



Data Logging Tutorial

Overview

Logging and on-board storage of the data being measured is a unique feature of the Kookaberry.

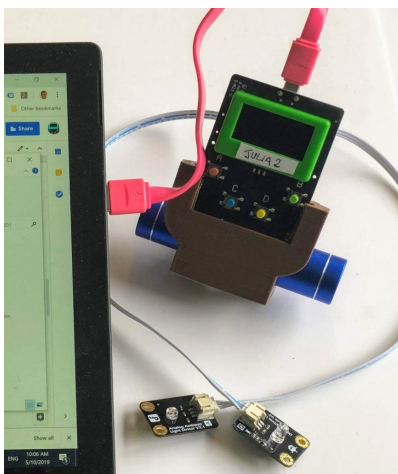
In this tutorial the LightMe app will be used to measure the level of ambient light over time. The measured values will then be uploaded to a computer and displayed as a graph in an Excel spreadsheet.

Checking the sampling interval

First we must check that the data sampling interval is appropriate for the measurements being made.

The default interval between the writing (logging) of each data measurement into the USB memory is 2 seconds. This means that every 2 seconds the measured value is recorded and stored. For instance, if we were to measure the temperature variation on our back patio, we might choose to sample every 30 minutes. In this demonstration we will sample at the default interval of 2 seconds.

Step 1



Connect a Kookaberry to your computer using the USB/MiniUSB lead as shown to the left

The contents of the USB memory will then be displayed as shown in the screenshot below

In this screenshot, Kooklog contains the data measured when this app was switched on. The other data file, KPL004, contains data logged whilst running another app and can be deleted if not required.

<input type="checkbox"/>	Name	Date modified	Type	Size	
	app	5/08/2019 6:52 PM	File folder		Kookaberry Log for JULIA2 Time, Light, Category, Switch 0, 20, Dark, On 2, 20, Dark, On
	lib	27/07/2019 5:07 P...	File folder		
	Kappconfig	1/10/2019 4:32 PM	Text Document	1 KB	
	KLP004	1/01/2080 1:00 PM	Microsoft Excel Co...	2 KB	
<input checked="" type="checkbox"/>	Kooklog	1/01/2080 1:00 PM	Microsoft Excel Co...	1 KB	
	Ktime	1/01/2080 1:00 PM	Text Document	1 KB	
	README	23/04/2019 2:20 P...	File	5 KB	



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Step 2

Open the Kappconfig file by double clicking on it. The Intv field (highlighted below) can be edited to suit the measurement context. 2 secs is the default value and works well for this LightMe data logging demonstration.

If the interval is changed, then the file has to be saved by clicking on File and clicking on Save.

```

Kappconfig - Notepad
File Edit Format View Help
Name = JULIA2           #name - only first name is used
Surname = xxxxxx       #surname - family name
Dur = 600              #may be ignored by some apps
Intv = 2               #sampling interval

```

Reading the ambient light level

Step 1

Connect a Kookaberry to a charged battery and turn it on as described in the Quick Manual.



Connect an Ambient Light Sensor to one end of a 3-wire jst connecting lead and plug the other end into the P4 connector on the back of the Kookaberry.

Do the same for an LED, and plug into connector P2.



Scroll down the menu to the LightMe app and press the green button B to run.

Step 2



The analogue signal from the ambient light sensor is displayed as a “tank” icon whose level varies according to the level of the light being detected.

The two lines on the tank are the threshold levels which trigger LED operation. The top one switches the LED ON as the light level diminishes, and the bottom one switches it OFF as it increases again.

Adjust the threshold levels to turn the light off in the current lighting conditions by pressing the C and D buttons



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Switch the LED ON and OFF by placing your hand over the sensor for 10-20 secs. The measured value will be logged and stored in the USB memory as a file called Kooklog.

Exit the app by pressing Button A. This will stop the data logging operation. Exit the screen by pressing button A again.

The file can now be uploaded and displayed on your computer as shown in the next steps.

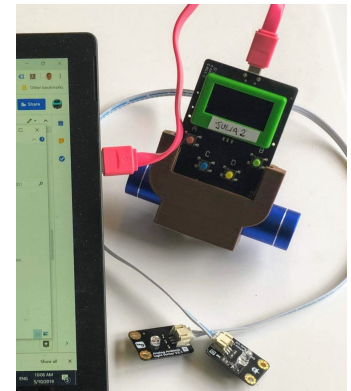
Displaying the logged data

Step 1

Remove the large USB connector from the battery and plug into the connector on your computer.

The contents of the USB memory will be displayed.

Double click the Kooklog file to open an Excel file displaying a table of the values measured as shown below.



	A	B	C	D	E	F
1	Kookaberry	Log for JULIA2				
2	Time	Light	Category	Switch		
3	0	66	Bright	Off		
4	2	66	Bright	Off		
5	4	30	Dim	On		
6	6	54	Bright	Off		
7	8	7	Dark	On		
8	10	17	Dark	On		
9	12	58	Bright	Off		
10	14	7	Dark	On		

Step 2

In the open Excel file, select the data in the first two columns (Time & Light) by holding and moving the cursor over the values. Include the column titles in your selection.

Now click Insert in the top menu bar and then the Recommended Charts in the menu bar below. A window showing the charts Excel recommends for displaying the data will appear. Choose one of the line charts.



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File Home **Insert** Draw Page Layout Formulas Data Review View Help Search

PivotTable Recommended Table Illustrations Get Add-ins My Add-ins Recommended Charts Maps PivotChart 3D Map Line Column Win/Loss Slicer Timeline

POSSIBLE DATA LOSS Some features might be lost if you save

A2 Time

	A	B	C	D	E
1	Kookaberry Log for JULIA2				
2	Time	Light	Category	Switch	
3	0	66	Bright	Off	
4	2	66	Bright	Off	
5	4	30	Dim	On	
6	6	54	Bright	Off	
7	8	7	Dark	On	
8	10	17	Dark	On	
9	12	58	Bright	Off	
10	14	7	Dark	On	
11	16	4	Dark	On	
12	18	22	Dark	On	

Insert Chart

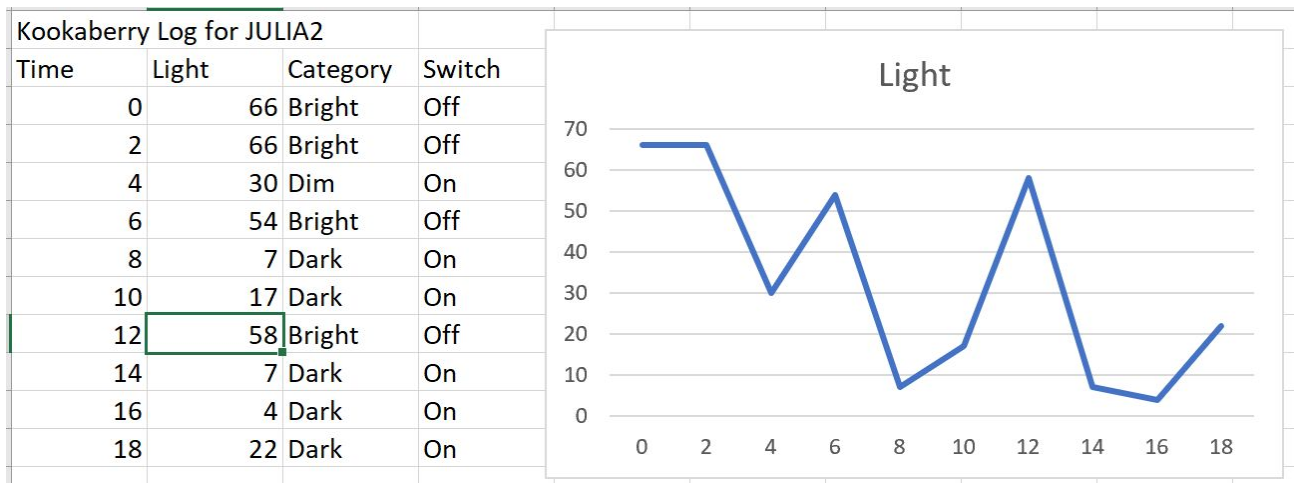
Recommended Charts All Charts

Line

Light

A line chart is used to display trends over time (years, months, and days) or categories when the order is important. Use it when there are many data points and the order is important.

Press OK on the chosen chart and align the resulting embedded graph alongside the table of values for better presentation.



Either mirror the chart and values on a monitor or smart board for discussion in real time, or Save as an Excel Workbook in another folder (Not in the KOOKABERRY Drive) for later analysis or display.

Ensure you close the Excel file and the Kookaberry Drive before disconnecting the Kookaberry.