

CPSC 203 Tutorial

Spreadsheet
Week 2 Lab 2

Recap

- Lookup function
 - Syntax
 - Lookup table
 - How the function returns a result
- Charts
 - How to create
 - How to customize (Design, **Layout**, Format)
 - Good Design Principles

Good Design Principles

- http://wiki.ucalgary.ca/page/Courses/Computer_Science/CPSC_203/CPSC_203_Template/Labs_Template/Week_2_-_Lab_1:_Charts_and_Visual_Design_Rules

Spreadsheet Design Rules

- A spreadsheet typically consists of
 - Data
 - Formula
 - Statistical function (sum, average, ...)
 - Summary
 - Charts
- A spreadsheet should be
 - Self explanatory
 - Concise
 - Comprehensive

Parts of a Good Spreadsheet

- Introduction:
 - What it is about?
 - Author, Purpose, Version, revision dates, etc.

Example

The screenshot shows the Microsoft Excel interface in Compatibility Mode. The title bar reads "SpShtLec3_PresidentsDataAndAnalysis_2_20080205 [Compatibility Mode] - Microsoft Excel". The ribbon is set to the "View" tab, with options for Ruler, Formula Bar, Gridlines, Headings, Message Bar, Zoom (100%), Zoom to Selection, New Window, Arrange All, Freeze Panes, Hide, Unhide, View Side by Side, Synchronous Scrolling, Reset Window Position, Save Workspace, Switch Windows, and Macros.

The spreadsheet content is as follows:

| | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q |
|----|--|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Introduction: Political Control of the Economy | | | | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | | | | |
| 3 | This spreadsheet is based on a Data Set by Edward R Tufte gathered from U.S. Presidential elections between 198 and 1976 | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | |
| 5 | Using Tufte's data we look at Incumbent Advantage in terms of Change in Real Disposable Income | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | | |
| 7 | Reference: | "Political Control of the Economy" | | | | | | | | | | | | | | | |
| 8 | | By Edward, R. Tufte | | | | | | | | | | | | | | | |
| 9 | | Princeton University Press, 1978 | | | | | | | | | | | | | | | |
| 10 | | pp. 121 to 123 | | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | | | | |
| 12 | Data Source: | Table 5.5 from above reference, pp. 121 | | | | | | | | | | | | | | | |
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The cell B22 is highlighted with a black border. The status bar at the bottom shows "Ready", "Introduction" (selected), "ModelsAndAssumptions", "DataDictionary", "Data", "Presentation", "Sheet3", and a zoom level of 120%.

Model and Assumptions

- Justify any models, summary statistics, or calculated variables you are using.

Example

SpShtLec3_PresidentsDataAndAnalysis_2_20080205 [Compatibility Mode] - Microsoft Excel

Home Insert Page Layout Formulas Data Review View

Normal Page Layout Page Break Preview Custom Views Full Screen

Workbook Views Show/Hide

Ruler Formula Bar

Gridlines Headings

Message Bar

Zoom 100% Zoom to Selection

New Window Arrange All Freeze Panes

Split Hide Synchronous Scrolling View Side by Side

Reset Window Position Window

Save Workspace Switch Windows

Macros

E28

| | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | |
|----|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|--|
| 1 | Model & Assumptions | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | | | | | | | | | |
| 3 | We developed a linear Model with "IncumbentAdvantage" as a Function of "ChangeDisposableIncome" | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | | | | | | |
| 5 | Model Formula is: IncumbentAdvantage = 0.1456ChangeDisposableIncome - 0.081 | | | | | | | | | | | | | | | | | | | | | |
| 6 | Model R-Squared is 0.1435 | | | | | | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | | | | | | |
| 8 | Assumptions | | | | | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | | | | | | |
| 10 | We Assume a linear Model is Appropriate | | | | | | | | | | | | | | | | | | | | | |
| 11 | Given the dispersion of the data, and low R-Squared -- this assumption may not be valid | | | | | | | | | | | | | | | | | | | | | |
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Introduction ModelsAndAssumptions DataDictionary Data Presentation Sheet3

Ready 100%

Data Dictionary

- **Should be in tabular format.**
- **Following fields should be there:**
 - **Location** (cell range)
 - Format: SheetName!Cell Range
 - **Name**
 - The **Data Class** it is (Raw Data, Statistical Summary, Calculated Variable, Score etc.),
 - **Data Type** (e.g. Integer, Text, Currency, Date, etc.) and
 - **Description** (a description of the data or what it's 'purpose' is).

Example

| Location | Name | Data Class | Data Type | Description |
|-----------------|--------------|-------------------|------------------|--------------------------------|
| Sheet1!B4:B23 | Movie | Raw | Text | Name of the movie |
| Sheet1!c4:c23 | Distributor | Raw | Text | Distributor of the movie |
| Sheet1!d4:d23 | Genre | Raw | Text | Movie Genre |
| Sheet1!e4:e23 | MPAA | Raw | Text | Rating |
| Sheet1!f4:f23 | 2008 Gross | Raw | Currency | How much money it made in 2008 |
| Sheet1!g4:g23 | Tickets sold | Raw | Number | Number of tickets sold |
| Sheet1!h4:h23 | Category | Calculated | Text | |

Raw Data

- Data that is given.

Calculated Data

- Summary Statistics
- Derived variable

Charts & Analysis

- Follow the good chart design principles.
- Present your findings
 - What each of the chart says
 - What's the overall finding