Monitor and Filter Data

DATA CONTROL

Use case name:	Monitor and Filter Data
User stories:	3, 1, 5, 6, 9, 14, 15, 16
Level:	View data recorded
Primary actor:	User
Stakeholders and interests:	The actor wants to view measurement data from different devices over time.
Precondition:	The actor must be logged in, connected to the server and have a device added.
Success guarantee:	The actor has been provided with a visual representation of the information of the specific sensor and a time frame on a chart.
Main success scenario:	(see table below)

| User	System
1. Selects a device by name (device card shows latest measurements)	1.1. The system opens the selected device showing the latest information from all the sensors (temperature, humidity, CO_2, light).
2. Selects Humidity 2.1.a. Selects a time frame - 15mins - 1hr - 24hrs - 1week - 1year	2.1. The system opens a Humidity page populated with the latest recorded data about humidity over time. 2.2.a The system displays the data according to the selected time frame
3. Selects Light	3.1. The system opens Light page and displays

		if the light is off or on
	3.1.a. Selects a time frame - 15mins - 1hr - 24hrs - 1week - 1year	3.2.a The system displays the data according to the selected time frame showing the pattern of on and off hours
	4. Selects Temperature 4.1.a. Selects a time frame - 15mins - 1hr - 24hrs - 1week - 1year	4.1. The system opens Temperature page populated with the latest recorded data 4.2.a The system displays the data according to the selected time frame
	5. Selects CO2 5.1.a. Selects a time frame - 15mins - 1hr - 24hrs - 1week - 1year	5.1 The system opens CO2 page populated with the latest recorded data 5.2.a The system displays the data according to the selected time frame
PostCondition	The information requested is displayed in a line chart on the UI.	
Extensions	*a At any time the user uses internet connection 1. The system displays the latest data saved for humidity locally on the application 2. The system displays the latest data saved for temperature locally on the application 3. The system displays the latest data saved for CO2 locally on the application 4. The system displays the latest data saved for light locally on the application	

Additional description for secondary Actor: Data Analyst

Data presentation:

- As a data analyst of the business, I want to be able to see the temperature, humidity, CO2 and light data of all my greenhouses in a single dashboard so that I can compare the data.
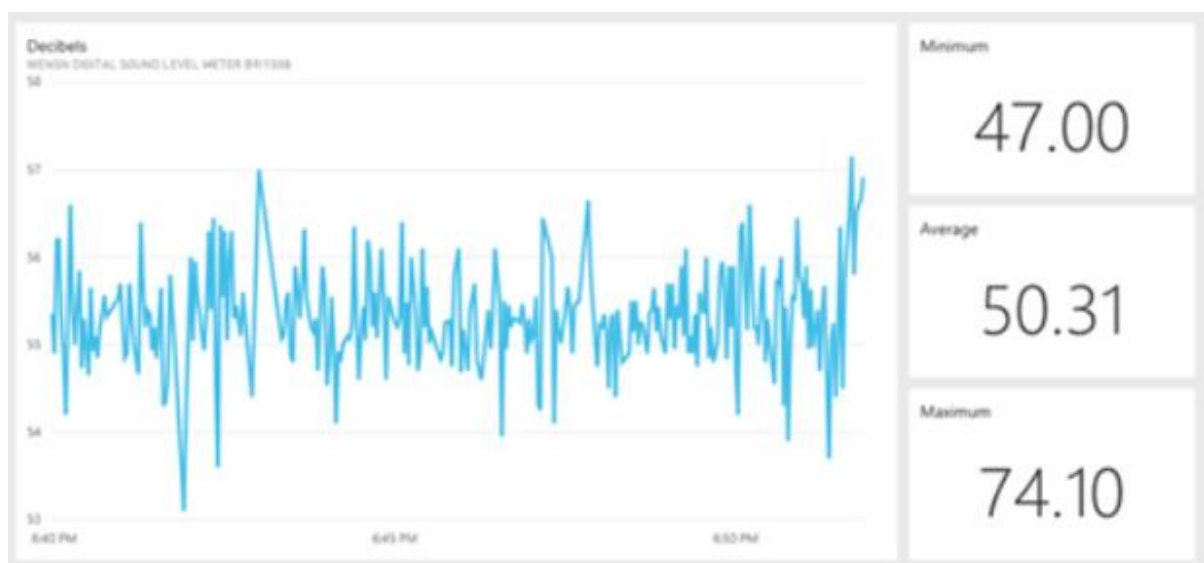
- As a data analyst of the business, I want to get the minimum, maximum and the median temperature data of the greenhouse collected from the beginning to the latest recorded data.

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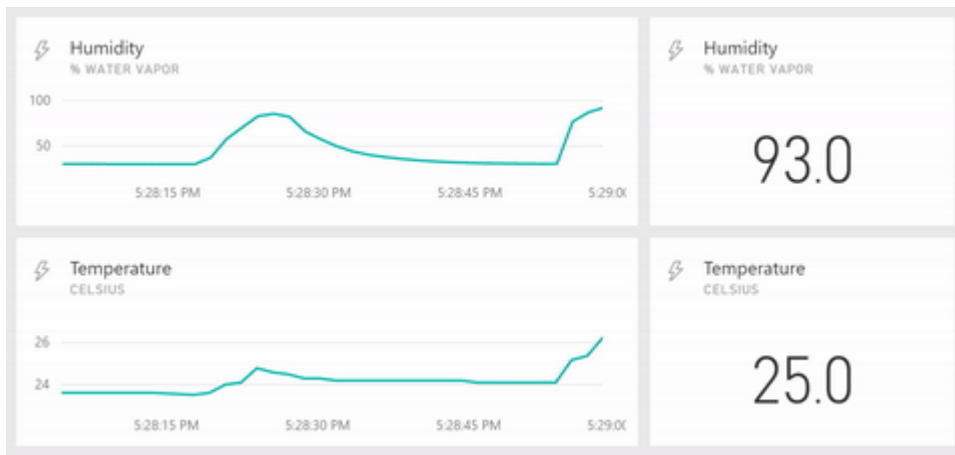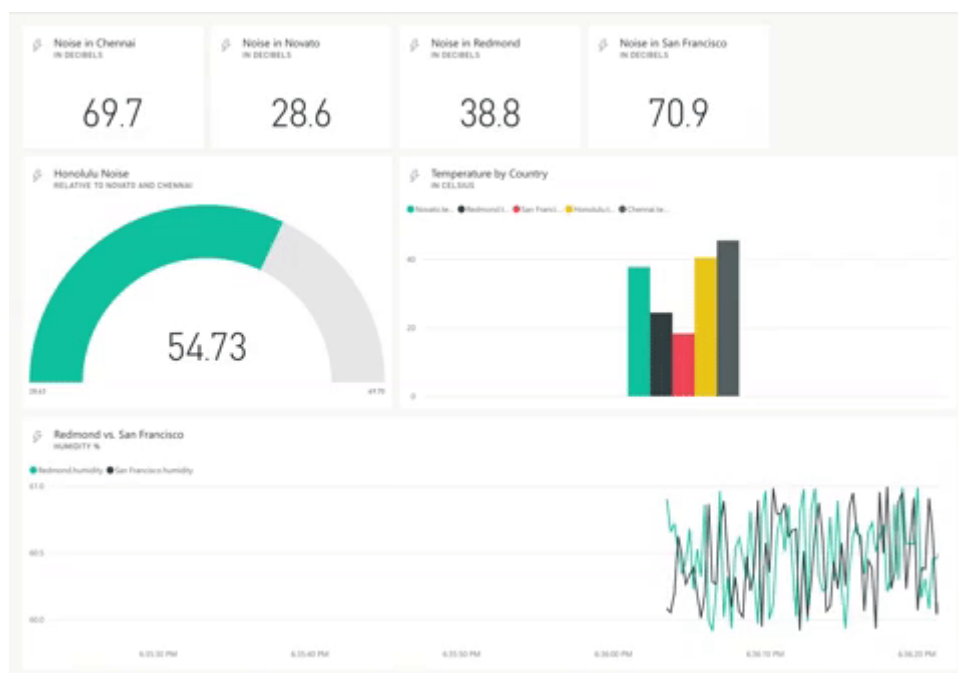
- **As a data analyst of the business, I want the real time data shown in the dashboard.**

The other significant part is generating valuable insights from this data, helping people understand their business in a much better way. Using Power BI to get deep insights on this data can help you make intelligent decisions to improve your existing process and productivity.

Questions in greenhouse data - Greenhouse Canada → worth reading for powerBI

Manage devices

Use case name:	Manage devices
User stories:	18,19, 20
Level:	Managing list of devices
Primary actor:	User
Stakeholders and interests:	The actor wants to manage devices and group them together in a greenhouse
Precondition:	The actor must be logged in and connected to the server.
Success guarantee:	The actor has added, altered or edited a device
Main success scenario:	

User	System

1. User adds a newly installed device on a currently non-existing location
  1.1 User enters the device EUI
  1.2 User enters the name of the device
  1.3 Enters target temperature
  1.4 Enter target humidity
  1.5 Enter target CO2
  1.6 Enter target lighting
  1.7 Enter min and max temperature
  1.8 Enter min and max humidity
  1.9 Enter min and max CO2
  1.10 Enter min and max lighting
	1. The system creates a new greenhouse with the new device installed

	2. The user adds a newly installed device to an already existing greenhouse 2.1 Selects a greenhouse from the list which represents the location of the device to be installed 2.2 Selects to create a new device in the greenhouse 2.3 User enters the device EUI 2.4 User enters the name of the device 2.5 Enters target temperature 2.6 Enter target humidity 2.7 Enter target CO2 2.8 Enter target lighting 2.9 Enter min and max temperature 2.10 Enter min and max humidity 2.11 Enter min and max CO2 2.12 Enter min and max lighting	2.The systems open the view for the selected greenhouse 2.1. The newly installed device si saved and created in the chosen greenhouse
	3. The user removes a device 3.1 Choses a greenhouse with the device to be removed 3.2 Choose a device to remove 3.3 Click on the remove CTA	3. The system displays a greenhouse and the list of devices inside the greenhouse 3.1 The system removes the selected device from the list of devices in the greenhouse

	4. The user edits a device	4. The system displays a greenhouse and the list of devices inside the greenhouse
	4.1 Choose a greenhouse containing the device to be edited	4.1. The system displays the information associated with the device chosen
	4.2 Choose the device to be edited	4.2 The system saves the newly edited information of the device
	4.3 Edits the information associated with the device	
	4.4 Saves the edited information	4.3 The device information is updated accordingly in the list of devices

PostCondition	The information requested is displayed in a line chart on the UI.

Extensions	*a At any time the user uses internet connection
	    The system displays the latest data saved for humidity locally on the application
	    The system displays the latest data saved for temperature locally on the application
	    The system displays the latest data saved for CO2 locally on the application
	*3 The devices being removed is the only one in the greenhouse
	    The system deletes the greenhouse associated with the removed device
	*4 The new information being saved has empty fields
	    The system displays an error message warning the data should be provided

Regulate environment

Use case name:	Regulate environment
User stories:	7, 21
Level:	System
Primary role:	Environment
Stakeholders and interests:	The system acts on environmental impact, to regulate the environmental conditions in the greenhouse. The user is able to manually operate actuators.
Precondition:	1.The application is connected to the server. 2. The device is set up in the system with threshold values.
Success guarantee:	The operation is executed successfully within the timeframe needed. For user actions, a time delay up to around 5 minutes is expected.
Main success scenario:	

User	System
	1.0. The device is continuously measuring environmental sensor values.
	1.1. System is comparing sensor values with threshold values.
	1.2. If threshold value not is reached, go back to step 1.0. else continue to step 1.3.
	1.3. System operates korsponding actuator.
2.0. Select "device".	

	2.1. Press on selected function, to execute function on device	2.2. System operates korsponding actuator.
PostCondition	The actor is notified about actuator status in the next received message. If the user has activated the actuator, the message will be delayed to the following data packet received.	
Extensions		
Notes	● Environmental impact is considered as heat, humidity, co2 level, Illumination.	