Chapter 13
The Basics of Spreadsheets
Cells

- Sort
- Format menu
  - *Italic*, **bold**, _underline_, _font_, _size_, _justification_, _color_
- Naming
  - **Columns** - _letters_ (A B C…)
  - **Rows** - _numbers_ (1 2 3 …)
  - **Cell** (C3)
Sorting Data

- Select Items - highlight
- First cell is different color
- Sort – icon or menu item
- Ascending or descending
- Cell range  e.g. B2:D7
Writing a Formula

• Within a cell (H2):  

  = F2 * 0.621  

  – Type cell address (or click) and math expression

• If F2 changes, then H2 value automatically changes

• H2 holds formula ( actually: H2 = F2 x 0.641 )
Copy/Paste/Fill

- Paste transforms formula into $F3 \times 0.621$ (original cell: $F2 \times 0.621$)
- Pull "Fill handle" +

- Hidden columns (G ↔ J)
# Common Spreadsheet Operations

Table 13.1 Common spreadsheet operations in recent versions of spreadsheet software; for Excel 2010 and 2013 check the tab shown in brackets.

<table>
<thead>
<tr>
<th>Operation</th>
<th>Using Excel...</th>
<th>Using OpenOffice...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change column width manually</td>
<td>Place cursor at right side of column name, then drag</td>
<td>Place cursor at right side of column name, then drag</td>
</tr>
<tr>
<td>Change column width automatically</td>
<td><strong>Format &gt; Column &gt; Autofit Selection [Home]</strong></td>
<td><strong>Format &gt; Column &gt; Optimal Width ...</strong></td>
</tr>
<tr>
<td>Fancy formatting</td>
<td><strong>Format &gt; Cells... [Home]</strong></td>
<td><strong>Format &gt; Cells...</strong></td>
</tr>
<tr>
<td>Clear cells</td>
<td><strong>Edit &gt; Clear &gt; All [Home]</strong></td>
<td><strong>Edit &gt; Delete Contents ...</strong></td>
</tr>
<tr>
<td>Delete columns, rows</td>
<td><strong>Edit &gt; Delete ... [Home]</strong></td>
<td><strong>Edit &gt; Delete Cells ...</strong></td>
</tr>
<tr>
<td>Hide a column</td>
<td><strong>Format &gt; Column &gt; Hide [View]</strong></td>
<td><strong>Format &gt; Column &gt; Hide</strong></td>
</tr>
</tbody>
</table>

*Note: All spreadsheet applications provide these common operations; explore your system.*
Excel’s Formatting GUI

Number is used for general display of numbers. Currency and Accounting offer specialized formatting for monetary value.
Functions ( )

- Function name with cell range
  \[ \text{max} ( J2:J7 ) \]
  - Highest value in range
- Listed in \( f_x \) symbol and

  \textbf{Insert > Insert Function. . .}
# Relative Versus Absolute

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Distance (Km)</th>
<th>Body Len (m)</th>
<th>Distance (Mi)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Swainson’s hawk</td>
<td>13500</td>
<td>0.52</td>
<td>=F2*0.621</td>
</tr>
<tr>
<td>Wheatear</td>
<td>13500</td>
<td>0.16</td>
<td>=F3*0.621</td>
</tr>
<tr>
<td>Willow warbler</td>
<td>15500</td>
<td>0.11</td>
<td>=F4*0.621</td>
</tr>
<tr>
<td>Short-tailed shearwater</td>
<td>12500</td>
<td>0.43</td>
<td>=F5*0.621</td>
</tr>
<tr>
<td>Long-tailed skua</td>
<td>16000</td>
<td>0.51</td>
<td>=F6*0.621</td>
</tr>
<tr>
<td>Arctic tern</td>
<td>19000</td>
<td>0.35</td>
<td>=F7*0.621</td>
</tr>
</tbody>
</table>
Relative vs Absolute (cell reference)

- **Relative** – “relative position from cell” e.g. F2
  - Copy formula 2 columns to left, automatically transforms formulas as it pastes/fills

- **Absolute** – “fixed position” (no adjust) e.g. $F$2
  - $ in front of cell address
    - F2 (column relative, row relative)
    - $F2$ (column absolute, row relative)
    - F$2$ (column relative, row absolute)
    - $F$$2$ (column absolute, row absolute)
Pizza Party

- Relative References
  - \( = D3 \times D4 \) works for that one cell vs whole table
  - Want \( D4 = D3 \times C4 \)
  - \( E6 = E3 \times C6 \)

- Absolute References using \( \$ \)
  - \( D4 = D3 \$ \times C4 \)
  - \( D3 \$ \) always refers to 3\textsuperscript{rd} row, \( C4 \) to C column
Charts

- Graph styles:
  - Labels the point as a key from column heading
  - (right) Clicking on graph, gets pop-up window for editing options
<table>
<thead>
<tr>
<th>Migration</th>
<th>Distance (km)</th>
<th>Body Len (m)</th>
<th>Distance (Mi)</th>
<th>Length (In)</th>
<th>Flying Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA-Argentina</td>
<td>13500</td>
<td>0.52</td>
<td>8383.5</td>
<td>20.47</td>
<td>25962</td>
</tr>
<tr>
<td>Alaska-E Africa</td>
<td>13500</td>
<td>0.16</td>
<td>8383.5</td>
<td>6.24</td>
<td>84375</td>
</tr>
<tr>
<td>Chukotka-S Africa</td>
<td>15500</td>
<td>0.11</td>
<td>9625.5</td>
<td>4.29</td>
<td>140909</td>
</tr>
<tr>
<td>Tasmania-Bering Straight</td>
<td>12500</td>
<td>0.43</td>
<td>7762.5</td>
<td>16.77</td>
<td>29070</td>
</tr>
<tr>
<td>N Greenland-Southern Ocean</td>
<td>16000</td>
<td>0.51</td>
<td>9936</td>
<td>19.89</td>
<td>31373</td>
</tr>
<tr>
<td>Greenland-Antarctic</td>
<td>19000</td>
<td>0.35</td>
<td>11799</td>
<td>13.65</td>
<td>54286</td>
</tr>
<tr>
<td>Maximum:</td>
<td>19000</td>
<td>0.52</td>
<td>11799</td>
<td>20</td>
<td>140909</td>
</tr>
<tr>
<td>Average:</td>
<td>15000</td>
<td>0.35</td>
<td>9315</td>
<td>13.5520667</td>
<td>60996</td>
</tr>
</tbody>
</table>

**Figure 14.4** The horizontal bar chart displaying the Flying Score.
PMT – payment function

- Function inputs:
  - Monthly interest **Rate**:
    - 1/12th annual rate (e.g. 5%)
  - **Nper** (number of payments)
  - **Pv** (present value/loan amount)
Conditional Formatting

![Conditional Formatting Images]
Importing Data

- Foreign data
  - Data from another application to import into spreadsheet

- Prefer to import foreign data as **tab-delimited text** (*.txt)
  - ASCII text files
  - Each cell ends with **tab**
  - Each row ends with a return <ENTER>
  - Spreadsheets can output as **tab-delimited**
  - Text editor with **Search/Replace** may convert to **tab-delimited** file (*.txt), import this *.txt file
  - Select browser that allows **Copy/Paste** of tagged tables