Rothamsted weather data – exercise for secondary schools







1) Daily weather data: Use the dataset SCHOOLMETDAY

Important: You will require a password to extract data from the e-RA database – contact the e-RA curators in advance by email to obtain a password (res.era@rothamsted.ac.uk)

In this exercise, we are looking at how to extract data from our database for one day or a whole year, and then some of the ways we can analyse this data. Rothamsted has developed e-RA, the electronic Rothamsted Archive, to keep the results of **the long term experiments** and other information like **weather data**.

1) **The weather for one day**: Select a date from **SCHOOLMETDAY** (perhaps your birthday!).

Select SCHOOLMETDAY, check (tick) all left hand boxes, and check 'day' on right hand box (as shown below). Then go to 'Filter' and type in your date. Select 'accept' then go to 'Retrieve' and select 'extract data'.

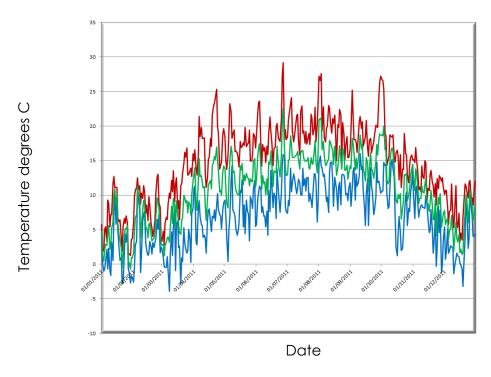
e-RA Data Extraction Tool									
Archive Getting Started		1: 5	Select 2: Filter	3: Retrieve					
Login/Logout	(Orde	by field name				Show Help		
All Datasets	~	Q	Field Name	Units	+	Description			
Dataset index fields									
My Datasets	✓	✓	DAY			Date			
		Remaining/Selected fields							
SCHOOLMETDAY	✓		RAIN	mm		Daily total rainfall			
	✓ □ SUNHOURS		SUNHOURS	hours		Daily hours of sun			
	✓ □ T_MAX		T_MAX	degrees C	Daily maximum air temperature				
	✓		T_MIN	degrees C		Daily mimimum air temperature			
	✓		WDIR	degrees		Wind direction at 09:00 GMT (0-360 degrees)			
	✓		WINDRUN	km	Daily amount of wind				
			WINDRUN	KIII		Daily amount of wind			

D	ate:		
	There were	_mm of rain. The sun shone for hours.	
	The wind direction was _	degrees. The total amount of wind was	_ km.
	At its coldest it was	°C and at its hottest it was	.°C
	The mean was:	°C. You will need to calculate this yourself:	
The med	an temperature is (T_MAX +	· T_MIN) / 2	

For example, on 01/06/1999, $\mathbf{T}_{-}\mathbf{MAX} = 21.0 \,^{\circ}\mathbf{C}$, $\mathbf{T}_{-}\mathbf{MIN} = 10.2 \,^{\circ}\mathbf{C}$. (21.0 + 10.2) / 2 = 15.6 $^{\circ}\mathbf{C}$

2) The weather for a whole year:

Graph showing the daily T_max, T_min and mean temperature for 2011 (data extracted from the dataset for schools called 'SCHOOLMETDAY')



The blue line represents the coldest temperature every day,

the red line the hottest

and the green line the mean.

The average temperature for that year would be the average of all the means. (That is a good enough approximation). Average: $10.84\ ^{o}C$

3) Your turn...!

Now you extract data for one year from e-RA dataset 'SCHOOLMETDAY' and analyse it with excel

Year	2011	
Hottest day	27 June: 29.2°C	
Coldest day	8 March: -3.9°C	
Average temp	10.84 °C	
Wettest day		
Driest day		
Sunniest day		
Windiest day		