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Module Outline

Excel Fu

25 June 2014 | 1.1

Introduction

This document is the course outline for the "Excel Fu" course. This workshop runs over one day and comprises of a series of hands-on exercises and slide-based background material.

Attendees will leave with two key skills – how to handle their research data within Excel, and how to use advanced features of Excel to answer research questions pertaining to their data.

Summary

This module is targeted at participants who:

- would like to take a deep dive into using Excel, either to apply it to their research or to add it to their arsenal of eResearch skills

This module assumes knowledge of:

- Basic Excel usage

Description

Microsoft Excel is a spreadsheet application developed by Microsoft for Windows and Mac. It features calculation, graphing tools, pivot tables, and a macro programming language called Visual Basic for Applications. Excel has the basic features of all spreadsheets, using a grid of cells arranged in numbered rows and letter-named columns to organize data manipulations like arithmetic operations. It has a battery of supplied functions to answer statistical, engineering and financial needs.

This course is designed to enhance the skills of researchers to utilise many of the advanced features of Excel which may up until now have remained a mystery. Excel contains many powerful features which can be used to do such varied tasks as: importation of research data, data interrogation, performing complex computations and statistical analysis, SQL querying, VB scripting and graphing and visualisation of the data.

We will start with a research question in mind and use the features of Excel to gain insights and to find answers. The research question relates to Bureau of Meteorology (BOM) data relating to weather in the previous 12 months — finding out what we can about what weather patterns that emerged, weather experienced in different areas, and the kinds of archival records the BOM holds on weather.

Possible Uses

The potential uses for material covered in this course are:

- Utilisation of data from other sources – More and more data is being made available by Government agencies for use by researchers. If you have a text file with semi-structured data, you can edit it by adding meaningful names and formatting to make the data appropriate for analysis.
- Learn how to use Excel features to interrogate your data – min, max, average, vlookup, sorting, filtering, conditional formatting, pivot tables, data validation
- Learn how to answer your research questions using Excel functions on your existing research data
- Learn best practices on how to manipulate and transform your research data without destroying the original copy of your data

What will be covered?

Participants will learn:

- How to locate potential research data on publically accessible websites
- How to import and "clean up" research data
- How to organise and format your data in Excel
- Ways to name your data meaningfully
- How to analyse data within Excel (answer research questions)
- How to manipulate your data (filtering, conditional formatting, pivot tables)
- How to do calculations on research data (max, min, average)
- How to manipulate your data (data conversion, date formatting, time calculations)
- How to create informative graphs and charts to represent your data