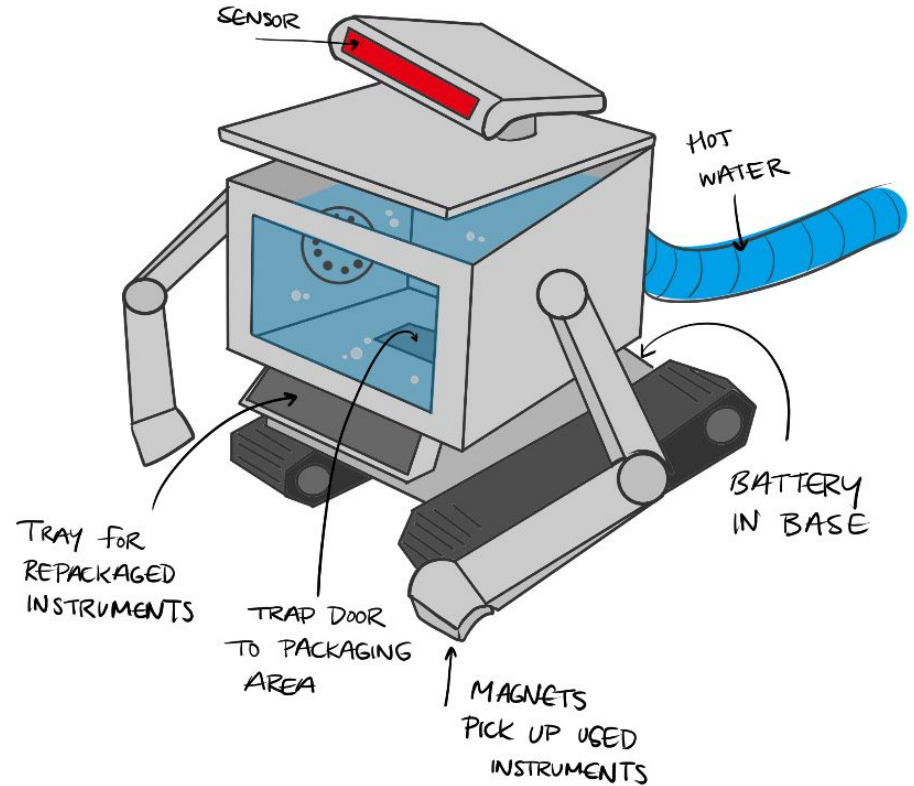- Risk of transmission between wards
- Additional PPE procedures

Competition:

- Nursing/monitoring robots
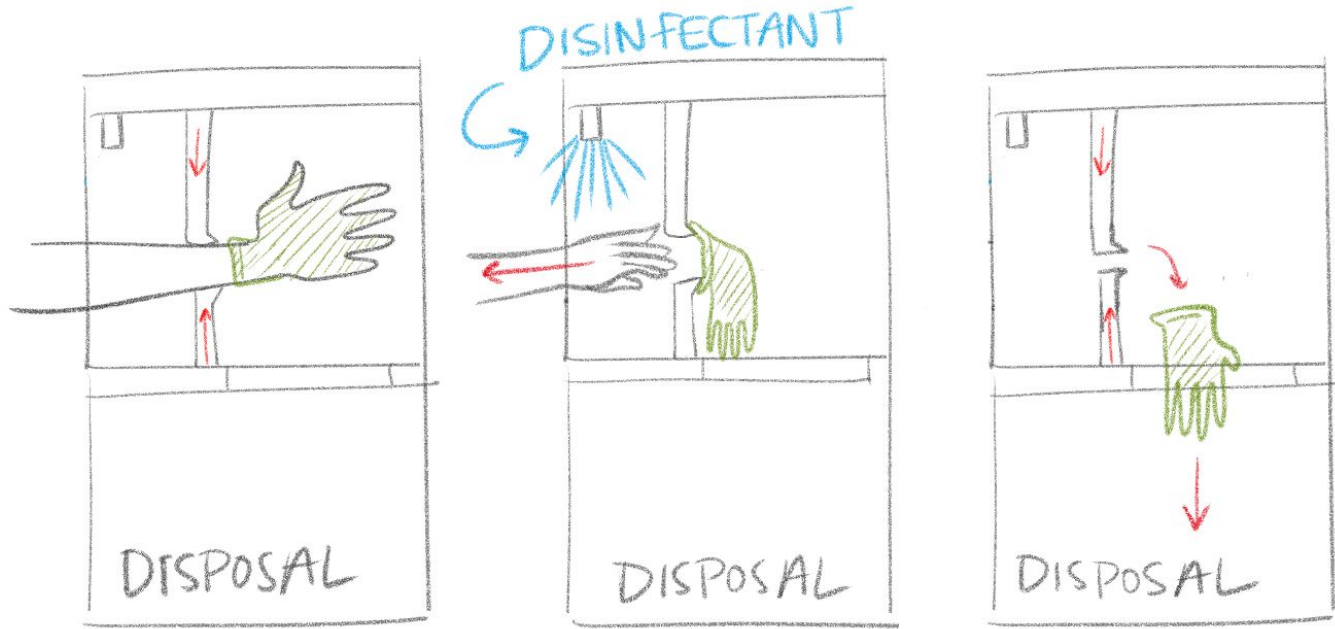- Medication and food delivery robots
- Surgery robots

Medical Industry - Cleaning

- Staff are responsible for the collection, cleaning and distribution of medical instruments.

- Existing medical instrument washers are bulky.

- Aims to reduce the turnaround time for cleaning

SENSOR

HOT WATER

TRAY FOR REPACKAGED INSTRUMENTS

TRAP DOOR TO PACKAGING AREA

BATTERY IN BASE
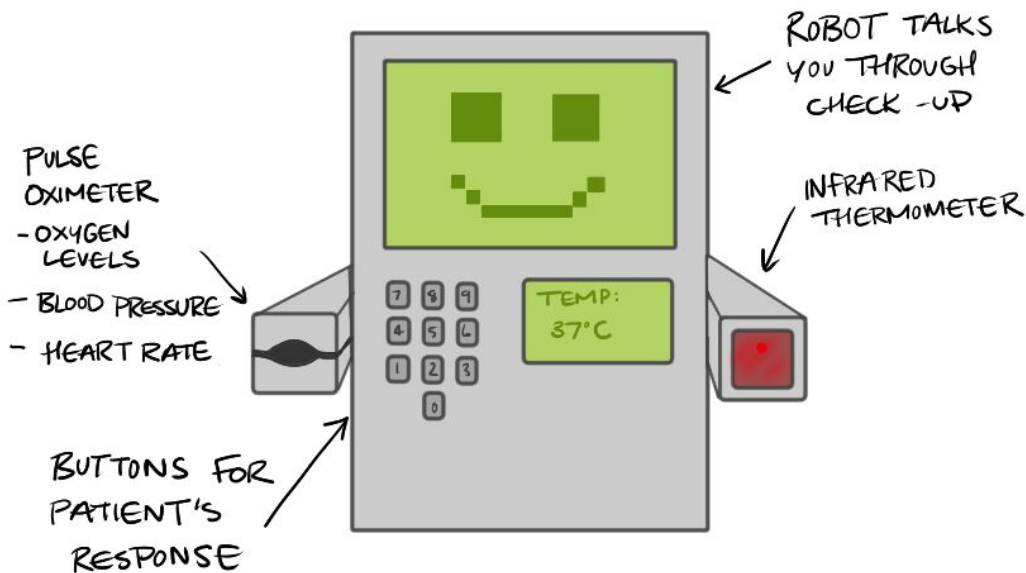
MAGNETS PICK UP USED INSTRUMENTS

Medical Industry - PPE Removal

Medical Industry - At Home Monitoring

- Simple health checks

- Asks series of wellness questions

- Sync with phone and record data

- Alert medical professionals if reach dangerous levels

Automated Office Cleaning

Current Areas of Competition:

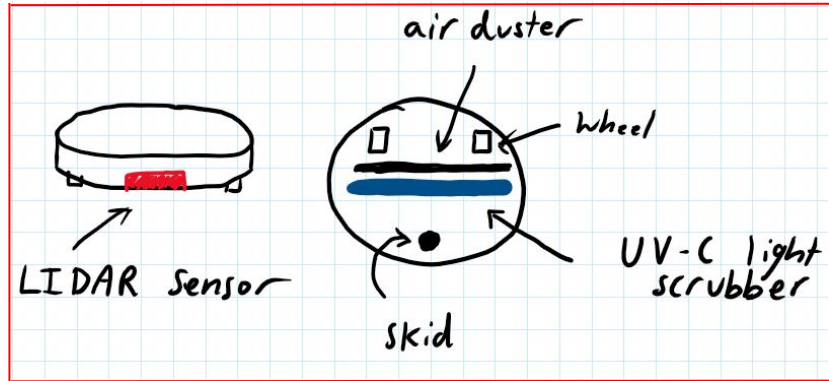- Air Purification Devices

- Floor Cleaning Robots
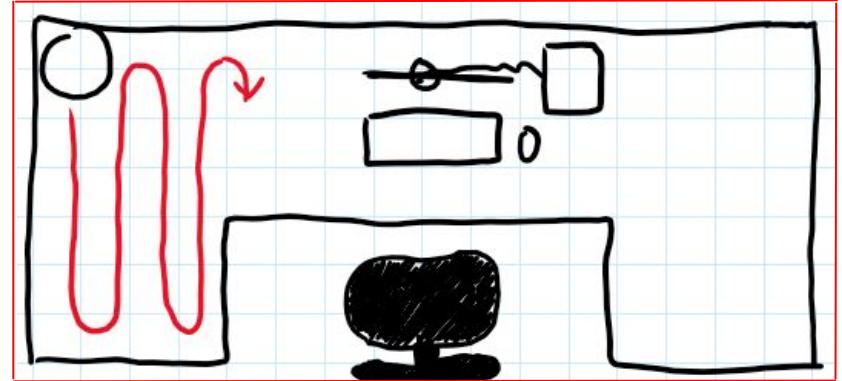

Free Market Areas:

- Desktop Disinfection

- Keyboard Cleaning

Desktop Disinfector Robot

Robot Function
- LIDAR to detect table top edges
- Map the desktop edges
- Clean full desktop surface
- Return to charging station

Robot Options
- UV-C disinfection
- Spray and wipe function - (requires refilling and larger size)
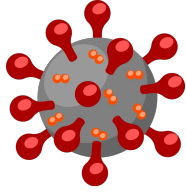- Hoover/air duster function for dust

Keyboard Cleaner

- Hi-touch areas are an area of concern for COVID-19.
- Requires frequent cleaning
- Open offices benefit the most from regular cleaning

- Automated solutions such as a keyboard cleaner offer scheduled and frequent cleaning and do not require human contact.
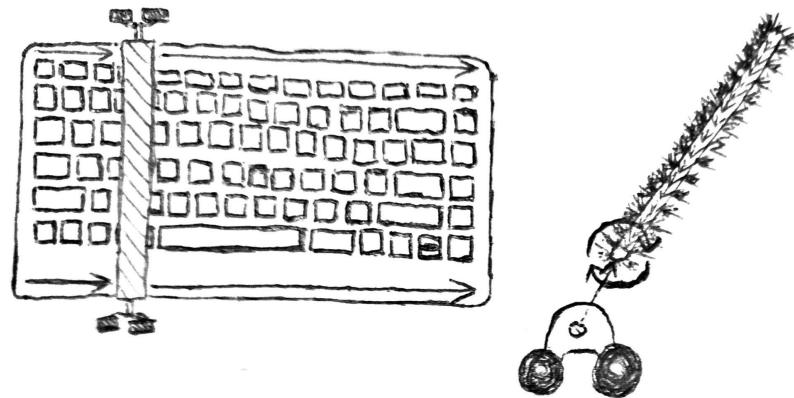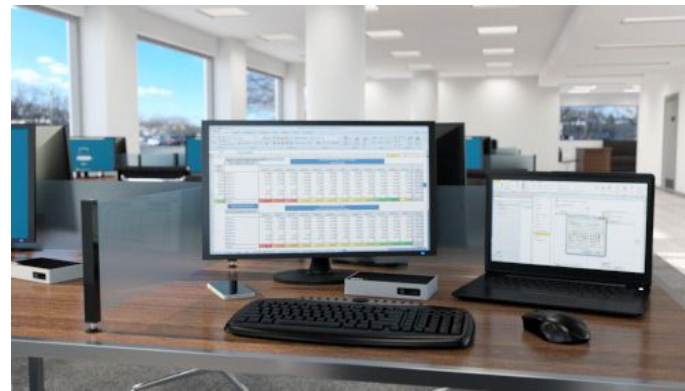
Supermarket Automation

COVID-19 Impact:

- Online orders
- Too many orders not enough staff
- Social distancing and people in stores
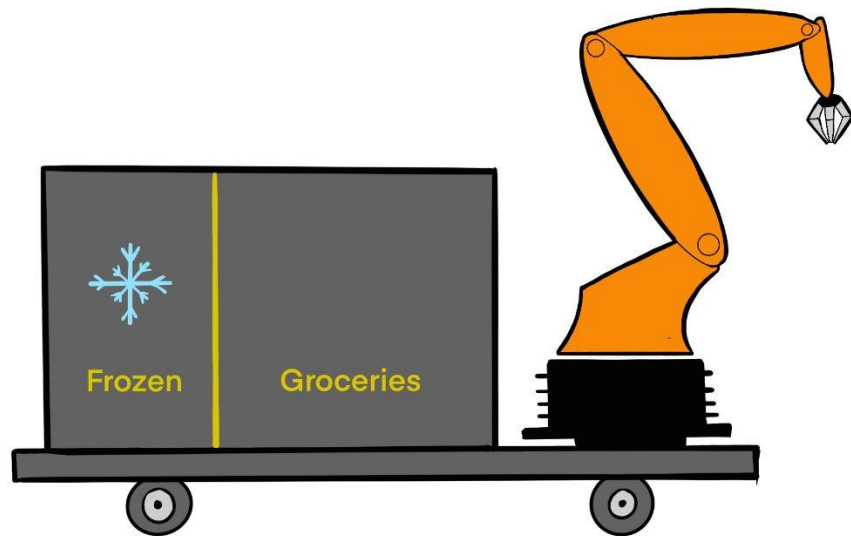- It is becoming a popular alternative.

Competition:

- Fully Automated Supermarket redesign
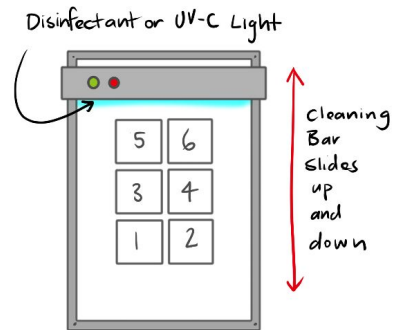- Japanese robot that stacks shelves
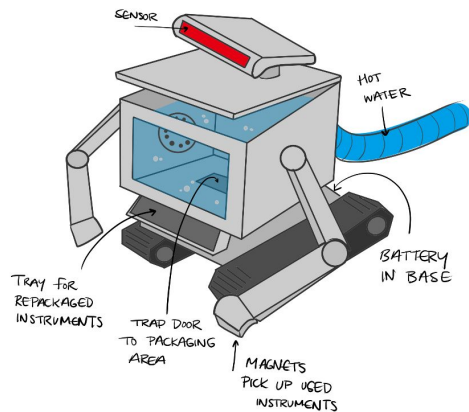
Supermarket Automation

What can we do?

- Robot that stacks/packs shopping
- Database about where everything is
- Mechanical arm that can grab items
- Some way of packing up groceries
- Need to reduce amount of people in stores while making the experience more convenient and less frustrating
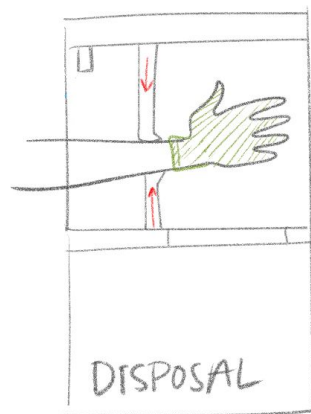
Frozen   Groceries
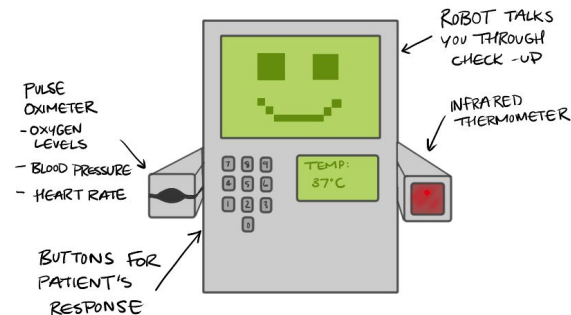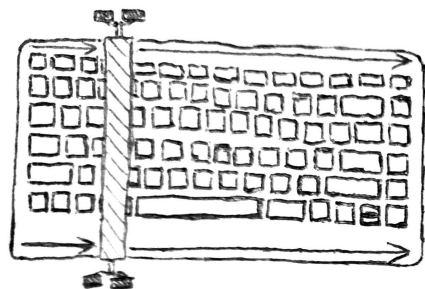
Main Ideas

Surface Cleaners

Disinfectant or UV-C Light

Cleaning Bar Slides up and down

Equipment Cleaners

SENSOR

HOT WATER

TRAY FOR REPACKAGED INSTRUMENTS

TRAP DOOR TO PACKAGING AREA

MAGNETS PICK UP USED INSTRUMENTS

BATTERY IN BASE

PPE Removal

DISPOSAL

Home Monitoring

ROBOT TALKS YOU THROUGH CHECK-UP

INFRARED THERMOMETER

PULSE OXIMETER
- OXYGEN LEVELS
- BLOOD PRESSURE
- HEART RATE

BUTTONS FOR PATIENT'S RESPONSE

TEMP: 37°C

Desk Cleaner

LIDAR Sensor
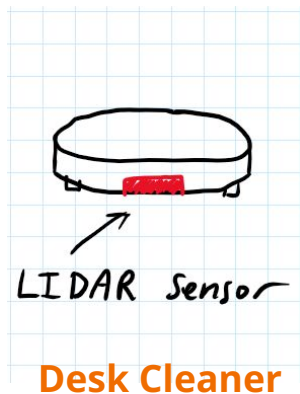
Keyboard Cleaner

Shopping Robot

Frozen   Groceries