

Introductory Financial Modelling

Session 1: Design and Efficiency
Duncan Williamson
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CTSOLUTIONS



Introduction

- In this first Part we will take a specific look at the design of a financial model, providing insight into the usage of spreadsheets, formatting and calculations.
- This section will provide a hands on focal point for designing your own financial model using Excel.

Producing and Publishing Model Output for effective communication and workability



- Font colours, backgrounds and borders
- Formatting
- Pivot Tables
- Using symbols and equations
- Using graphs and figures
- ...

Producing and Publishing Model Output for effective communication and workability



- Documentation
- File formats and compatibility
- Size and memory consideration
- Object embedding

Formatting



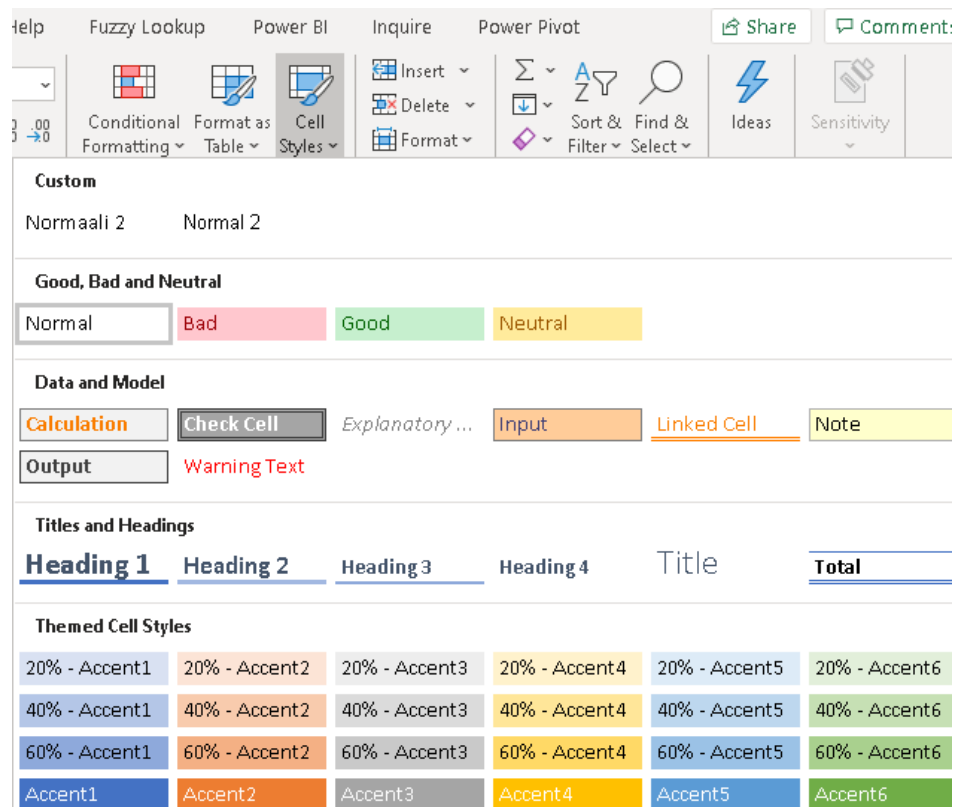
- Colour coding

model_colour_coding.xlsx

Type of Cells	Excel Formula	Colour
Hard coded numbers: inputs	1234	Blue
Formulas: calculations	=A1*A2	Black
Link to other worksheets	=Sheet2!A1	Green
Link to other files	=[Book2]Sheet1!\$a\$1	Red
Link to data providers: eg CIQ, Factset	=CIQ(1QTOTALREV)	Dark Red

Formatting

- Backgrounds



Let's use this file ...

simple_pt_delegates.xlsx

Formatting

- Backgrounds
- You can see the **Good, Bad and Neutral** section in the screenshot above that uses the Traffic Light System and I do use that, for example, for **conditional formatting**.
- In my files over the next four sessions, you will see that I use the **Input** colouring in my Input Sections and I use the **Calculations** colouring as my Calculation and Output colouring.

Background Formatting

- Colour Wheel
 - Complimentary
 - Monochromatic
 - Analogous
 - Triadic
 - Tetradic

See page four of today's notes:
[introductory_financial_modelling
_notes_delegates_hours_1_2.pdf](#)

Abcdef	Abcdef	Abcdef
Ghijklm	Ghijklm	Ghijklm
Abcdef	Abcdef	Abcdef
Ghijklm	Ghijklm	Ghijklm

Formatting



- Borders

Good Examples																	
Period	Sales	Costs	Profit	Period	Sales	Costs	Profit	Period	Sales	Costs	Profit	Period	Sales	Costs	Profit		
1	633	181	452	1	346	447	-101	1	322	556	-234	1	377	194	183		
2	509	566	-57	2	658	364	294	2	282	131	151	2	620	279	341		
3	521	340	181	3	213	629	-416	3	127	557	-430	3	264	385	-121		
4	373	250	123	4	126	115	11	4	521	311	210	4	440	608	-168		
5	414	592	-178	5	652	700	-48	5	679	621	58	5	511	169	342		
6	469	708	-239					Totals	1931	2176	-245	Sub Total	2212	1635	577		
7	266	507	-241									6	392	458	-66		
8	197	567	-370									7	562	651	-89		
9	619	146	473									8	396	584	-188		
10	493	334	159									9	716	417	299		
												10	553	290	263		
												Sub Total	2619	2400	219		
												Grand Total	4831	4035	796		

Formatting



- Borders

Horror!								
Period	Sales	Costs	Profit		Period	Sales	Costs	Profit
1	282	471	-189		1	563	445	118
2	283	507	-224		2	582	225	357
3	557	500	57		3	268	398	-130
4	617	685	-68		4	170	151	19
5	284	422	-138		5	535	372	163
Period	Sales	Costs	Profit		<i>Period</i>	<i>Sales</i>	<i>Costs</i>	<i>Profit</i>
1	560	277	283		1	372	332	40
2	230	507	-277		2	715	553	162
3	597	597	0		3	564	740	-176
4	687	733	-46		4	333	710	-377
5	105	396	-291		5	421	311	110

Formatting

- Borders

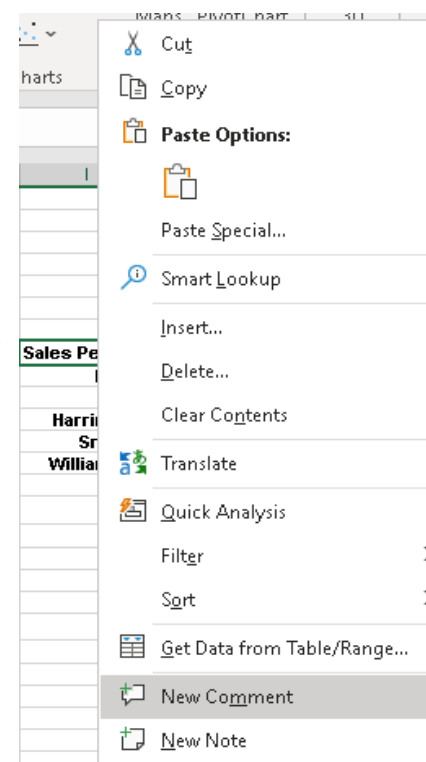
146	190	165	103	168	131	130	176	145	155	181	129	166	182	186
107	117	200	109	142	125	179	170	181	162	114	116	104	119	122
131	193	136	179	189	197	158	124	162	178	120	177	111	184	172
193	192	182	148	142	152	153	121	198	187	138	104	180	164	157
146	188	131	141	165	162	127	139	183	189	127	199	131	181	110
110	171	198	106	194	194	189	121	100	147	116	117	178	172	162
194	126	117	189	146	196	124	194	189	186	198	108	154	156	148
153	153	101	148	140	108	191	152	178	111	116	144	170	169	184
111	142	126	130	141	176	177	195	163	169	103	100	159	187	173
163	137	110	111	141	138	145	117	138	155	147	142	146	188	162
137	193	185	140	140	185	140	137	175	113	101	189	190	116	173
200	173	139	194	110	157	138	107	157	176	130	155	142	200	199
149	131	155	140	180	149	148	196	124	114	154	134	181	117	153
121	158	110	157	156	186	104	165	126	131	187	169	104	109	192
198	174	163	136	142	107	111	130	128	189	155	121	129	193	144
108	174	108	173	163	101	162	169	124	122	189	150	199	183	177
120	190	114	171	198	170	186	107	130	105	145	109	102	169	200
134	119	108	155	179	103	100	152	171	103	126	130	118	192	126
151	117	153	136	185	166	133	135	157	131	162	195	162	123	164
160	104	118	197	145	106	140	160	197	120	178	181	196	144	189
148	103	169	132	191	177	198	191	135	114	100	122	143	128	184
124	135	159	140	177	190	149	121	194	145	101	107	160	123	190
149	124	164	124	189	179	159	131	196	174	120	124	161	163	115
144	148	115	102	151	148	160	138	181	139	156	148	105	120	141
100	154	185	167	110	124	177	119	139	108	147	157	190	118	177

What might be wrong with this table?

Comments and Notes

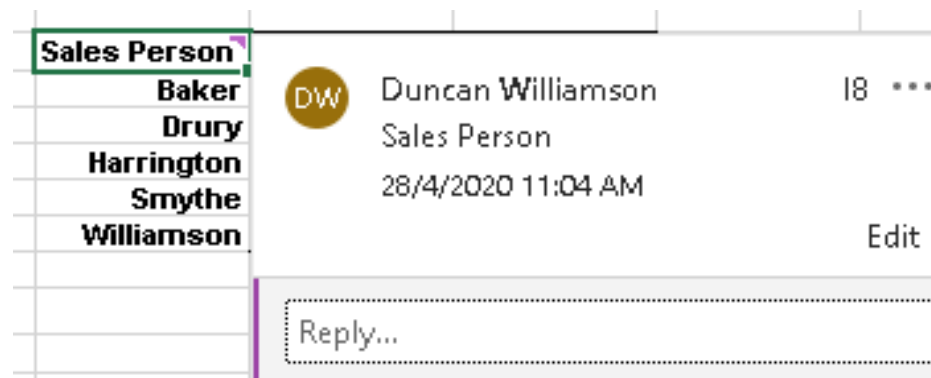
- In the latest versions of Excel there are now
 - Comments
 - Notes

Right click on the cell where you want to add the Comment or Note and make your selection



Comments and Notes

- Comment
- Comments are new to Excel and they not only allow us to make a comment in a cell but they encourage other users of our work to add to the comment

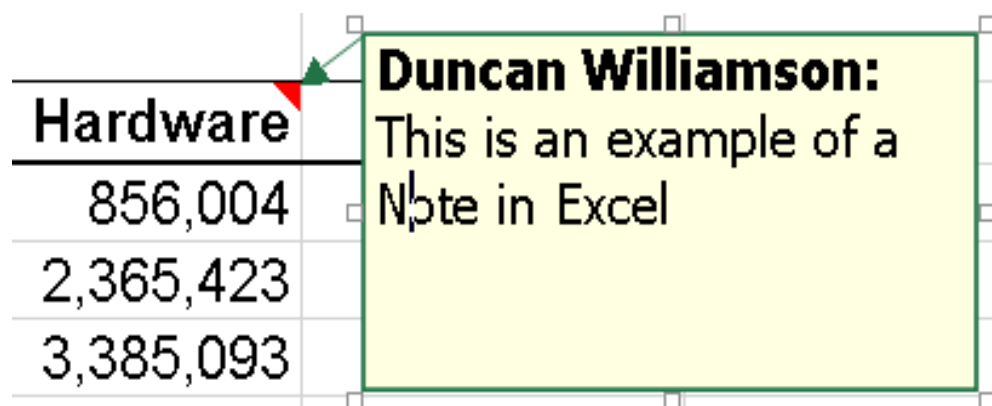


How do we know when a cell has a comment in it? There is a purple marker in the top right corner of such a cell:

Sales Person

Comments and Notes

- Note
- A note is a traditional comment in a cell and anyone who has used comments before 2016 knows what they look like
- Right click on a cell and choose New Note



Hardware
856,004
2,365,423
3,385,093

You can see that the small red triangle in the top corner of a cell is still the marker of a note in Excel and all that a Note does is to hold a comment.

Sign Convention 4

- All values positive, including revenues ... manual page 7 ++

	Sales		100,000
less	Cost of Sales		65,000
	Gross Profit		=D1-D2
plus	Other Income		
	Commission	2,500	
	Interest Earned	3,000	5,500
	Operating Profit		=D3+SUM(C5:C6)
less	Expenses		
	Administration		
	General		
	Sales		
	Distribution		
	Total Expenses		
	Net Profit		

Pivot Tables

- Pivot Tables are an absolute must for financial modellers and for financial modelling.
- Pivot tables make the initial, if not the full analysis, of data very easy in many situations, whereas other methods, such as relying on lists or Excel Tables can make life quite complex.
- Cross tabulations driven by formulas can be really handy things to program and use but when it comes to changing them and updating them, possible nightmare!



Cross Tabulations: cross tabs

- Not Pivot Tables but potentially very useful: Open the file *simple_pt_delegates.xlsx*

Sales Person	Hardware	Software	
Baker	856,004	1,259,900	
Drury	2,365,423	1,799,844	
Harrington	3,385,093	1,136,265	
Smythe	3,559,809	2,087,482	
Williamson	1,594,725	389,850	
Sales Person	Derbyshire	Essex	Yorkshire
Baker	2,115,904	-	-
Drury	-	-	4,165,267
Harrington	-	4,521,358	-
Smythe	-	5,647,291	-
Williamson	1,984,575	-	-

Date	Baker	Drury	Harrington	Smythe	Williamson
January	856,004	1,045,479	1,073,418	800,200	269,775
February	560,900	1,629,369	290,350	133,131	-
March	-	-	720,901	1,677,344	1,023,075
April		965,519	1,001,451	790,545	-
May	-	-		133,131	133,131
June	-	262,450			
July	349,500	-			
August	-	262,450	283,930	-	135,450
September	-	-	-	364,080	-
October	-	-	-	524,440	-
November	-	-	283,930	364,080	-
December	349,500	-	433,689	335,900	-

Exercise for you to do ...

Copy and paste these images to the xlsx file to check your progress as you work

Cross Tabulations: cross tabs

- Not Pivot Tables but potentially very useful:

	I	J	K	L	M	N	O
1							
2	Using Range Names for the first two tables ... you update the third table						
3	Sales Person	Hardware	Software				
4	Baker	856,004	1,259,900			=SUMIFS(ssales	type,J\$3,person,\$I4)
5	Drury	2,365,423	1,799,844				
6	Harrington	3,385,093	1,136,265				
7	Smythe	3,559,809	2,087,482				
8	Williamson	1,594,725	389,850				

- **In my file**, I have also programmed the Dynamic Array Functions on the **cross_tabs (2)** tab ...

=SUMIFS()
 =TRANSPOSE()
 =SORT()
 =UNIQUE()

There is also the file
 cross_tabs_using_formulas.xlsx
 but the solutions here are the same
 as in the simple_pt_... file

Pivot Tables

- Using the file *simple_pt_delegates.xlsx*

Month	Sales Person	ID	County	Region	Sales Type	Amount (£)
1-Jan	Baker	678901	Derbyshire	Midlands	Hardware	856,004
2-Feb	Baker	678901	Derbyshire	Midlands	Software	560,900
12-Dec	Baker	678901	Derbyshire	Midlands	Software	349,500
7-Jul	Baker	678901	Derbyshire	Midlands	Software	349,500
1-Jan	Drury	123456	Yorkshire	North East	Hardware	789,504
1-Jan	Drury	123456	Yorkshire	North East	Software	255,975
2-Feb	Drury	123456	Yorkshire	North East	Hardware	998,900
2-Feb	Drury	123456	Yorkshire	North East	Software	315,900

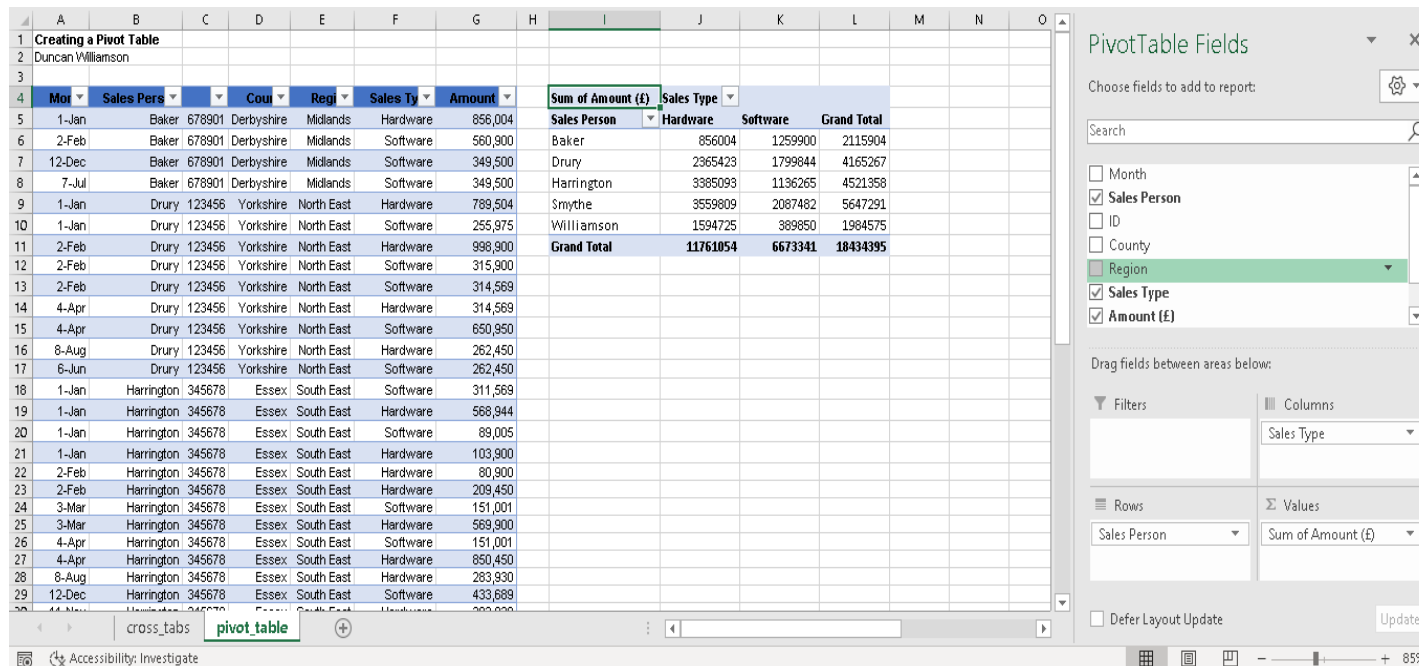
- Let's create a Pivot Table from it now ...

Pivot Tables

- If I had done everything by pivot table, any such change would take me just a few seconds AND be less error prone than using Cross Tabulation

Pivot Tables

- I converted the data set into an Excel table, created a pivot table, placing it next to the data set and ... even so, it took me just a minute or so to do all of that:



Month	Sales Person	County	Region	Sales Type	Amount	Sum of Amount (£)	Sales Type			
1-Jan	Baker	Derbyshire	Midlands	Hardware	856,004		Hardware	Software	Grand Total	
2-Feb	Baker	Derbyshire	Midlands	Software	560,900		856004	1259900	2115904	
12-Dec	Baker	Derbyshire	Midlands	Software	349,500		Drury	2365423	1799844	4165267
7-Jul	Baker	Derbyshire	Midlands	Software	349,500		Harrington	3385093	1136265	4521358
1-Jan	Drury	Yorkshire	North East	Hardware	789,504		Smythe	3559809	2087482	5647291
1-Jan	Drury	Yorkshire	North East	Software	255,975		Williamson	1594725	389850	1984575
2-Feb	Drury	Yorkshire	North East	Hardware	998,900		Grand Total	11761054	6673341	18434395
2-Feb	Drury	Yorkshire	North East	Software	315,900					
2-Feb	Drury	Yorkshire	North East	Software	314,569					
4-Apr	Drury	Yorkshire	North East	Hardware	314,569					
4-Apr	Drury	Yorkshire	North East	Software	650,950					
8-Aug	Drury	Yorkshire	North East	Hardware	262,450					
6-Jun	Drury	Yorkshire	North East	Software	262,450					
1-Jan	Harrington	Essex	South East	Software	311,569					
1-Jan	Harrington	Essex	South East	Hardware	568,944					
1-Jan	Harrington	Essex	South East	Software	89,005					
1-Jan	Harrington	Essex	South East	Hardware	103,900					
2-Feb	Harrington	Essex	South East	Hardware	80,900					
2-Feb	Harrington	Essex	South East	Hardware	209,450					
3-Mar	Harrington	Essex	South East	Software	151,001					
3-Mar	Harrington	Essex	South East	Hardware	569,900					
4-Apr	Harrington	Essex	South East	Software	151,001					
4-Apr	Harrington	Essex	South East	Hardware	850,450					
8-Aug	Harrington	Essex	South East	Hardware	283,930					
12-Dec	Harrington	Essex	South East	Software	433,689					

Pivot Tables

- Now, the proof of the pudding is in the eating so ... let's create cross tabulation two:

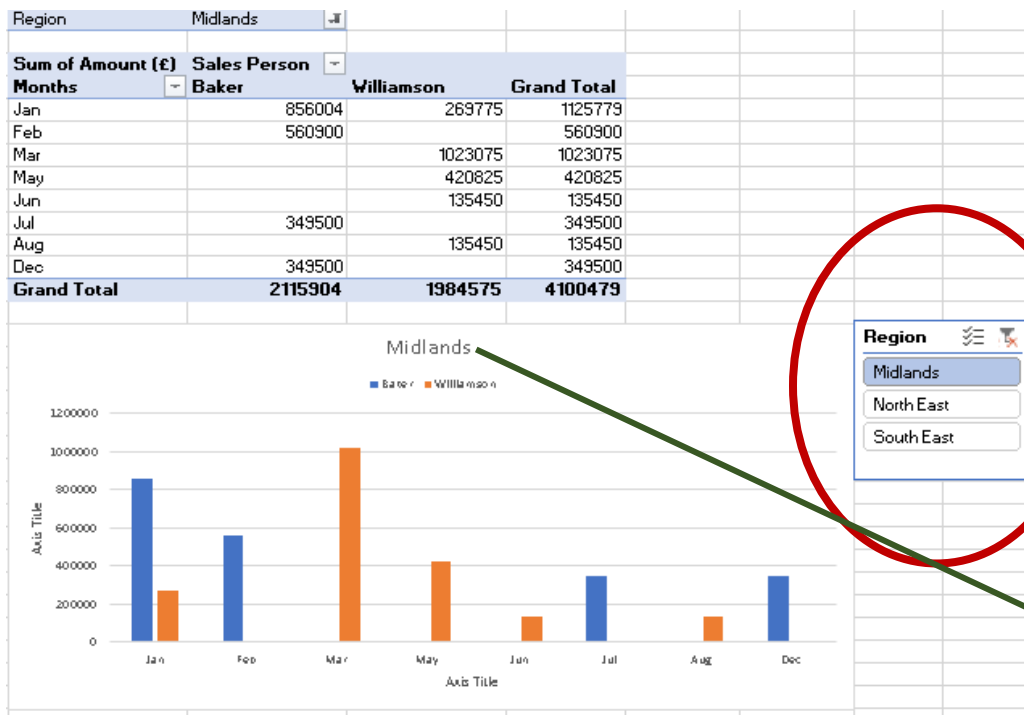
Sum of Amount (£)	County			
Sales Person	Derbyshire	Essex	Yorkshire	Grand Total
Baker	2115904			2115904
Drury			4165267	4165267
Harrington		4521358		4521358
Smythe		5647291		5647291
Williamson	1984575			1984575
Grand Total	4100479	10168649	4165267	18434395

Exercise for you to do ...

- 10 seconds to do that!

Pivot Tables

- Now, I am going to create a pivot table that includes the Region variable, a Slicer and a Pivot Chart



That took **more than a minute** as I needed to reformat a couple of things, move things around, format the chart and so on. Easier and quicker than a cross tab, that's for sure!

A Slicer: graphical filter

**Exercise for you to do ...
at least in part**

Using Symbols and Equations

- **Avoid Partial Inputs** ... be systematic with your inputs
- **Hard coded** numbers should never be embedded into a cell reference. The danger here is that you'll likely forget there is an assumption inside a formula and when you update it, you miss one or more of them and that means your model is already flawed.
- **Input sections** must be clearly separated from calculations: I tend to put my inputs in the top left hand corner of a worksheet or on a dedicated **Inputs** worksheet.

One row, one calculation

- Many financial models, like the three statement model, rely on historical data to drive forecasts.
- Data should be presented from left to right, although accountants have the habit of presenting their data from right to left.
- To the right of the historical columns are the forecast columns ... **see the *model_colour_coding.xlsx* file for an example of that**
- The formulas in the forecast columns should be consistent across the row.

Use Roll Forward or Corkscrew Calculations



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- Roll forwards refers to a forecasting approach that connects the current period forecast to the prior period, like this:

Roll Forward or Corkscrew Technique

Month	Balance b/d	Period Interest	Period Payment	Balance c/d
1	250,000.00	1,302.08	1,539.29	249,762.79
2	249,762.79	1,300.85	1,539.29	249,524.35
3	249,524.35	1,299.61	1,539.29	249,284.66
4	249,284.66	1,298.36	1,539.29	249,043.72
5	249,043.72	1,297.10	1,539.29	248,801.53

In other words, it represents,

Opening balance
Plus: Interest due in the period
Less: Periodic payment
= Closing Balance

Write Robust Formulas

- In my outline for this course, I reported that I recently reviewed the work of a Chartered Accountant, who created this:
- =SUM(C8,C22,C34,C45,C56,C66,C77,C87,C99,C110,C121,C133,C143,C154,C164,C174,C184,C194,C204,C214,C225,C235,C245,C255,C268,C279,C290,C300,C311,C321,C331,C341,C351,C361,C371,C382,C392,C402,C412,C422,C432,C442,C453,C463,C473,C484,C494,C505,C515)

Write Robust Formulas

- That is clearly ridiculous, so I wrote to that accountant with this alternative: =SUMIFS(C3:C518,B3:B518,"Players bought") and I got this response in return:
- *Thanks Duncan, it's a hobby so I do it in my spare time but thanks for the tip as working on a project presently where that suggestion will save me a large measure of time.*

Simplify IF statements and Avoid Nested IFs



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- Simplify IF statements
- IF() statements are well understood by most Excel users but they can become long and difficult to audit. There are several excellent alternatives to IF that modellers frequently use. They include using Boolean logic along with a variety of reference functions, including

MAX()

AND()

VLOOKUP()

XLOOKUP()

SUMIFS()

MIN()

OR()

HLOOKUP()

OFFSET()

And more

Nested IF:

```
in C2 =IF(B2>3,2000,IF(B2=3,750,"-"))
```

```
in C2 =IF(B2>3,2000,IF(B2=3,750,IF(B2=2,100,"-")))
```

Names and Named Ranges

- Another way many modellers reduce formula complexity is by using names and named ranges.
- Many modellers say we should never use range names but I disagree. I think what they ought to say is, don't overuse range names.
- More than that, in some cases, Excel techniques will not work so well without range names: the Scenario Manager, for example.

Names and Named Ranges

- One of the arguments against using range names is that when you name a cell, you no longer know exactly where it is without going to the name manager. In addition, unless you are proactively deleting names (you aren't 😊), Excel will retain these names even when you delete the named cell.
- The result is that a file you're using today to build a DCF contains dozens of phantom names from prior versions of the model, leading to warning messages and confusion. This objection assumes we lack discipline!

Don't Calculate on The Balance Sheet: Link From Supporting Schedules



- Your financial models will frequently involve the use of financial statements. Ideally, your calculations are done in schedules separate from the output you're working towards.
- For example, in my working files, I import or create my financial data and immediately copy the worksheet it is on and leave that original worksheet alone: it is a back up in case of catastrophe. Alternatively, save your raw data as a separate file: the back up file.
- Look at the file *simple_pt_delegates.xlsx* again ...

Don't Calculate on The Balance Sheet: Link From Supporting Schedules



- Look at the file *simple_pt_delegates.xlsx* again ...

	A	B	C	D	E	F	G		A	B	C	D	E	F	G
1	Sales Data for DW plc							1	Sales Data for DW plc						
2								2							
3	Month	Sales Person	ID	County	Region	Sales Type	Amount (£)	3	Month	Sales Person	ID	County	Region	Sales Type	Amount (£)
4	January	Baker	678901	Derbyshire	Midlands	Hardware	856,004	4	January	Baker	678901	Derbyshire	Midlands	Hardware	856,004
5	February	Baker	678901	Derbyshire	Midlands	Software	560,900	5	February	Baker	678901	Derbyshire	Midlands	Software	560,900
6	December	Baker	678901	Derbyshire	Midlands	Software	349,500	6	December	Baker	678901	Derbyshire	Midlands	Software	349,500
7	July	Baker	678901	Derbyshire	Midlands	Software	349,500	7	July	Baker	678901	Derbyshire	Midlands	Software	349,500
8	January	Drury	123456	Yorkshire	North East	Hardware	789,504	8	January	Drury	123456	Yorkshire	North East	Hardware	789,504
9	January	Drury	123456	Yorkshire	North East	Software	255,975	9	January	Drury	123456	Yorkshire	North East	Software	255,975
10	February	Drury	123456	Yorkshire	North East	Hardware	998,900	10	February	Drury	123456	Yorkshire	North East	Hardware	998,900
11	February	Drury	123456	Yorkshire	North East	Software	315,900	11	February	Drury	123456	Yorkshire	North East	Software	315,900
12	February	Drury	123456	Yorkshire	North East	Software	314,569	12	February	Drury	123456	Yorkshire	North East	Software	314,569
13	April	Drury	123456	Yorkshire	North East	Hardware	314,569	13	April	Drury	123456	Yorkshire	North East	Hardware	314,569
14	April	Drury	123456	Yorkshire	North East	Software	650,950	14	April	Drury	123456	Yorkshire	North East	Software	650,950
15	August	Drury	123456	Yorkshire	North East	Hardware	262,450	15	August	Drury	123456	Yorkshire	North East	Hardware	262,450

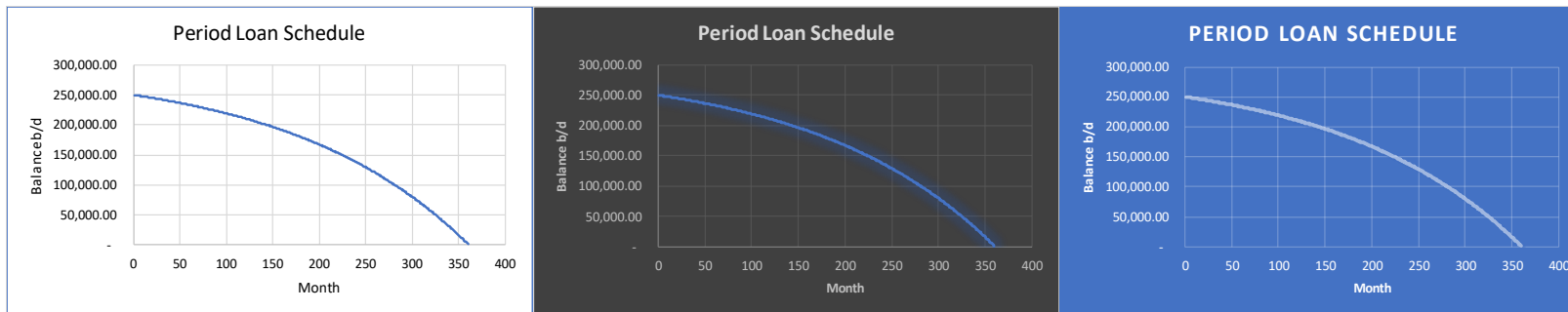
Using Graphs and Figures

- Notice how the charts on the next slide obey the rules of charting:
 - A clear and meaningful title
 - Axes clearly labelled as necessary
 - The units clearly expressed
 - A legend if one is needed
 - Appropriate use of colour
- Using the most appropriate chart for the message to be conveyed

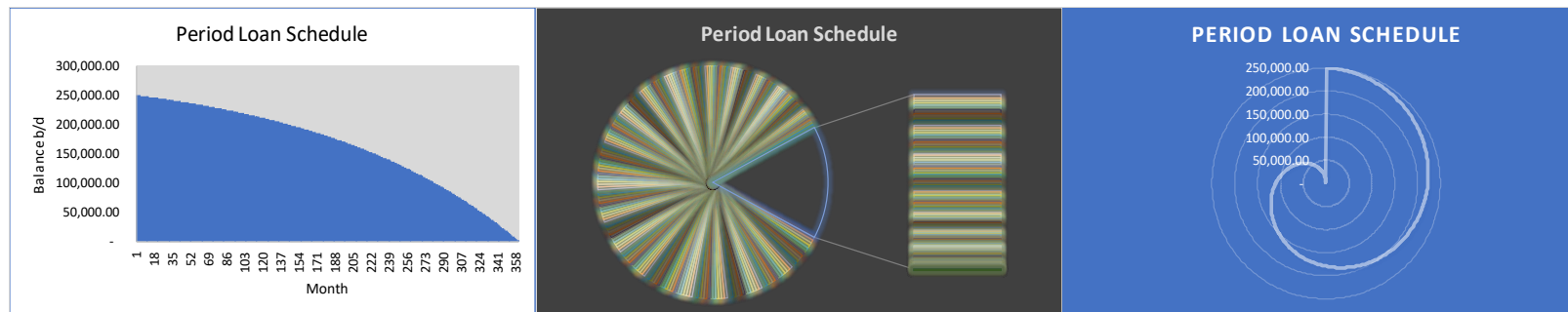


Using Graphs and Figures

How about the following three versions of the same chart? Is one more appropriate than the others or is it simply a matter of colour?



How about these three versions of the same chart?



Using Graphs and Figures

- Labelling figures in your report
- Figures should be clearly labelled so they can be accurately referred to in any written discussion: each figure should have a title and a number, for example:

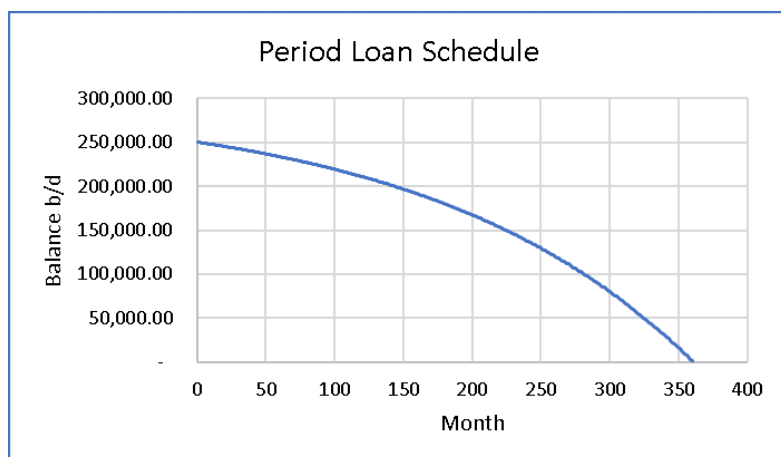


Figure 1: The Opening periodic balance on a 30 year loan of \$250,000

Using Graphs and Figures



Month	Balance b/d	Period Interest	Period Payment	Balance c/d
1	250,000.00	1,302.08	1,539.29	249,762.79
2	249,762.79	1,300.85	1,539.29	249,524.35
3	249,524.35	1,299.61	1,539.29	249,284.66
4	249,284.66	1,298.36	1,539.29	249,043.72
5	249,043.72	1,297.10	1,539.29	248,801.53
6	248,801.53	1,295.84	1,539.29	248,558.08
7	248,558.08	1,294.57	1,539.29	248,313.36
8	248,313.36	1,293.30	1,539.29	248,067.37
9	248,067.37	1,292.02	1,539.29	247,820.09
10	247,820.09	1,290.73	1,539.29	247,571.53

Table 5: First ten periods of the 30 year loan showing balances, periodic interest and periodic total payment

Error Capturing

- What do we do about capturing such errors?
- The answer to the above question is, to anticipate them. Simple, short, examples, prove the case. In the following table, I show periodic principal payments twice: using two different formulas.
 - Formula 1 =PPMT(B8/12,SEQUENCE(360),B7,-B6,0)
 - Formula 2 =PPMT(B\$8/12,A14,B\$7,-B\$6,0)
- Yet they both give exactly the same answers. Why am I telling you this? Well, in some cases, we trap errors by calculating results at least two ways and by comparing the answers, confirm that the answer is correct or incorrect.

Error Capturing

- When we discuss capital budgeting, we will evaluate the NPV of a series of projects using both a tabular and a formula approach and we check the validity of our work by comparing the two sets of answers, that need to agree with each other.

Error Capturing

- Alternatively, if we work through a model to find the answer to a problem is X and we know that the answer should be X, we can easily set up a cell next to or near an answer that might look something like this:
 - Cell H26 =IF(AND(G25=1000,G26=1000),1,0)
- That says if both answers to the same question are 1000, then we see the number 1 in the cell H26 if they do not agree, we flag an error by entering 0 in that control cell, H26. You might even format cell H26 to be black if it shows 1 and red if it shows 0.

Security and Protection of Models

- Most businesses clearly need to guard their data and information and there are several ways of doing that
 - In Excel, Protect sheets by setting up passwords
 - Keep spreadsheet files secret by allowing only certain personnel for working on them
 - Keeping highly sensitive data off site
 - Using software other than Excel since Excel's security and protection features are not so strong

Exporting to Other Packages for Publishing



- Let's take a look at the ways in which we might publish, export, data from Excel

Excel Workbook (*.xlsx)

Excel Macro-Enabled Workbook (*.xlsm)
Excel Binary Workbook (*.xlsb)
Excel 97-2003 Workbook (*.xls)
CSV UTF-8 (Comma delimited) (*.csv)
XML Data (*.xml)
Single File Web Page (*.mht, *.mhtml)
Web Page (*.htm, *.html)
Excel Template (*.xltx)
Excel Macro-Enabled Template (*.xltxm)
Excel 97-2003 Template (*.xlt)
Text (Tab delimited) (*.txt)
Unicode Text (*.txt)
XML Spreadsheet 2003 (*.xml)
Microsoft Excel 5.0/95 Workbook (*.xls)

CSV (Comma delimited) (*.csv)
Formatted Text (Space delimited) (*.prn)
Text (Macintosh) (*.txt)
Text (MS-DOS) (*.txt)
CSV (Macintosh) (*.csv)
CSV (MS-DOS) (*.csv)
DIF (Data Interchange Format) (*.dif)
SYLK (Symbolic Link) (*.slk)
Excel Add-in (*.xlam)
Excel 97-2003 Add-in (*.xla)
PDF (*.pdf)
XPS Document (*.xps)
Strict Open XML Spreadsheet (*.xlsx)
OpenDocument Spreadsheet (*.ods)

That's 28 possible export types:
although some are quite similar to each other in some ways

Technical Issues to be Considered

- When building a financial model you need to consider such matters as
 - The version of Excel you are using, for the reasons we have just been discussing
 - The memory built into your computer
 - Disk storage space
 - HDD or SDD?
 - Your internet connection and its speed
- The subject of your model: is Excel the best solution for them?

Technical Issues to be Considered

- Maybe most of all, these days, is the **volume of data** you are storing or modelling
 - How about your add ins? What do you use?
 - Power Query?
 - Power Pivot?

Documentation

- Minimum Requirements in the documentation page
 - Filename and path
 - Date
 - Spreadsheet Owner
 - Overview
 - How to use the spreadsheet
 - Output
 - Calculations
 - Input
 - Initial Testing Log
 - Change Log

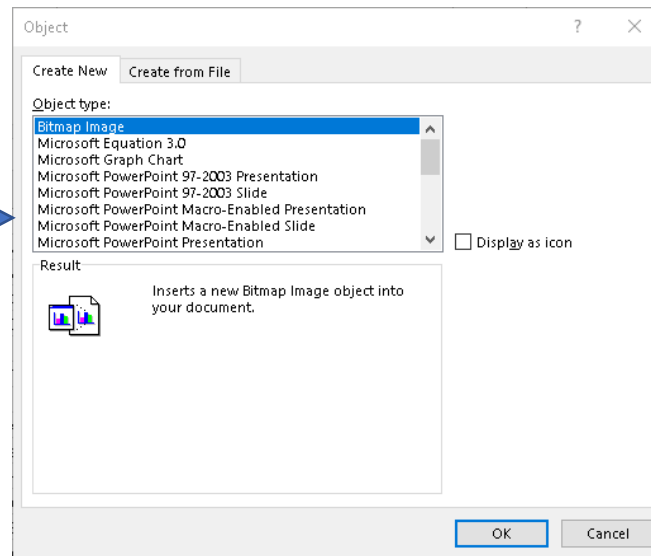
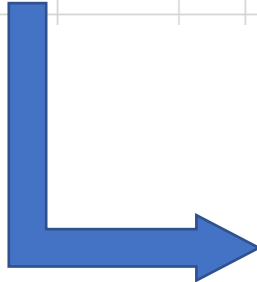
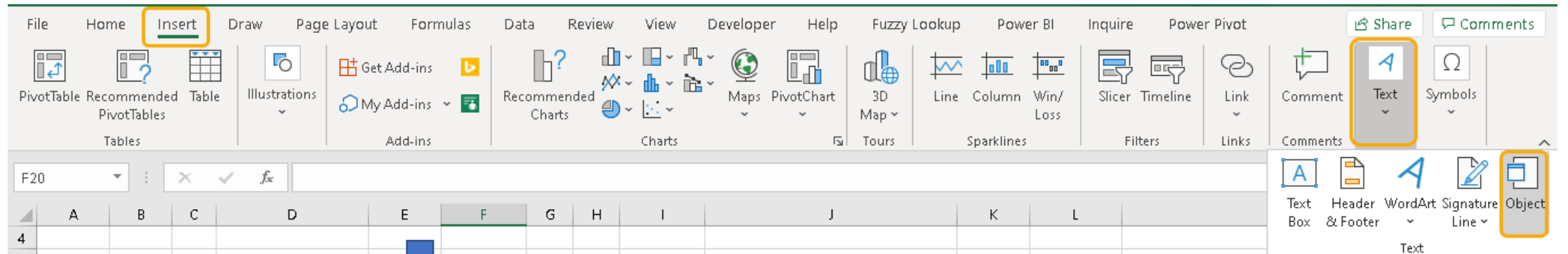
Object Embedding

- You can use Object Linking and Embedding (OLE) to include content from other programs, such as Word or Excel
- OLE is supported by many different programs and OLE is used to make content that is created in one program available in another program. For example, you can insert an Office Word document in an Office Excel workbook. To see what types of content that you can insert, click
- Insert ... Text ... Object
- Only programs that are installed on your computer and that support OLE objects appear in the Object type box

Object Embedding



CTS SOLUTIONS



Changing Pivot Table Number Formatting



- We can do this by hand
- To make these changes automatically, use a Macro or VBA: this page explains what to do, it contains text that explains what to do and a YouTube video of what to do. All of this is free of charge, just visit the page:
- <https://www.excelcampus.com/pivot-tables/automatic-default-number-formatting/>
- There is also an Add In to install but this is not free of charge and since I have not tried it, I am not recommending it in any way. Please feel free to try it, however, as you wish.

#VALUE! Error

- #VALUE is Excel's way of saying,
- *"There's something wrong with the way your formula is typed. Or, there's something wrong with the cells you are referencing."*
- The error is very general and it can be hard to find the exact cause of it. The information on this page shows common problems and solutions for the error. You may need to try one or more of the solutions to fix your own error.

#VALUE! Error

- If we copy values from a web page or a Word file or a PDF file ... there is a chance that they are pasted as text and not values.
- It is also possible that copying will bring with it all sorts of extra characters: a common problem is that “” when copied from Word or PowerPoint might not work ... if you are creating a formula from Word, for example, it is not pasted as the version of “” that Excel knows.
- The same is true of – and spaces and maybe many others.
- If you are convinced that your work is correct but it is still not working, delete and retype the characters other than values.

#VALUE! Error

- Dates are a potential problem:
- I use dd/mm/yyyy but if I copy from a US file or web page, that is likely to be formatted as mm/dd/yyyy and Excel might not recognise the problem in your version of the file/data.
- Additional spaces might be a problem ... but difficult to see: Find %
Replace double spaces with a single space ... repeat it again because the cells might actually include treble or quadruple spaces ... or more.
Keep replacing until 0 changes have been made

#VALUE! Error

- Use the VALUE() and/or TRIM() and/or CLEAN() functions