



Smart Cities Hackathon Tier 1 Challenge 2

Challenge 2: Create Analytics Widgets

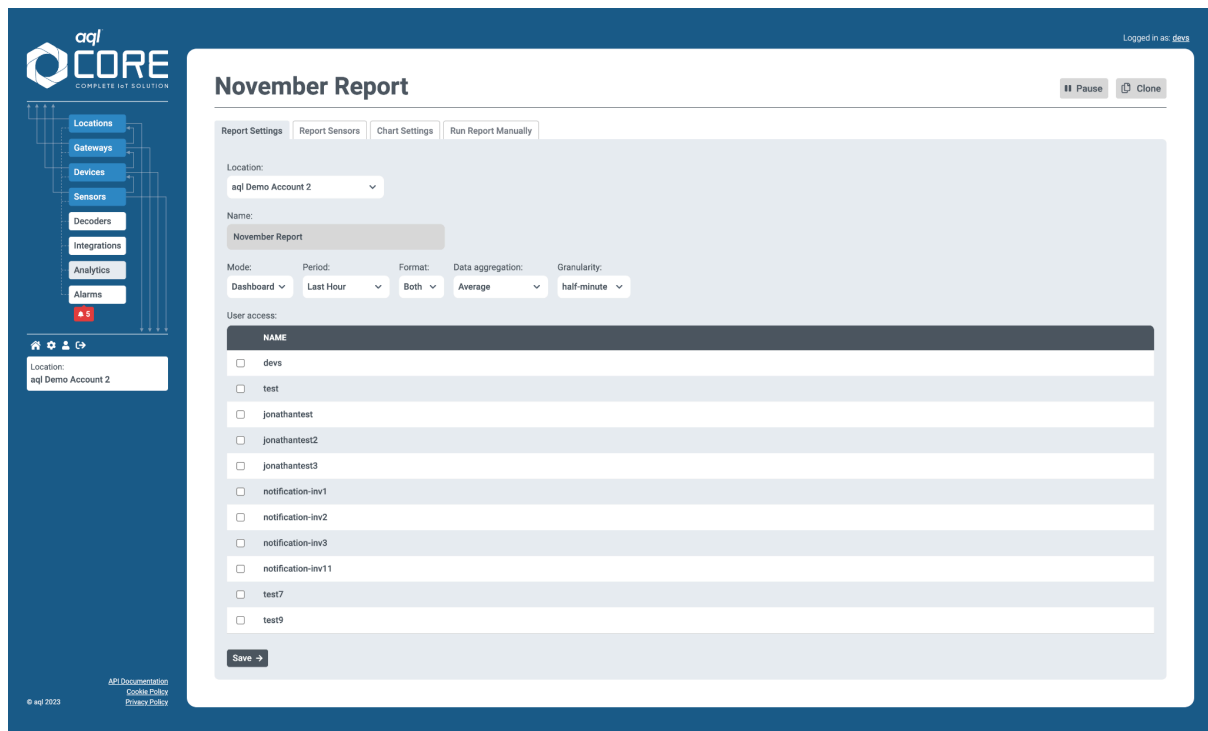
In this challenge, you will choose a selection of sensors from the differing samples and you will create a series of Widgets. Can you create a line, scatter, and bar chart with multiple Y Axis?

Step 1

Before creating your analytics widget, it will be beneficial to browse through the available devices and their respective sensor readings. This will show you relevant data that you may want to present within your analytics widget. To view a device's sensor readings, navigate to the "Devices" section on the left-hand menu and select a device from the table. Then, you will be presented with a list of that device's available sensors. Selecting a sensor will present you with a graph that charts the sensor's readings. Once you see some sensors you wish to add to your analytics, make a note of the device name. This is so you can add this later on.

Step 2

Navigate to the "Analytics" section from the menu on the left, and select the "Add Analytics Report" button in the top right of the page. Enter a name and description for your team's analytics widget and select a desired location from the location field. It's important to select the location that has the devices you wish to use for this challenge.



The screenshot shows the aqi CORE dashboard. On the left is a navigation menu with options: Locations, Gateways, Devices, Sensors, Decoders, Integrations, Analytics, and Alarms. The 'Analytics' section is highlighted. The main content area is titled 'November Report' and includes tabs for 'Report Settings', 'Report Sensors', 'Chart Settings', and 'Run Report Manually'. The 'Report Settings' tab is active, showing a 'Location' dropdown set to 'aqi Demo Account 2'. Below this is a 'Name' field with the value 'November Report'. Further down are dropdowns for 'Mode' (set to 'Dashboard'), 'Period' (set to 'Last Hour'), 'Format' (set to 'Both'), 'Data aggregation' (set to 'Average'), and 'Granularity' (set to 'half-minute'). At the bottom is a 'User access' section with a table of users and checkboxes for selection. The users listed are: devs, test, jonathantest, jonathantest2, jonathantest3, notification-inv1, notification-inv2, notification-inv3, notification-inv11, test7, and test9. A 'Save' button is at the bottom right of the configuration area.

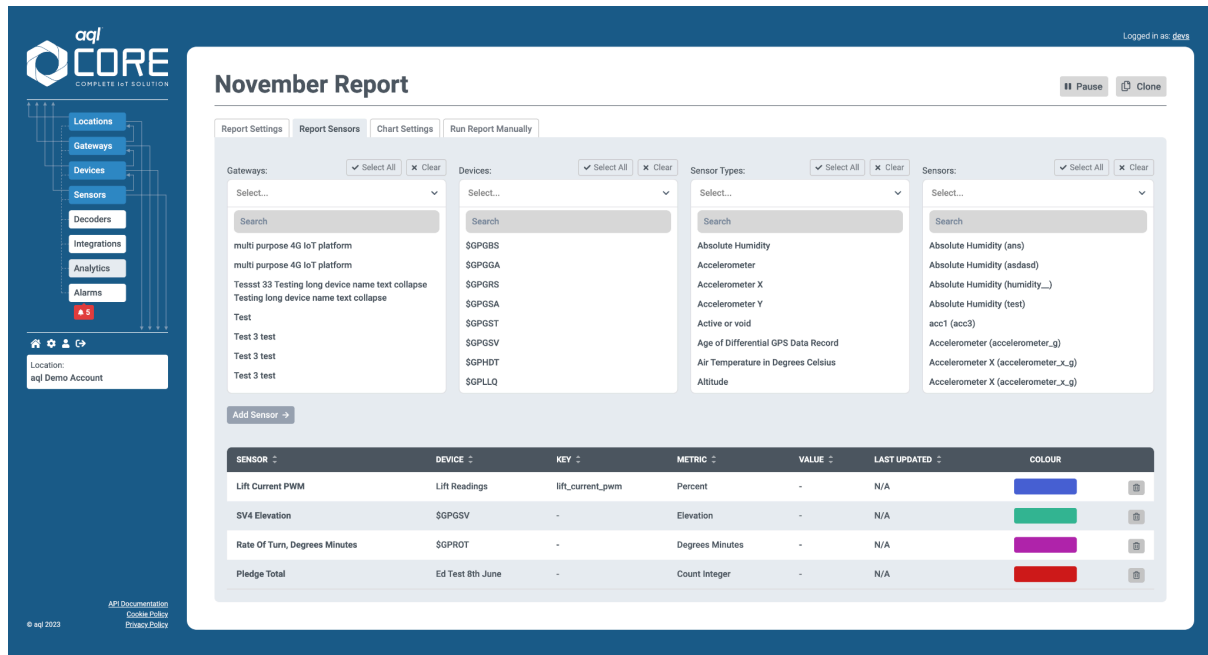
NAME	Access
devs	<input type="checkbox"/>
test	<input type="checkbox"/>
jonathantest	<input type="checkbox"/>
jonathantest2	<input type="checkbox"/>
jonathantest3	<input type="checkbox"/>
notification-inv1	<input type="checkbox"/>
notification-inv2	<input type="checkbox"/>
notification-inv3	<input type="checkbox"/>
notification-inv11	<input type="checkbox"/>
test7	<input type="checkbox"/>
test9	<input type="checkbox"/>

Step 3

From the "Configure" tab of your analytics: choose the data period, data aggregation, and granularity you want to use for your widget. "Mode" will need to be "Dashboard" for the purpose of this exercise.

Step 4

On the second tab, select the sensors you wish to include in the widget. You can allocate individual colours to set themes of colours based on the type of sensor. Remember to select “change” after picking a colour. Try the search box to help filter a selection of sensors based on the sensor key. For example, you may want temperature and humidity sensors on a widget to have the same colours on the chart. When these render you can select the sensor from the location dashboard and the widget will auto filter to the chosen sensor.

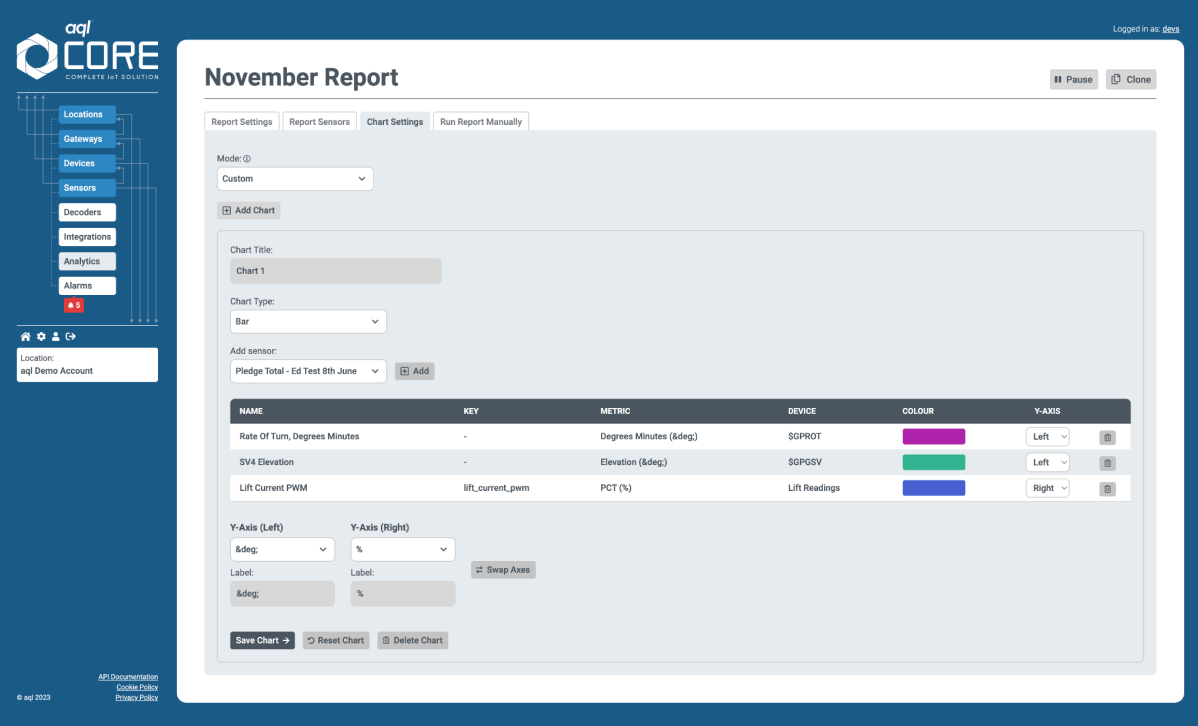


The screenshot shows the 'November Report' interface in the aqi CORE system. The left sidebar contains navigation links: Locations, Gateways, Devices, Sensors, Decoders, Integrations, Analytics, and Alarms. The main content area has tabs for Report Settings, Report Sensors, Chart Settings, and Run Report Manually. The 'Report Sensors' tab is active, showing four selection panels: Gateways, Devices, Sensor Types, and Sensors. Below these panels is an 'Add Sensor' button and a table of selected sensors.

SENSOR	DEVICE	KEY	METRIC	VALUE	LAST UPDATED	COLOUR
Lift Current PWM	Lift Readings	lift_current_pwm	Percent	-	N/A	Blue
SV4 Elevation	\$GPGSV	-	Elevation	-	N/A	Green
Rate Of Turn, Degrees Minutes	\$GPRDT	-	Degrees Minutes	-	N/A	Purple
Pledge Total	Ed Test 8th June	-	Count Integer	-	N/A	Red

Step 5

Finally, select the charts tab and select the type of chart you wish to render. If you have chosen multiple sensors you can add two Y axes to the widget. Select “Custom” under the mode dropdown for increased functionality, name the chart, make necessary amendments and then select “Save” to save chart.



The screenshot shows the aqi CORE dashboard interface. On the left is a sidebar with navigation links: Locations, Gateways, Devices, Sensors, Decoders, Integrations, Analytics, and Alarms. Below these is a 'Location' dropdown set to 'aqi Demo Account'. The main content area is titled 'November Report' and includes tabs for Report Settings, Report Sensors, Chart Settings, and Run Report Manually. The 'Chart Settings' tab is active, showing a configuration for a bar chart. The chart is titled 'Chart 1' and is set to 'Bar' type. A sensor is added: 'Pledge Total - Ed Test 8th June'. Below this is a table of sensors:

NAME	KEY	METRIC	DEVICE	COLOUR	Y-AXIS
Rate Of Turn, Degrees Minutes	-	Degrees Minutes (°)	\$GPRDT	Purple	Left
SV4 Elevation	-	Elevation (°)	\$GPGSV	Green	Left
Lift Current PWM	lift_current_pwm	PCT (%)	Lift Readings	Blue	Right

At the bottom, there are options to 'Save Chart', 'Reset Chart', and 'Delete Chart'. The footer includes '© aqi 2023' and links to 'API Documentation', 'Cookie Policy', and 'Privacy Policy'.

Step 6

If you now navigate to the specified location you will see your custom analytics widget. You can create a custom dashboard by adjusting the size and position of the widgets. Try selecting a device from the devices widget and see how it updates your charts in real time.

Well done! Challenge 2 is now complete.