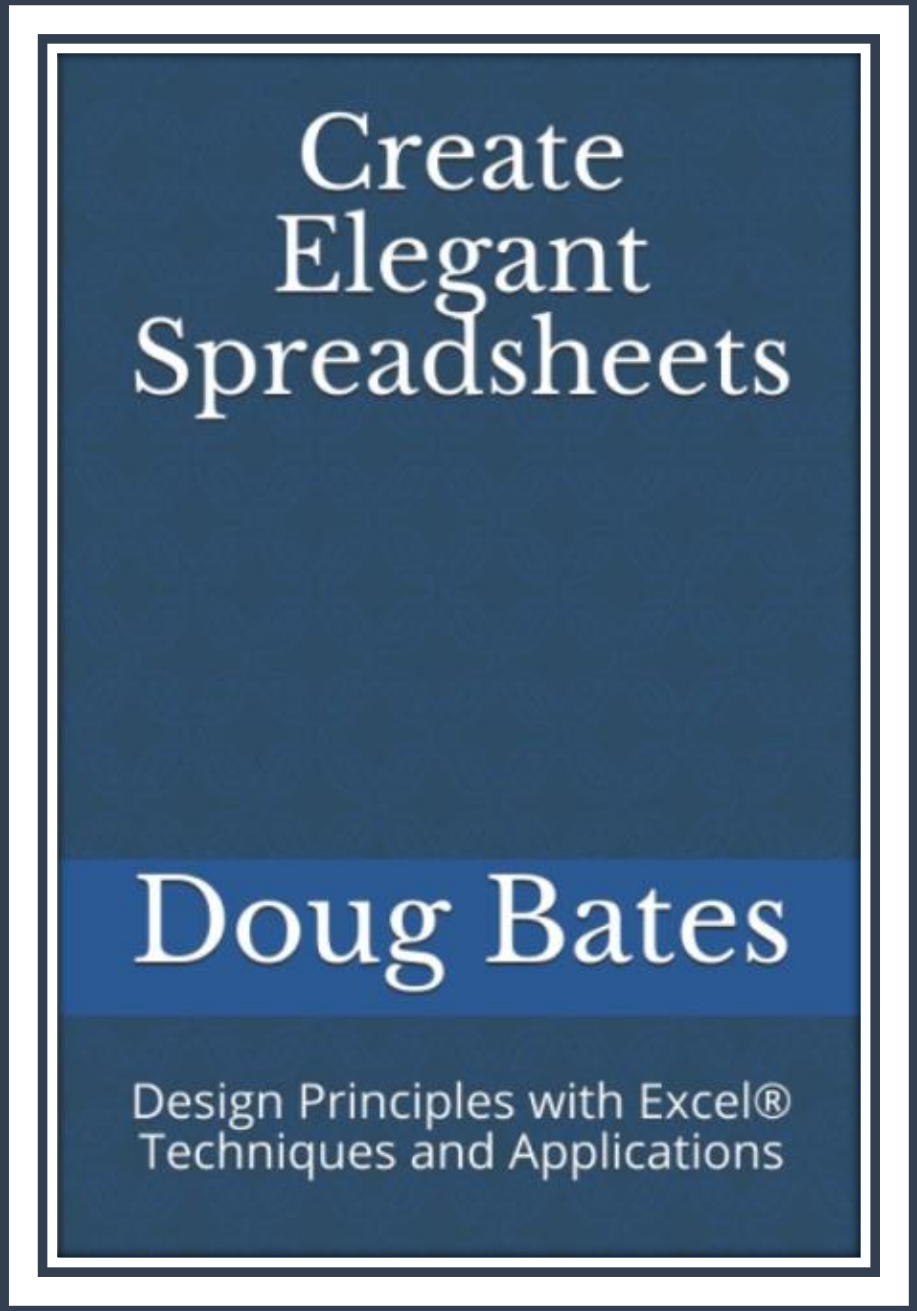
xlegant.com
Product Summary

This is a brief visual summary of the screens and features of the products offered on xlegant.com, as a companion to the book, Create Elegant Spreadsheets by Doug Bates.

Most formulas are explained in the book. All VBA code is available as a free download.

Please subscribe to xlegant.com for updates.

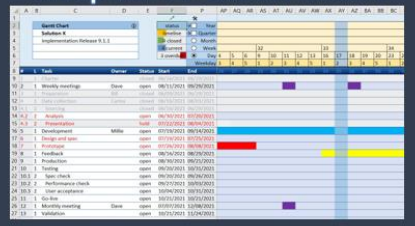


Overview

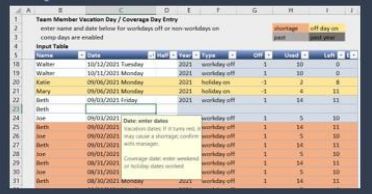
Chapter 4: Startup

Chapter 5: Keyboard Trainer

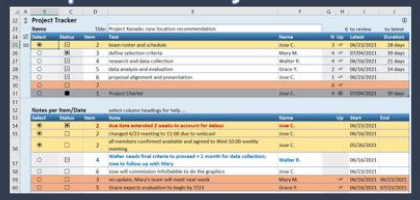
Chapter 6: Gantt Chart



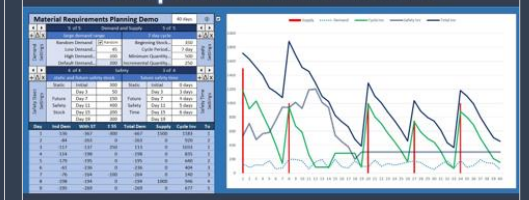
Chapter 7: Team Calendar



Chapter 8: Project Tracker

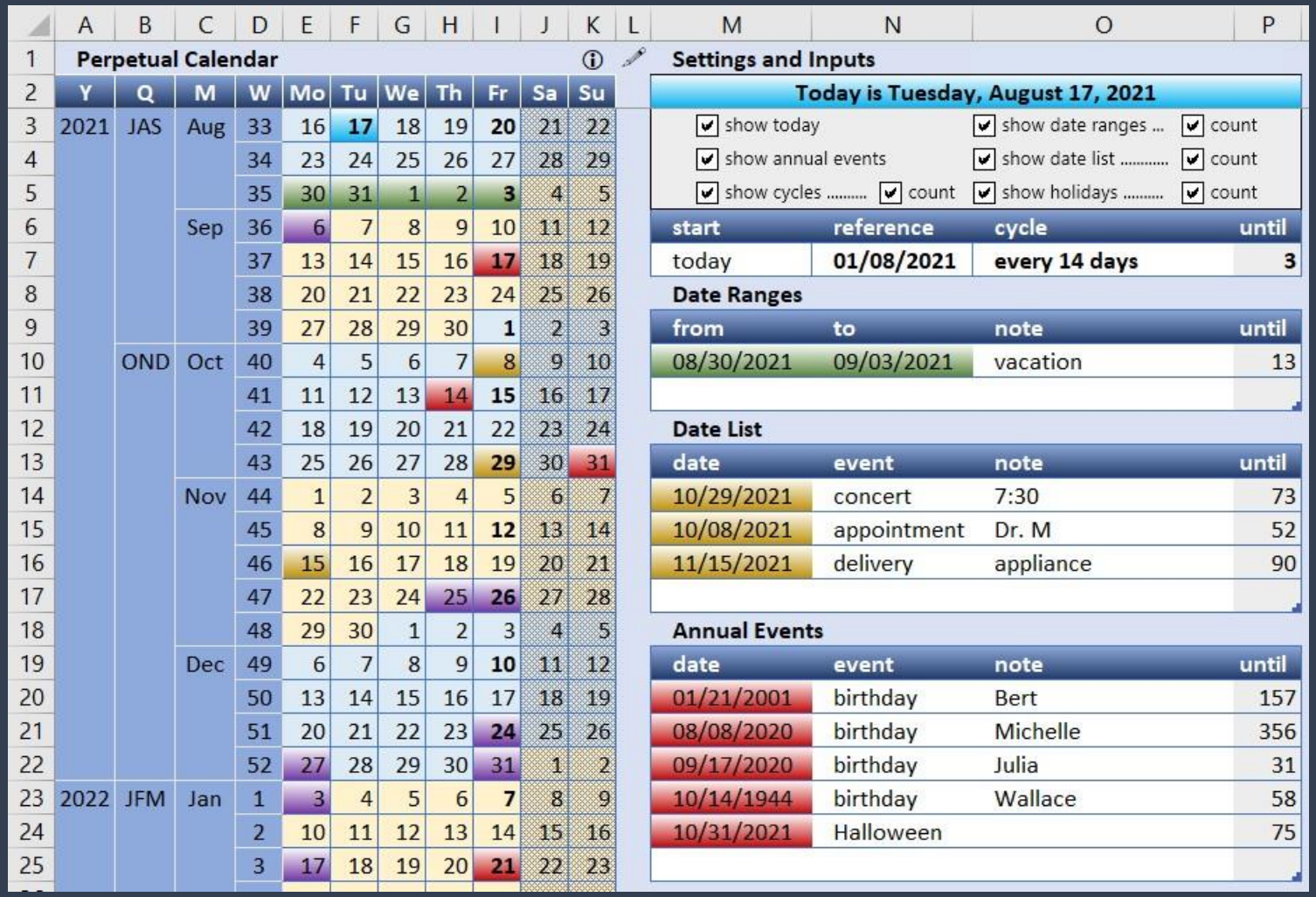


Chapter 9: MRP Demo



Chapter 10: Fun and Games

Chapter 4: Startup



Perpetual Calendar

Y	Q	M	W	Mo	Tu	We	Th	Fr	Sa	Su
2021	JAS	Aug	33	16	17	18	19	20	21	22
			34	23	24	25	26	27	28	29
			35	30	31	1	2	3	4	5
		Sep	36	6	7	8	9	10	11	12
			37	13	14	15	16	17	18	19
			38	20	21	22	23	24	25	26
			39	27	28	29	30	1	2	3
	OND	Oct	40	4	5	6	7	8	9	10
			41	11	12	13	14	15	16	17
			42	18	19	20	21	22	23	24
			43	25	26	27	28	29	30	31
		Nov	44	1	2	3	4	5	6	7
			45	8	9	10	11	12	13	14
			46	15	16	17	18	19	20	21
			47	22	23	24	25	26	27	28
			48	29	30	1	2	3	4	5
		Dec	49	6	7	8	9	10	11	12
			50	13	14	15	16	17	18	19
			51	20	21	22	23	24	25	26
			52	27	28	29	30	31	1	2
2022	JFM	Jan	1	3	4	5	6	7	8	9
			2	10	11	12	13	14	15	16
			3	17	18	19	20	21	22	23

Settings and Inputs

Today is Tuesday, August 17, 2021

- ☑ show today
- ☑ show annual events
- ☑ show cycles ..... ☑ count
- ☑ show date ranges ... ☑ count
- ☑ show date list ..... ☑ count
- ☑ show holidays ..... ☑ count

start	reference	cycle	until
today	01/08/2021	every 14 days	3

Date Ranges

from	to	note	until
08/30/2021	09/03/2021	vacation	13

Date List

date	event	note	until
10/29/2021	concert	7:30	73
10/08/2021	appointment	Dr. M	52
11/15/2021	delivery	appliance	90

Annual Events

date	event	note	until
01/21/2001	birthday	Bert	157
08/08/2020	birthday	Michelle	356
09/17/2020	birthday	Julia	31
10/14/1944	birthday	Wallace	58
10/31/2021	Halloween		75

Startup

ABOUT STARTUP

A personal Startup file is a place to keep all your favorite tools hidden but accessible. This one has several reference sheets, samples and general macros useful in project development.

Calendar: perpetual calendar with different highlights for holidays, special dates, date ranges and annual events. Includes holiday calculation and monthly workday report.
Controls: compares Form and ActiveX controls with samples and tips.
Symbols: lists ASCII characters in Symbol fonts, sample Unicode symbols, and suggested AutoCorrect symbols.
Themes: lists the 34 Themes with Font and Color for reference.
Colors: presents colors several different ways with sample macros to read and set colors. Includes VBA navigation between column groups like sheets-within-a-sheet.
Functions: tabulates results of selected single and dual-operand functions.
Combinations: lists members of all four combination variants by selecting up to 4 of up to 9 digits
Outline: builds and formats an outline, with slicer selection.
Macros: ListNames (see result on Names sheet, can also upload Name comments), ListFormatConditions (only works with formula conditions; see result on FormatConditions sheet), ClearPageBreaks (assigned to Shift+Ctrl+P), RecordColors (records decimal and RGB values for a column of colored cells)

Excel features: Advanced formulas; Name Manager named ranges and formulas; Data Validation rules and messages; Conditional Formatting; Tables linked for input, process and output; Column Groups; Controls; Symbols; Themes; Colors; Functions; Slicers **VBA**: Colors Sheet Module, navigation and formatting; Functions Sheet Module, formatting; General Module, general use macros.

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Startup

USAGE NOTES

This file is provided as a normal Excel Macro-Enabled Workbook, Startup.xlsm. The intent of a startup file is twofold. First, it is to reside in the folder below, from which files are opened automatically when Excel starts:

C:\Users\ (username) \AppData\Roaming\Microsoft\Excel\XLSTART (or similar)

Second, the startup file is meant to be hidden normally (Alt-W,H), and only unhidden as needed (Alt-W,U).

You can hide this file and save it in your XLSTART as above, or you can have Excel create a startup for you, and build as you go. Excel provides a default startup file called PERSONAL.xlsb, which will be created in the XLSTART folder for you, with view hidden, in the following condition:

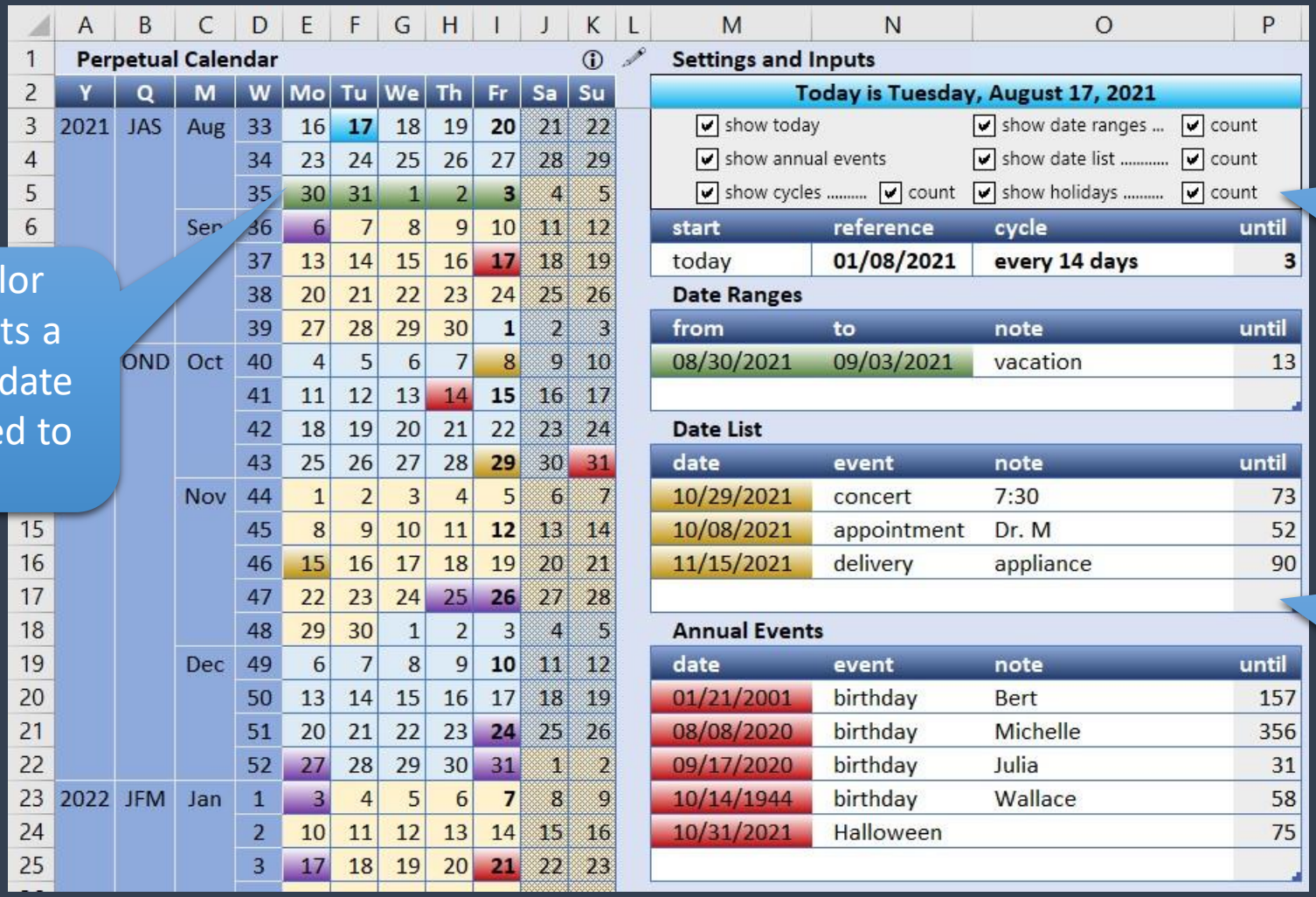
1. you record a macro
2. you select "Personal Macro Workbook" in the "Store macro in:" box.
3. the next time you shut down Excel, you click "Save" when prompted.

The main purpose is to make it possible to run public macros in other files without the need to copy or import the module. For that purpose you never need to unhide the file. It is always visible in VBA (Alt+F11) and can be edited and saved there.

The second purpose is that since it is always open, it is a convenient place to store notes, cheat sheets, reference information or anything you want to keep accessible. For this purpose, add as many sheets as you want, and either unhide it when needed, or leave it unhidden if it doesn't bother you.

Note: there's nothing special about PERSONAL.xlsb, it's just a shortcut to creating the startup file. The .xlsb format bypasses macro security but behaves like a normal spreadsheet. Thus, you can start with that and add to it as you go, or you can save this one as described above.

Calendar Input



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			42	18	19	20	21	22	23	24
			43	25	26	27	28	29	30	31
		Nov	44	1	2	3	4	5	6	7
			45	8	9	10	11	12	13	14
			46	15	16	17	18	19	20	21
			47	22	23	24	25	26	27	28
			48	29	30	1	2	3	4	5
		Dec	49	6	7	8	9	10	11	12
			50	13	14	15	16	17	18	19
			51	20	21	22	23	24	25	26
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09/17/2020	birthday	Julia	31
10/14/1944	birthday	Wallace	58
10/31/2021	Halloween		75

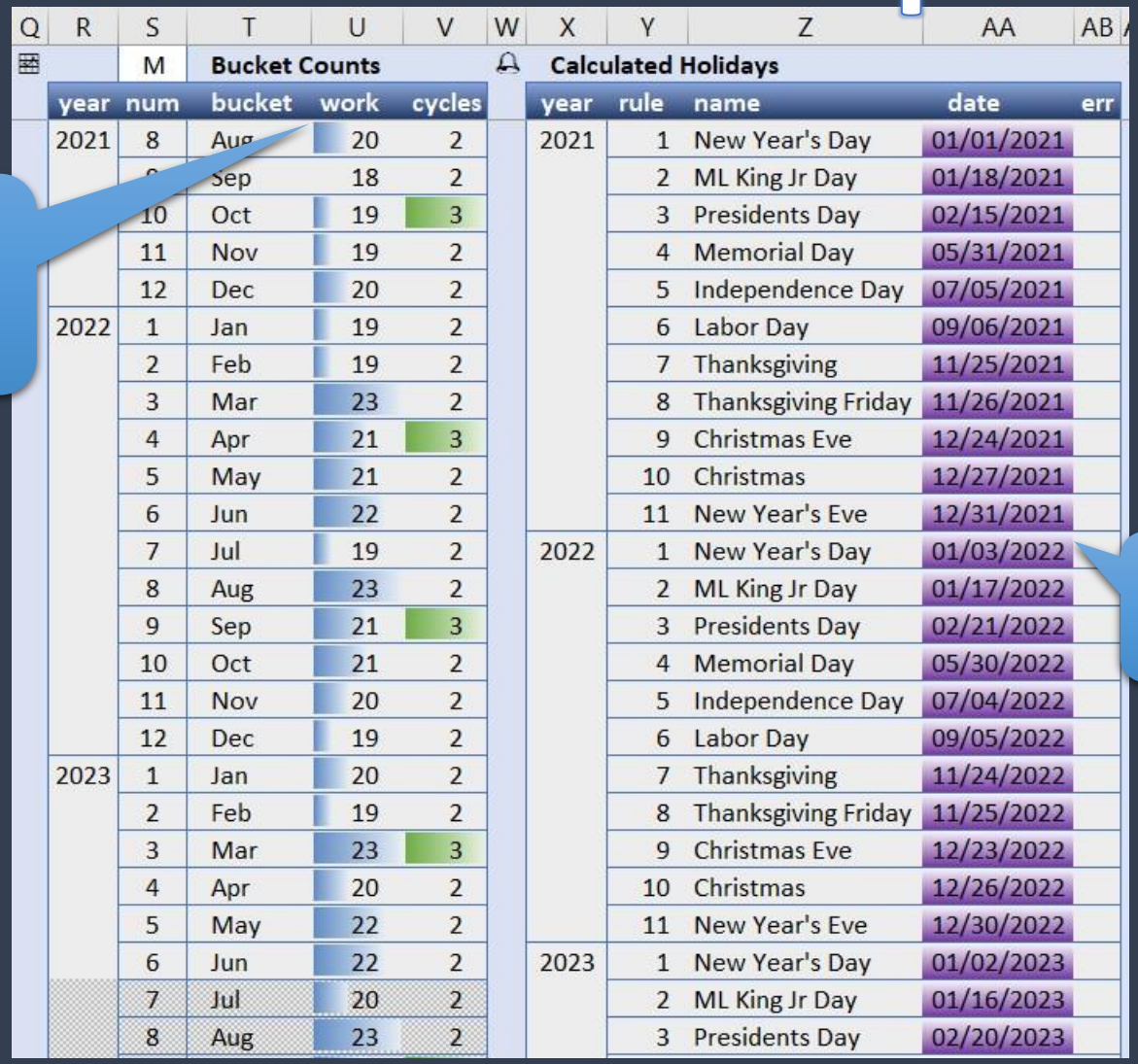
Each color represents a different date type linked to input

Display and bucket counts are controlled by checkboxes

Stacked input tables allow easy insert and delete of records

Calendar Output

Workday count by Week or Month controlled by “count” checkboxes



M

Bucket Counts

year	num	bucket	work	cycles
2021	8	Aug	20	2
	9	Sep	18	2
	10	Oct	19	3
	11	Nov	19	2
	12	Dec	20	2
2022	1	Jan	19	2
	2	Feb	19	2
	3	Mar	23	2
	4	Apr	21	3
	5	May	21	2
	6	Jun	22	2
	7	Jul	19	2
	8	Aug	23	2
	9	Sep	21	3
	10	Oct	21	2
	11	Nov	20	2
	12	Dec	19	2
2023	1	Jan	20	2
	2	Feb	19	2
	3	Mar	23	3
	4	Apr	20	2
	5	May	22	2
	6	Jun	22	2
	7	Jul	20	2
	8	Aug	23	2

Calculated Holidays

year	rule	name	date	err
2021	1	New Year's Day	01/01/2021	
	2	ML King Jr Day	01/18/2021	
	3	Presidents Day	02/15/2021	
	4	Memorial Day	05/31/2021	
	5	Independence Day	07/05/2021	
	6	Labor Day	09/06/2021	
	7	Thanksgiving	11/25/2021	
	8	Thanksgiving Friday	11/26/2021	
	9	Christmas Eve	12/24/2021	
	10	Christmas	12/27/2021	
	11	New Year's Eve	12/31/2021	
2022	1	New Year's Day	01/03/2022	
	2	ML King Jr Day	01/17/2022	
	3	Presidents Day	02/21/2022	
	4	Memorial Day	05/30/2022	
	5	Independence Day	07/04/2022	
	6	Labor Day	09/05/2022	
	7	Thanksgiving	11/24/2022	
	8	Thanksgiving Friday	11/25/2022	
	9	Christmas Eve	12/23/2022	
	10	Christmas	12/26/2022	
	11	New Year's Eve	12/30/2022	
2023	1	New Year's Day	01/02/2023	
	2	ML King Jr Day	01/16/2023	
	3	Presidents Day	02/20/2023	

Calculated holidays

Calendar Configuration

Date format and Work week settings

Configuration

Date settings	
Date format settings	
mdy	Date bucket order
/	Date separator
Work week settings	
Mon-Fri	Work week
0001111	Custom week

Work week lookup table

Work	Type	String
Mon-Fri	11	0000011
Tue-Sat	12	1000001
Wed-Sun	13	1100000
Thu-Mon	14	0110000
Fri-Tue	15	0011000
Sat-Wed	16	0001100
Sun-Thu	17	0000110
custom	11	0001111

Holiday Rules

rule	holiday	month	form	par1	par2
1	New Year's Day	1	1	1	3
2	ML King Jr Day	1	2	3	1
3	Presidents Day	2	2	3	1
4	Memorial Day	5	2	5	1
5	Independence Day	7	1	4	1
6	Labor Day	9	2	1	1
7	Thanksgiving	11	2	4	4
8	Thanksgiving Friday	11	2	4	4.1
9	Christmas Eve	12	1	24	2
10	Christmas	12	1	25	3
11	New Year's Eve	12	1	31	2

Rules for holiday calculation

Holiday Input

rule	holiday	date	day	year	err
none	Alternate	07/05/2022	Tue	2022	

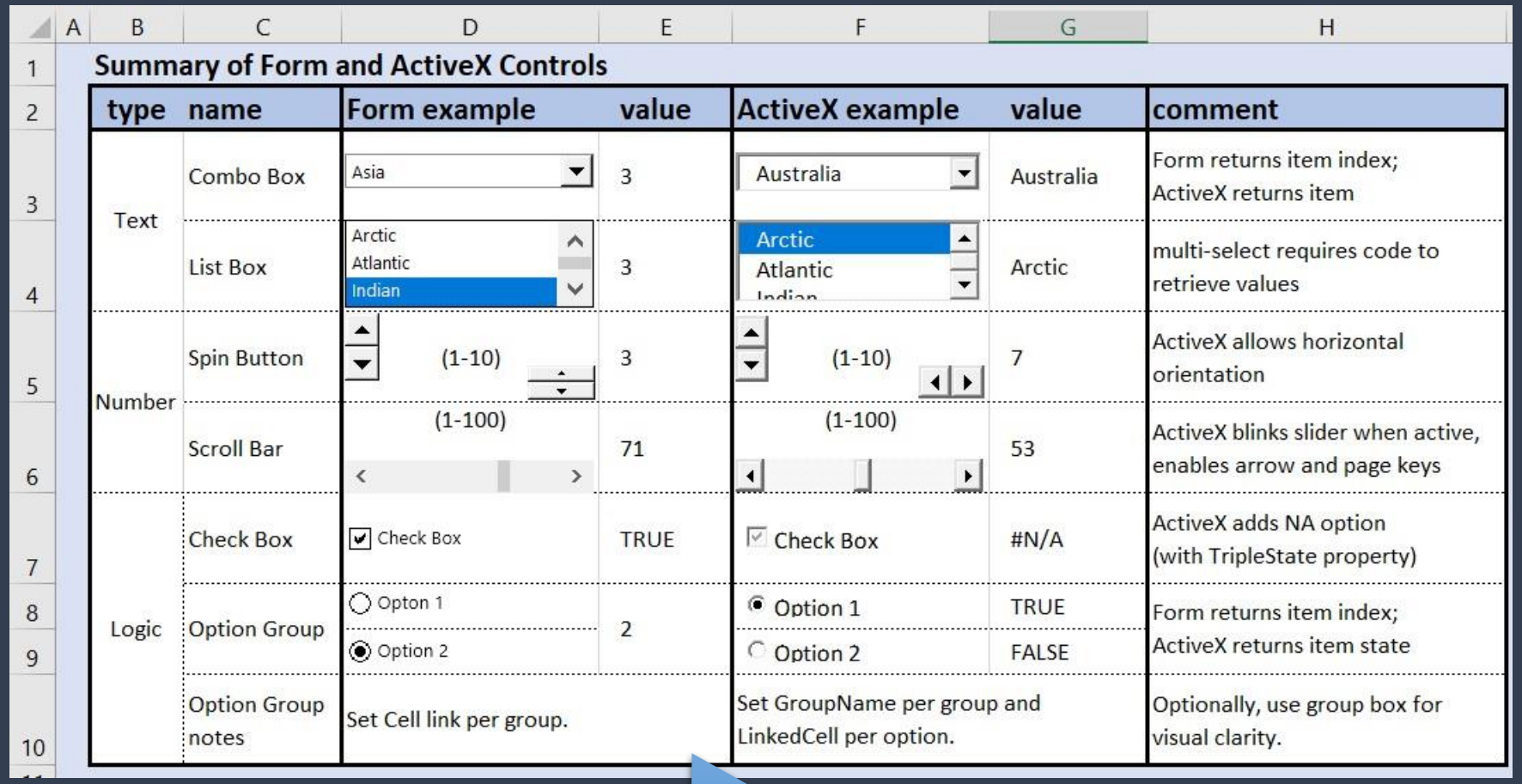
Alternate holiday input

Calendar Processing

AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW
Days Table				show	show	show	show		count	count	count	
Y	**M**	**W**	**Day**	**isAnnual**	**isRange**	**isList**	**isHoliday**	**Highlights**	**CtRng**	**CtList**	**CtHols**	**OffDays**
2021	Sep	35	1		1			1	1			09/01/2021
			2		1			1	1			09/02/2021
			3		1			1	1			09/03/2021
			4									
			5									
		36	6				1	1			1	09/06/2021
			7									
			8									
			9									
			10									
			11									
			12									
		37	13									
			14									
			15									
			16									
			17	1		1		2		1		09/17/2021
			18									
			19									
		38	20									

Hidden processing table

Controls Comparison



Summary of Form and ActiveX Controls

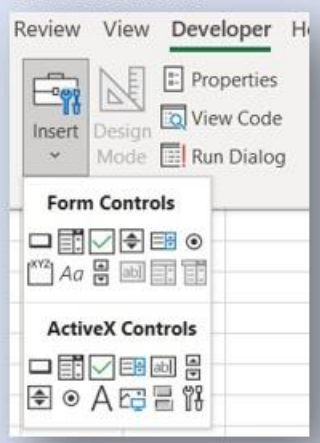
type	name	Form example	value	ActiveX example	value	comment
Text	Combo Box	Asia	3	Australia	Australia	Form returns item index; ActiveX returns item
	List Box	Arctic Atlantic Indian	3	Arctic Atlantic Indian	Arctic	multi-select requires code to retrieve values
Number	Spin Button	(1-10)	3	(1-10)	7	ActiveX allows horizontal orientation
	Scroll Bar	(1-100)	71	(1-100)	53	ActiveX blinks slider when active, enables arrow and page keys
Logic	Check Box	Check Box	TRUE	Check Box	#N/A	ActiveX adds NA option (with TripleState property)
	Option Group	Opton 1 Option 2	2	Option 1 Option 2	TRUE FALSE	Form returns item index; ActiveX returns item state
	Option Group notes	Set Cell link per group.		Set GroupName per group and LinkedCell per option.		Optionally, use group box for visual clarity.

Form and ActiveX controls for reference

Controls Properties

Developer Tab

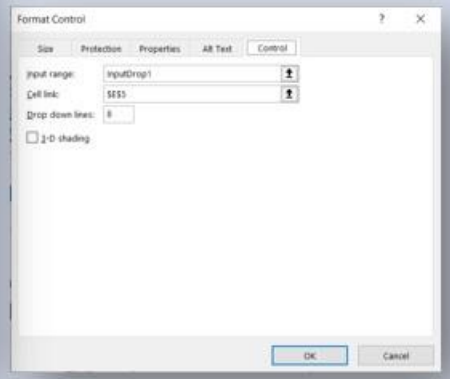
Controls Section



Form Properties

Design: right-click, Format Control

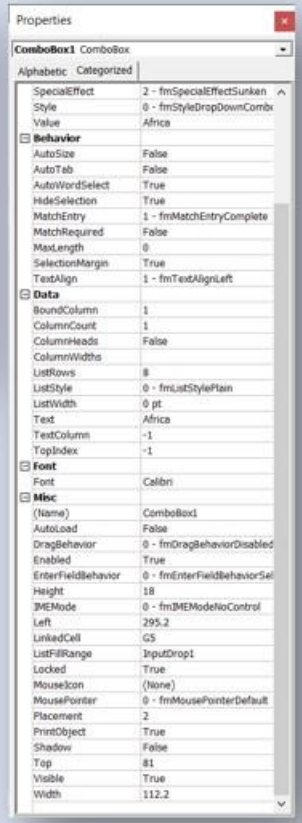
Properties:



ActiveX Properties

Design Mode: Alt+LDM

Properties: Alt+LL



Control property navigation

List Box as Option Group:

Ocean
○ Arctic
◉ Atlantic
○ Indian
○ Pacific
○ Southern

Selection: Atlantic

List Box as Multi-select Group:

Ocean
☐ Arctic
☐ Atlantic
☐ Indian
☐ Pacific
☐ Southern

Selection requires coding

Symbol Fonts

ASCII characters in standard font and five symbol fonts

Enter the character from keyboard (Body column, 32-126), or press Alt while typing the 4-digit code on the number pad (127-255), or use =CHAR(Code). Set the font of the cell or character. To display certain symbols without changing font, try Unicode.

ASCII symbol reference

Code	Entry	Body	Symbol	Webdings	Wingdings	Wingdings 2	Wingdings 3
119	by key	w	ω			❸	▷
120	by key	x	ξ			❹	◣
121	by key	y	ψ			❺	◢
122	by key	z	ζ		⌘	❻	◤
123	by key	{	{			❼	◥
124	by key	|	|	|		❽	◂
125	by key	}	}		“	❾	▸
126	by key	~	~		”	❿	▴
127	Alt+0127		□				
128	Alt+0128	€	□		⓪	⊙	▾
129	Alt+0129		□		①	○	▲
130	Alt+0130	‚	□		②	☽	▼
131	Alt+0131	ƒ	□		③	☾	◀
132	Alt+0132	„	□		④	✆	▶
133	Alt+0133		□		⑤	+	◀

Symbol Methods

Sample Unicode symbols

Copy the character or use =UNICHAR(Unicode). In Word, enter the hex code, then Alt+X.

Symbol	Unicode	Hex
←	8592	2190
↑	8593	2191
→	8594	2192
↓	8595	2193
↔	8596	2194
↕	8597	2195
↖	8598	2196
↗	8599	2197
↘	8600	2198
↙	8601	2199
↨	8616	21A8
∞	8734	221E
≈	8776	2248
≠	8800	2260
≡	8801	2261
≤	8804	2264
≥	8805	2265

Unicode examples

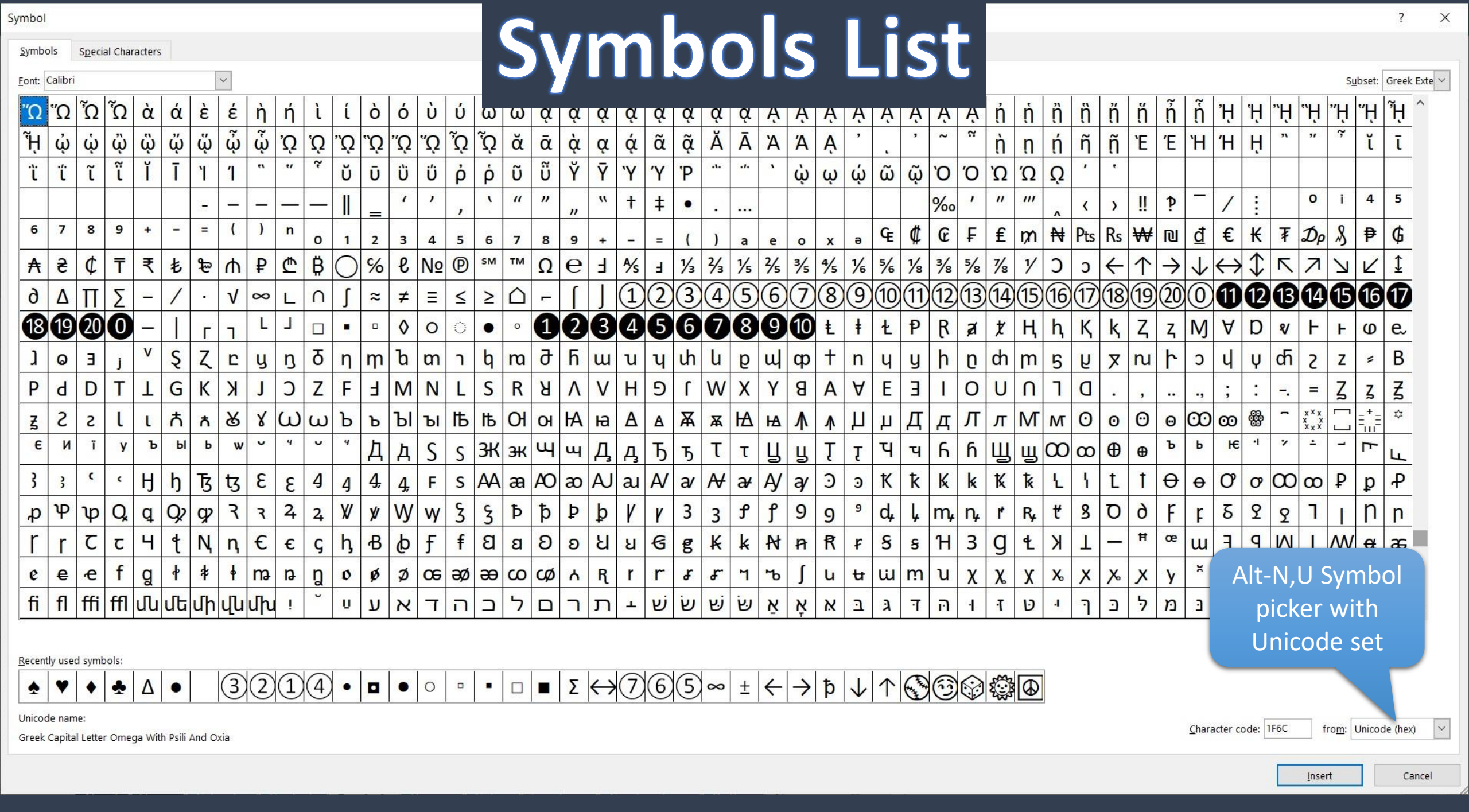
AutoCorrect

Suggested shortcuts: set in Alt-F,T,P, Alt+A. Ctrl+Z to revert as typed.

Replace	With
<<	←
^^	↑
>>	→
vv	↓
<->	↔
^v	↕
><	∞
~=	≈
\=	≠
\<=	≤
\>=	≥
+-	±
\/	÷
\x	×
\#	□
\o	○
*	•

Autocorrect examples

Symbols List



Theme Fonts

Current and listed theme fonts

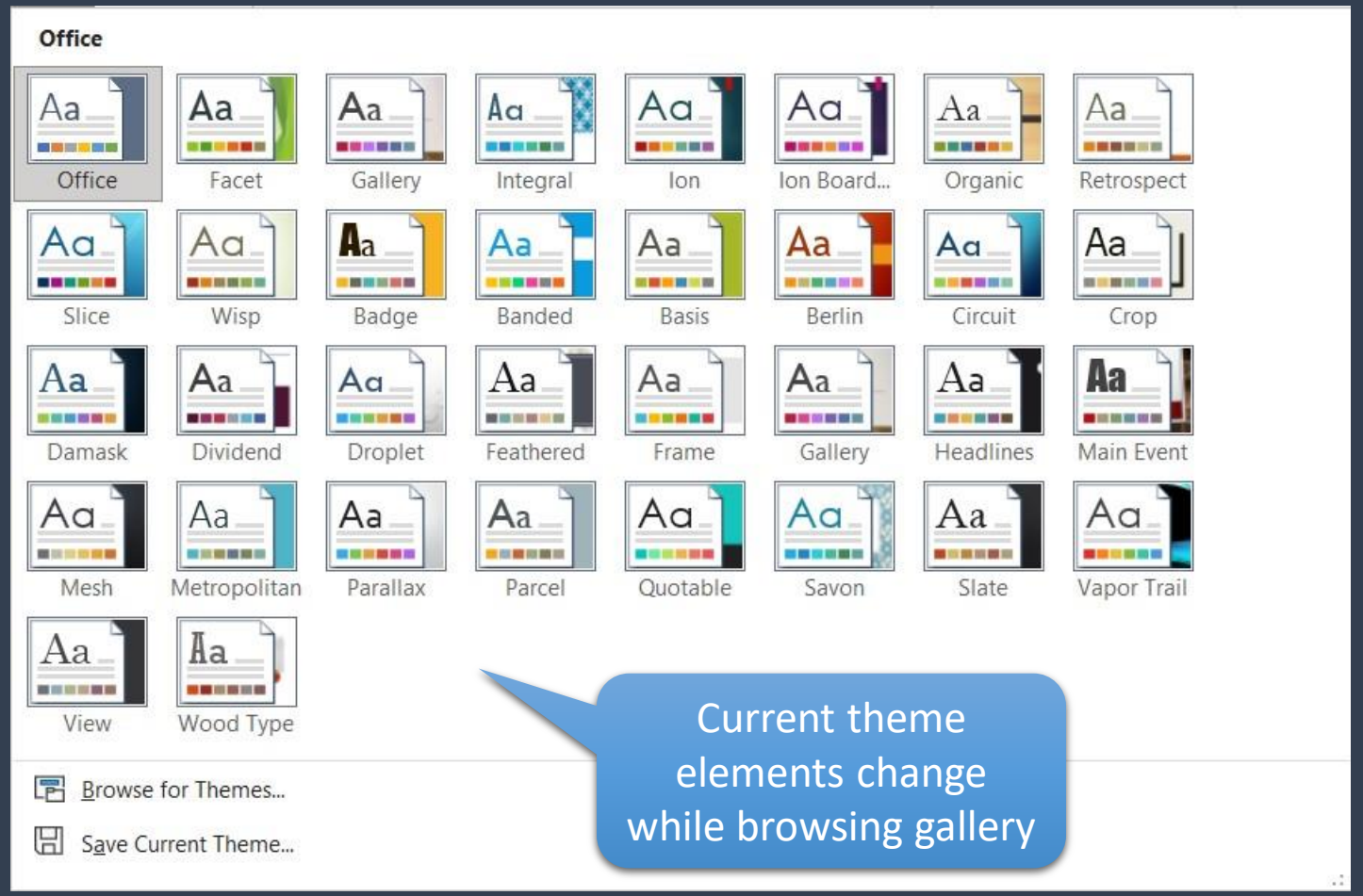
B	C	D	E
	<<<	headings font >>>	<<<
	current theme	<<<	listed theme >>>
ⓘ	Theme	Headings fixed	Body fixed
1	Office	Calibri Light	Calibri
2	Facet	Trebuchet MS	Trebuchet MS
3	Gallery	Gill Sans MT	Gill Sans MT
4	Integral	Tw Cen MT Condensed	Tw Cen MT
5	Ion	Century Gothic	Century Gothic
6	Ion Boardroom	Century Gothic	Century Gothic
7	Organic	Garamond	Garamond
8	Retrospect	Calibri Light	Calibri
9	Slice	Century Gothic	Century Gothic
10	Wisp	Century Gothic	Century Gothic
11	Badge	Impact	Gill Sans MT
12	Banded	Corbel	Corbel
13	Basis	Corbel	Corbel
14	Berlin	Trebuchet MS	Trebuchet MS
15	Circuit	Tw Cen MT	Tw Cen MT

Themes Colors

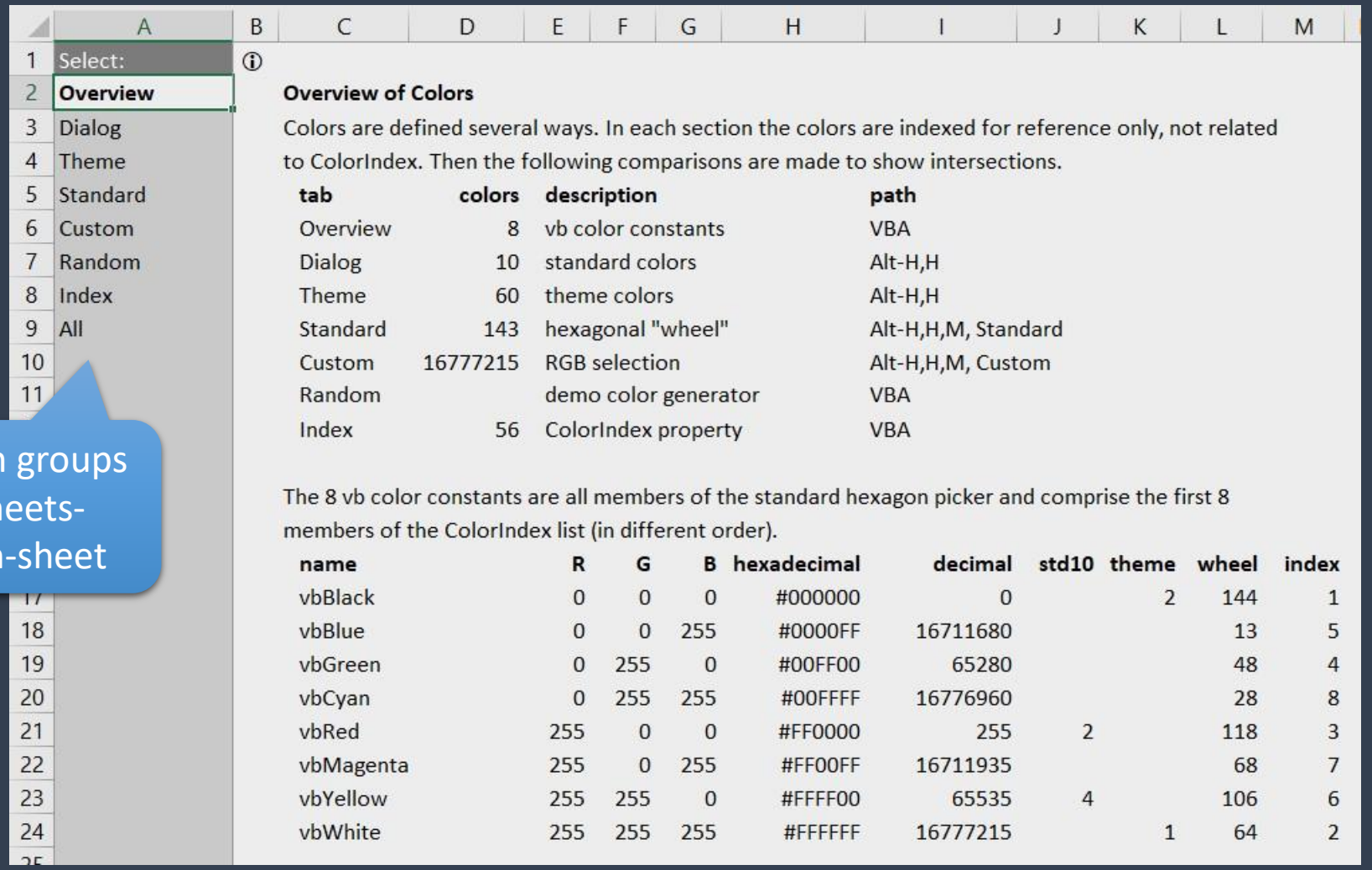
Current and listed theme colors

F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
body font >>>								<<< fixed Calibri font >>>							
<<< current theme >>>								<<< listed theme >>>							
Bkgd 2	Text 2 d	Acc 1 d	Acc 2 d	Acc 3 d	Acc 4 d	Acc 5 d	Acc 6 d	Bkgd 2	Text 2 f	Acc 1 fx	Acc 2 fx	Acc 3 fx	Acc 4 fx	Acc 5 fx	Acc 6 fx
Bkgd 2	Text 2	Acc 1	Acc 2	Acc 3	Acc 4	Acc 5	Acc 6	2E+07	7E+06	1E+07	3E+06	1E+07	49407	1E+07	5E+06
Bkgd 2	Text 2	Acc 1	Acc 2	Acc 3	Acc 4	Acc 5	Acc 6	2E+07	4E+06	3E+06	2E+06	2E+06	2E+06	2E+06	6E+06
Bkgd 2	Text 2	Acc 1	Acc 2	Acc 3	Acc 4	Acc 5	Acc 6	1E+07	5E+06	4E+06	9E+06	2E+07	1E+07	1E+07	1E+07
Bkgd 2	Text 2	Acc 1	Acc 2	Acc 3	Acc 4	Acc 5	Acc 6	2E+07	8E+06	1E+07	1E+07	1E+07	1E+07	5E+06	1E+07
Bkgd 2	Text 2	Acc 1	Acc 2	Acc 3	Acc 4	Acc 5	Acc 6	2E+07	6E+06	1E+06	1E+06	3E+06	9E+06	1E+07	1E+07
Bkgd 2	Text 2	Acc 1	Acc 2	Acc 3	Acc 4	Acc 5	Acc 6	2E+07	6E+06	7E+06	7E+06	4E+06	4E+06	2E+07	1E+07
Bkgd 2	Text 2	Acc 1	Acc 2	Acc 3	Acc 4	Acc 5	Acc 6	1E+07	2E+06	3E+06	7E+06	1E+07	3E+06	3E+06	4E+06
Bkgd 2	Text 2	Acc 1	Acc 2	Acc 3	Acc 4	Acc 5	Acc 6	2E+07	5E+06	1E+06	3E+06	4E+06	6E+06	8E+06	9E+06
Bkgd 2	Text 2	Acc 1	Acc 2	Acc 3	Acc 4	Acc 5	Acc 6	2E+07	1E+07	6E+06	9E+06	8E+06	2E+06	4E+06	2E+06
Bkgd 2	Text 2	Acc 1	Acc 2	Acc 3	Acc 4	Acc 5	Acc 6	1E+07	6E+06	1E+06	2E+06	5E+06	5E+06	5E+06	1E+07
Bkgd 2	Text 2	Acc 1	Acc 2	Acc 3	Acc 4	Acc 5	Acc 6	2E+07	6698	2E+06	6E+06	1E+07	8E+06	7E+06	8E+06
Bkgd 2	Text 2	Acc 1	Acc 2	Acc 3	Acc 4	Acc 5	Acc 6	2E+07	1E+07	49407	3E+06	8E+06	1E+07	9E+06	2E+06
Bkgd 2	Text 2	Acc 1	Acc 2	Acc 3	Acc 4	Acc 5	Acc 6	1E+07	5E+06	3E+06	3E+06	40702	1E+07	5E+06	9E+06
Bkgd 2	Text 2	Acc 1	Acc 2	Acc 3	Acc 4	Acc 5	Acc 6	2E+07	931485	1E+06	7E+06	8E+06	1E+07	2E+07	6E+06
Bkgd 2	Text 2	Acc 1	Acc 2	Acc 3	Acc 4	Acc 5	Acc 6	2E+07	7E+06	5E+06	4E+06	4E+06	1E+07	1E+07	1E+07
Bkgd 2	Text 2	Acc 1	Acc 2	Acc 3	Acc 4	Acc 5	Acc 6	1E+07	924441	9E+06	7E+06	6E+06	9E+06	1E+07	1E+07
Bkgd 2	Text 2	Acc 1	Acc 2	Acc 3	Acc 4	Acc 5	Acc 6	2E+07	8E+06	5E+06	1E+07	1E+07	1E+07	7E+06	4E+06
Bkgd 2	Text 2	Acc 1	Acc 2	Acc 3	Acc 4	Acc 5	Acc 6	2E+07	4E+06	3E+06	7E+06	5E+06	1E+07	1E+07	1E+07

Themes Gallery



Colors Overview



	A
1	Select:
2	**Overview**
3	Dialog
4	Theme
5	Standard
6	Custom
7	Random
8	Index
9	All
10	
11	

Column groups as sheets-within-sheet

Overview of Colors

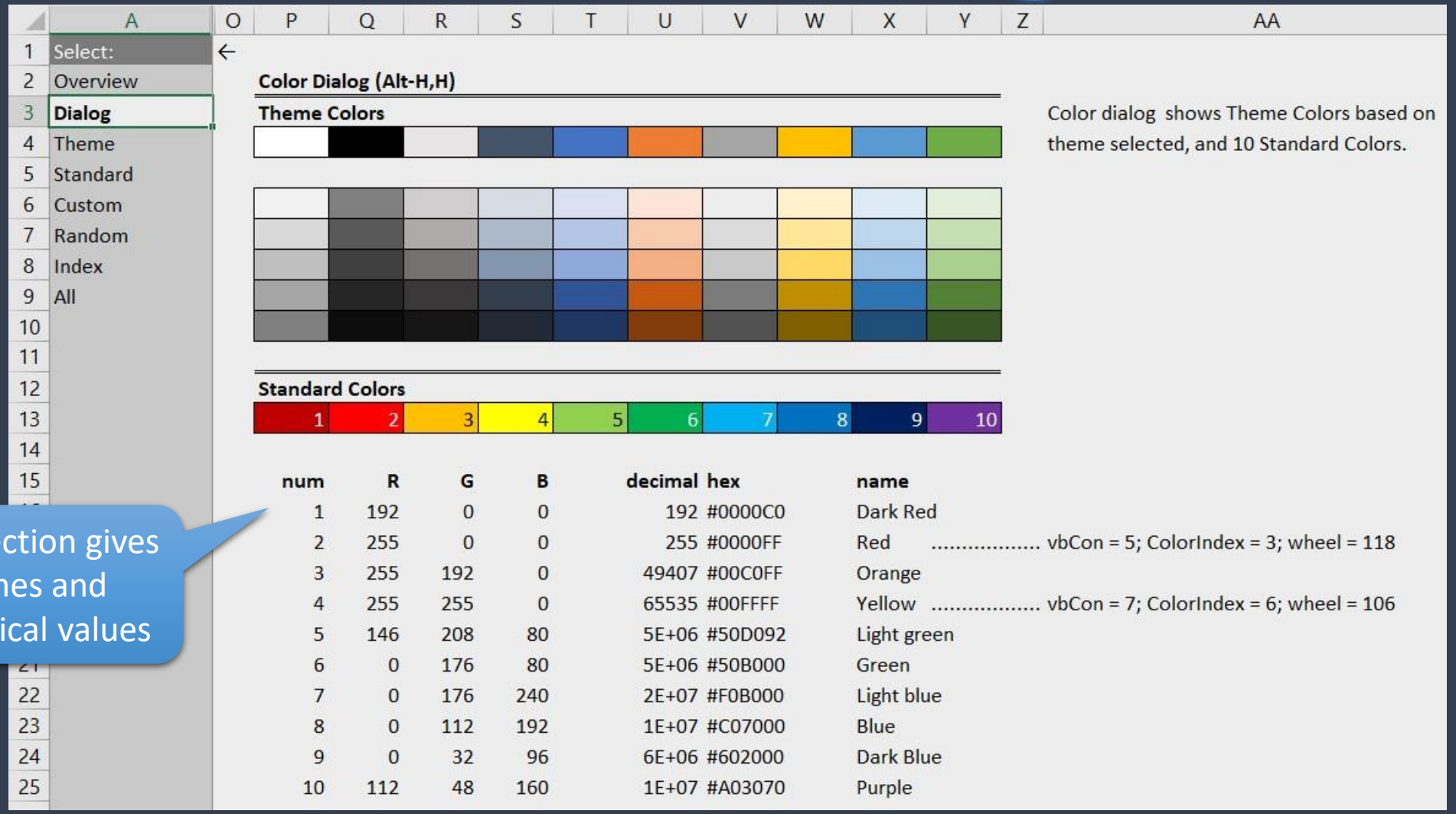
Colors are defined several ways. In each section the colors are indexed for reference only, not related to ColorIndex. Then the following comparisons are made to show intersections.

tab	colors	description	path
Overview	8	vb color constants	VBA
Dialog	10	standard colors	Alt-H,H
Theme	60	theme colors	Alt-H,H
Standard	143	hexagonal "wheel"	Alt-H,H,M, Standard
Custom	16777215	RGB selection	Alt-H,H,M, Custom
Random		demo color generator	VBA
Index	56	ColorIndex property	VBA

The 8 vb color constants are all members of the standard hexagon picker and comprise the first 8 members of the ColorIndex list (in different order).

name	R	G	B	hexadecimal	decimal	std10	theme	wheel	index
vbBlack	0	0	0	#000000	0		2	144	1
vbBlue	0	0	255	#0000FF	16711680			13	5
vbGreen	0	255	0	#00FF00	65280			48	4
vbCyan	0	255	255	#00FFFF	16776960			28	8
vbRed	255	0	0	#FF0000	255	2		118	3
vbMagenta	255	0	255	#FF00FF	16711935			68	7
vbYellow	255	255	0	#FFFF00	65535	4		106	6
vbWhite	255	255	255	#FFFFFF	16777215		1	64	2

Colors Dialog



Each section gives names and numerical values

Colors Theme

Select:
Overview
Dialog
Theme
Standard
Custom
Random
Index
All

Set Theme Colors

Sections with code have a button

Office Theme Colors (TC) and Shades (TS) and Contrasting Font Color (Alt-P,T,H to set Office Theme, then Alt-H,H)

num	TC	TCName	Office Theme tooltip	TS	TSName	font	R	G	B	hex	decimal	vbCon	std10 wheel	index
1	1	Dark1	White, Background 1	0%		2	255	255	255	#FFFFFF	16777215	8	64	2
2	2	Light1	Black, Text 1	0%		1	0	0	0	#000000	0	1	144	1
3	3	Dark2	Light Gray, Background 2	0%		2	231	230	230	#E7E6E6	15132391			
4	4	Light2	Blue-Gray, Text 2	0%		1	68	84	106	#44546A	6968388			
5	5	Accent1	Blue, Accent1	0%		1	68	114	196	#4472C4	12874308			
6	6	Accent2	Orange, Accent2	0%		1	237	125	49	#ED7D31	3243501			
7	7	Accent3	Gray, Accent3	0%		1	165	165	165	#A5A5A5	10855845			
8	8	Accent4	Gold, Accent4	0%		1	255	192	0	#FFC000	49407		3	
9	9	Accent5	Blue, Accent5	0%		1	91	155	213	#5B9BD5	13998939			
			een, Accent6	0%		1	112	173	71	#70AD47	4697456			
			hite, Background 1	-5%	Darker 5%	2	242	242	242	#F2F2F2	15921906			
			ack, Text 1	50%	Lighter 50%	1	128	128	128	#808080	8421504		135	16
			ht Gray, Background 2	-10%	Darker 10%	2	208	206	206	#D0CECE	13553360			
			e-Gray, Text 2	80%	Lighter 80%	2	214	220	228	#D6DCE4	14998742			
			lue, Accent1	80%	Lighter 80%	2	217	225	242	#D9E1F2	15917529			
16	6	Accent2	Orange, Accent2	80%	Lighter 80%	2	252	228	214	#FCE4D6	14083324			
17	7	Accent3	Gray, Accent3	80%	Lighter 80%	2	237	237	237	#EDEDED	15592941			
18	8	Accent4	Gold, Accent4	80%	Lighter 80%	2	255	242	204	#FFF2CC	13431551			
19	9	Accent5	Blue, Accent5	80%	Lighter 80%	2	221	235	247	#DDEBF7	16247773			
20	10	Accent6	Green, Accent6	80%	Lighter 80%	2	226	239	218	#E2EFDA	14348258			
21	1	Dark1	White, Background 1	-15%	Darker 15%	2	217	217	217	#D9D9D9				
22	2	Light1	Black, Text 1	35%	Lighter 35%	1	89	89	89	#595959				
23	3	Dark2	Light Gray, Background 2	-25%	Darker 25%	2	174	170	170	#AEAAAA				
24	4	Light2	Blue-Gray, Text 2	60%	Lighter 60%	2	172	185	202	#ACB9CA				
25	5	Accent1	Blue, Accent1	60%	Lighter 60%	2	180	198	231	#B4C6E7				
26	6	Accent2	Orange, Accent2	60%	Lighter 60%	2	248	203	173	#F8CBAD	11589944			
27	7	Accent3	Gray, Accent3	60%	Lighter 60%	2	219	219	219	#DBDBDB	14408667			
28	8	Accent4	Gold, Accent4	60%	Lighter 60%	2	255	230	153	#FFE699	10086143			
29	9	Accent5	Blue, Accent5	60%	Lighter 60%	2	189	215	238	#BDD7EE	15652797			
30	10	Accent6	Green, Accent6	60%	Lighter 60%	2	198	224	180	#C6E0B4	11854022			

Code is copied to sheet for reference

Theme Colors

Color	1	2	3	4	5	6	7	8	9	10
Top	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Shade1	-5%	50%	-10%	80%	80%	80%	80%	80%	80%	80%
Shade2	-15%	35%	-25%	60%	60%	60%	60%	60%	60%	60%
Shade3	-25%	25%	-50%	40%	40%	40%	40%	40%	40%	40%
Shade4	-35%	15%	-75%	-25%	-25%	-25%	-25%	-25%	-25%	-25%
Shade5	-50%	5%	-90%	-50%	-50%	-50%	-50%	-50%	-50%	-50%

Push button to activate this code:

```
Public Sub SetColorTheme()
Dim tbl As ListObject, dbr As Range, n As Integer
Dim tc As Long, ts As Long, fc As Long
On Error Resume Next
Set tbl = ActiveSheet.ListObjects("TableTheme")
tc = tbl.ListColumns("TC").index
ts = tbl.ListColumns("TS").index
fc = tbl.ListColumns("font").index
Set dbr = tbl.DataBodyRange
With [colorthemegrid]
  For n = 1 To .Cells.Count
    With Application.Union(.Item(n), tbl.ListRows(n).Range)
      .Interior.ThemeColor = IIf([settheme], dbr(n, tc), 1)
      .Interior.TintAndShade = IIf([settheme], dbr(n, ts), 0)
      .Font.ThemeColor = IIf([settheme], dbr(n, fc), 2)
      .Font.TintAndShade = 0
    End With
  Next n
End With
End Sub
```

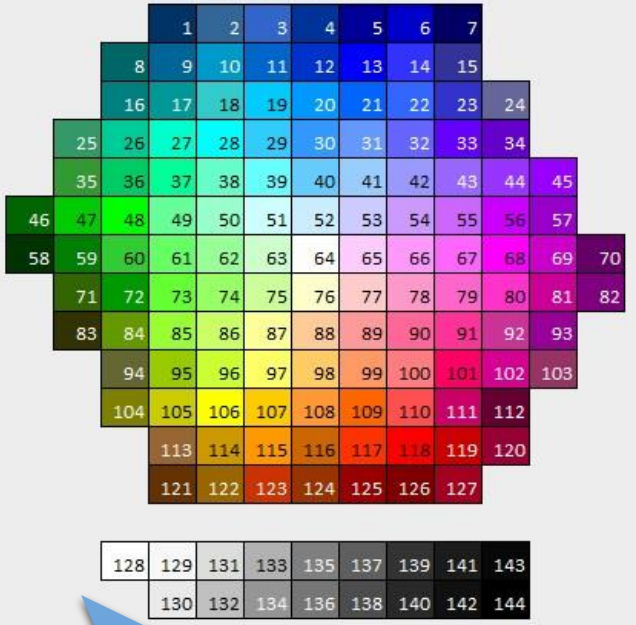
Colors Standard

	A
1	Select:
2	Overview
3	Dialog
4	Theme
5	**Standard**
6	Custom
7	Random
8	Index
9	All
10	
11	Set Standard Colors

Standard Color Wheel (see Alt-H,H,M (or Ctrl+1 → Fill → Alt+M) → Standard)

num	font	R	G	B	hex	decimal	vbCon	std10	theme	index
1	1	0	51	102	#003366	6697728				49
2	1	51	102	153	#336699	10053171				
3	1	51	102	204	#3366CC	13395507				
4	1	0	51	153	#003399	10040064				
5	1	0	0	153	#000099	10027008				
6	1	0	0	204	#0000CC	13369344				
7	1	0	0	102	#000066	6684672				
8	1	0	102	102	#006666	6710784				
9	1	0	102	153	#006699	10053120				
10	1	0	153	204	#0099CC	13408512				
11	1	0	102	204	#0066CC	13395456				23
12	1	0	51	204	#0033CC	13382400				
13	1	0	0	255	#0000FF	16711680	2			5
14	1	51	51	255	#3333FF	16724787				
15	1	51	51	153	#333399	10040115				55
16	1	0	128	128	#008080	8421376				14
17	1	0	153	153	#009999	10066176				
18	0	51	204	204	#33CCCC	13421619				42
19	0	0	204	255	#00CCFF	16763904				33
20	1	0	153	255	#0099FF	16750848				
21	1	0	102	255	#0066FF	16737792				
22	1	51	102	255	#3366FF	16737843				41
23	1	51	51	204	#3333CC	13382451				

Standard Color Wheel

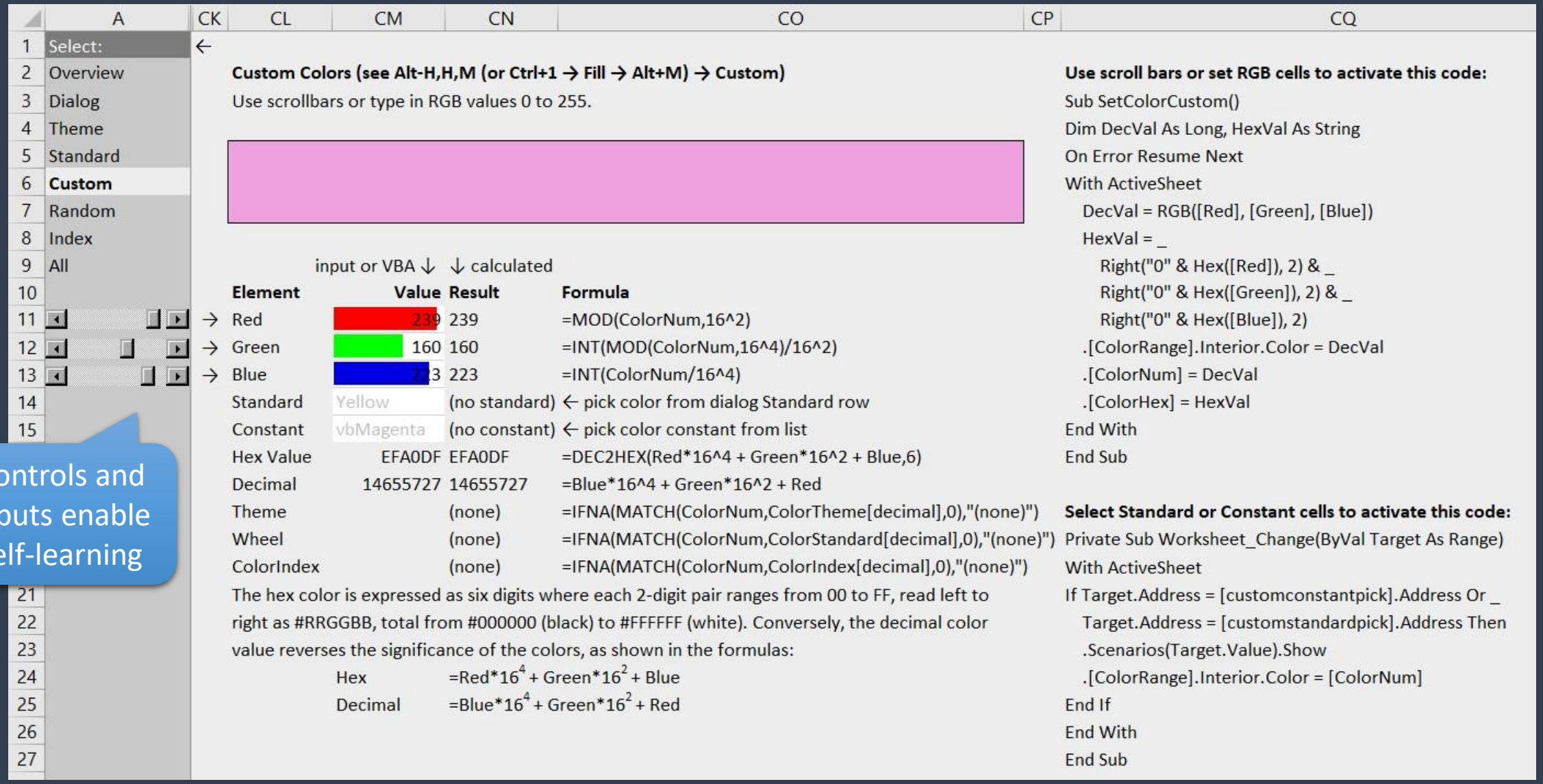


User interface is replicated and tabulated

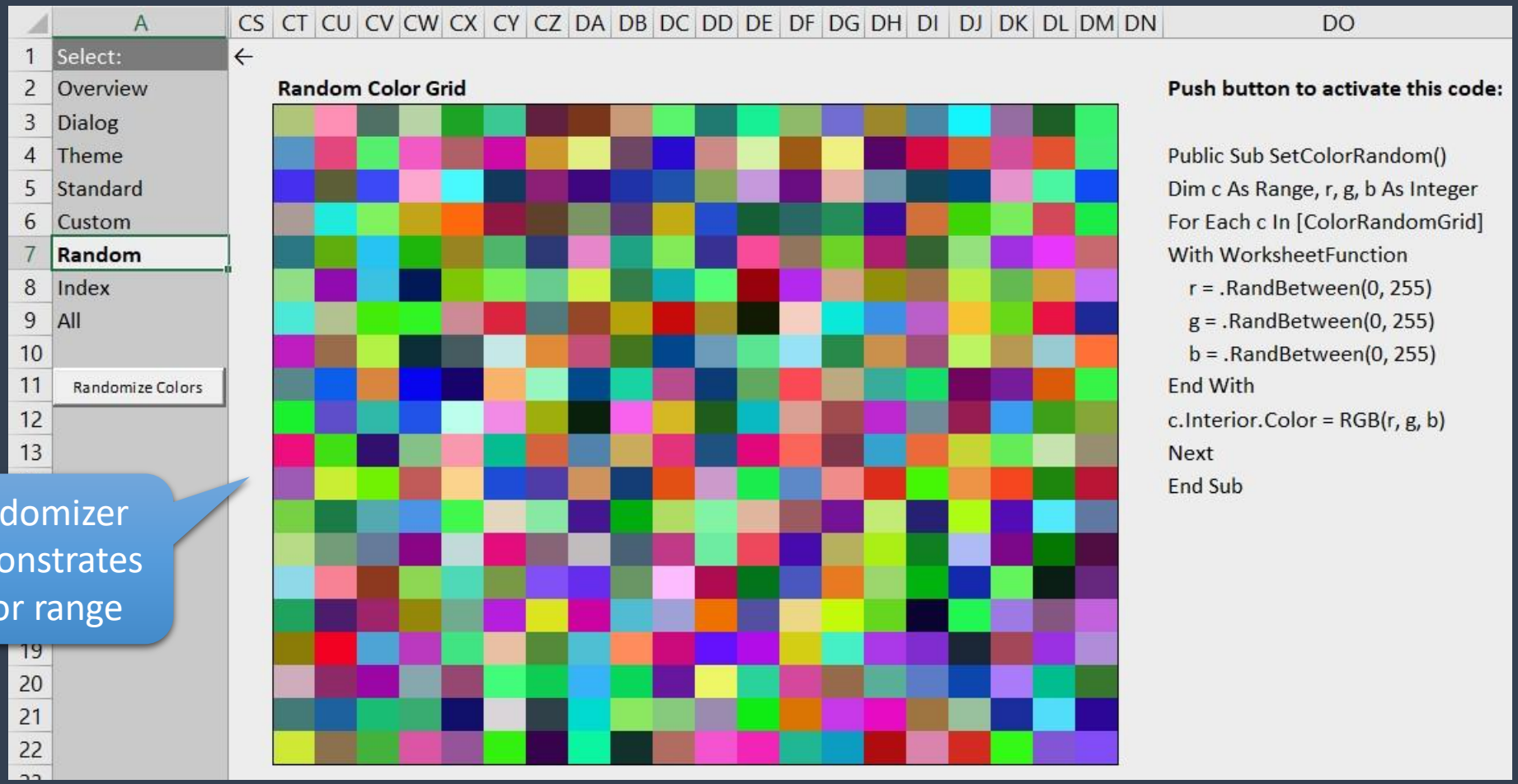
Push button to activate this code:

```
Public Sub SetColorStandard()
Dim c As Range, dbr As Range
Dim tbl As ListObject, clr As Long, n As Integer
Dim ic As Long, fc As Long
On Error Resume Next
Set tbl = ActiveSheet.ListObjects("TableStandard")
Set dbr = tbl.DataBodyRange
ic = tbl.ListColumns("decimal").index
fc = tbl.ListColumns("font").index
For Each c In [colorstandard].Cells
   n = c.Value
   If n > 0 Then
      With Application.Union(c, tbl.ListRows(n).Range)
         .Interior.Color = IIf([setstandard], _
            dbr(n, ic), vbWhite)
         .Font.Color = IIf([setstandard] And _
            dbr(n, fc) = 1, vbWhite, vbBlack)
      End With
   End If
Next
End Sub
```

Colors Custom

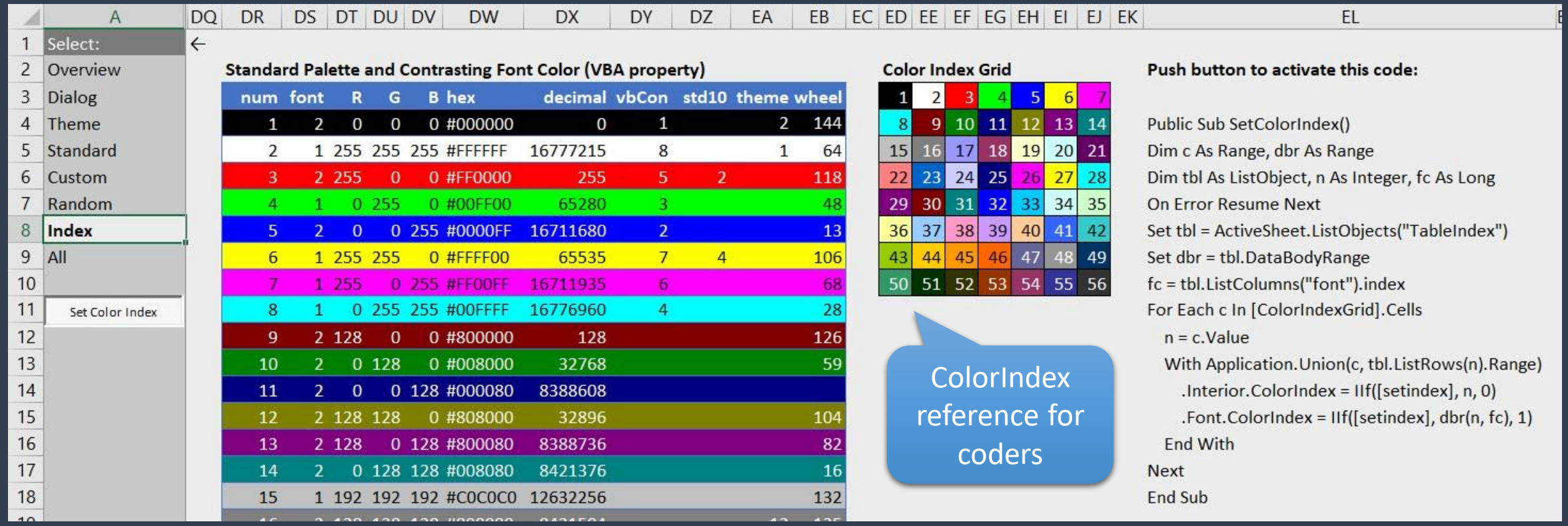


Colors Random



Randomizer demonstrates color range

Colors Index



Select:
Overview
Dialog
Theme
Standard
Custom
Random
Index
All

Set Color Index

Standard Palette and Contrasting Font Color (VBA property)

num	font	R	G	B	hex	decimal	vbCon	std10	theme	wheel
1	2	0	0	0	#000000	0	1		2	144
2	1	255	255	255	#FFFFFF	16777215	8		1	64
3	2	255	0	0	#FF0000	255	5	2		118
4	1	0	255	0	#00FF00	65280	3			48
5	2	0	0	255	#0000FF	16711680	2			13
6	1	255	255	0	#FFFF00	65535	7	4		106
7	1	255	0	255	#FF00FF	16711935	6			68
8	1	0	255	255	#00FFFF	16776960	4			28
9	2	128	0	0	#800000	128				126
10	2	0	128	0	#008000	32768				59
11	2	0	0	128	#000080	8388608				
12	2	128	128	0	#808000	32896				104
13	2	128	0	128	#800080	8388736				82
14	2	0	128	128	#008080	8421376				16
15	1	192	192	192	#C0C0C0	12632256				132

Color Index Grid

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	32	33	34	35
36	37	38	39	40	41	42
43	44	45	46	47	48	49
50	51	52	53	54	55	56

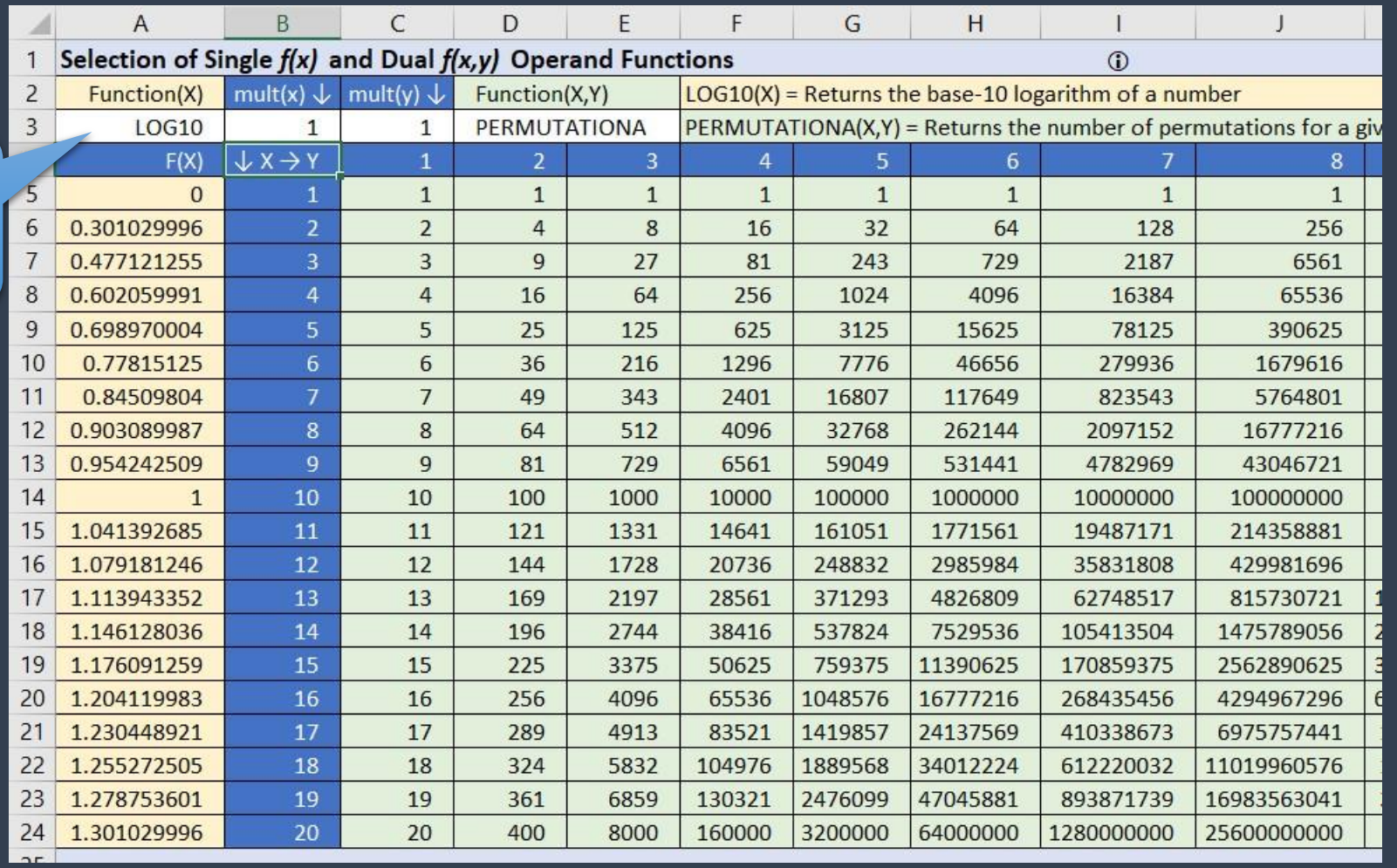
ColorIndex reference for coders

Push button to activate this code:

```
Public Sub SetColorIndex()
Dim c As Range, dbr As Range
Dim tbl As ListObject, n As Integer, fc As Long
On Error Resume Next
Set tbl = ActiveSheet.ListObjects("TableIndex")
Set dbr = tbl.DataBodyRange
fc = tbl.ListColumns("font").index
For Each c In [ColorIndexGrid].Cells
   n = c.Value
   With Application.Union(c, tbl.ListRows(n).Range)
      .Interior.ColorIndex = IIf([setindex], n, 0)
      .Font.ColorIndex = IIf([setindex], dbr(n, fc), 1)
   End With
Next
End Sub
```

Functions

Select *f(x)* and *f(x,y)* and input multipliers



	A	B	C	D	E	F	G	H	I	J
1	**Selection of Single *f(x)* and Dual *f(x,y)* Operand Functions**								ⓘ	
2	Function(X)	mult(x) ↓	mult(y) ↓	Function(X,Y)		LOG10(X) = Returns the base-10 logarithm of a number				
3	LOG10	1	1	PERMUTATIONA		PERMUTATIONA(X,Y) = Returns the number of permutations for a giv				
4	F(X)	↓ X → Y	1	2	3	4	5	6	7	8
5	0	1	1	1	1	1	1	1	1	1
6	0.301029996	2	2	4	8	16	32	64	128	256
7	0.477121255	3	3	9	27	81	243	729	2187	6561
8	0.602059991	4	4	16	64	256	1024	4096	16384	65536
9	0.698970004	5	5	25	125	625	3125	15625	78125	390625
10	0.77815125	6	6	36	216	1296	7776	46656	279936	1679616
11	0.84509804	7	7	49	343	2401	16807	117649	823543	5764801
12	0.903089987	8	8	64	512	4096	32768	262144	2097152	16777216
13	0.954242509	9	9	81	729	6561	59049	531441	4782969	43046721
14	1	10	10	100	1000	10000	100000	1000000	10000000	100000000
15	1.041392685	11	11	121	1331	14641	161051	1771561	19487171	214358881
16	1.079181246	12	12	144	1728	20736	248832	2985984	35831808	429981696
17	1.113943352	13	13	169	2197	28561	371293	4826809	62748517	815730721
18	1.146128036	14	14	196	2744	38416	537824	7529536	105413504	1475789056
19	1.176091259	15	15	225	3375	50625	759375	11390625	170859375	2562890625
20	1.204119983	16	16	256	4096	65536	1048576	16777216	268435456	4294967296
21	1.230448921	17	17	289	4913	83521	1419857	24137569	410338673	6975757441
22	1.255272505	18	18	324	5832	104976	1889568	34012224	612220032	11019960576
23	1.278753601	19	19	361	6859	130321	2476099	47045881	893871739	16983563041
24	1.301029996	20	20	400	8000	160000	3200000	64000000	1280000000	25600000000

Combinations Header

Reference for Permutations and Combinations

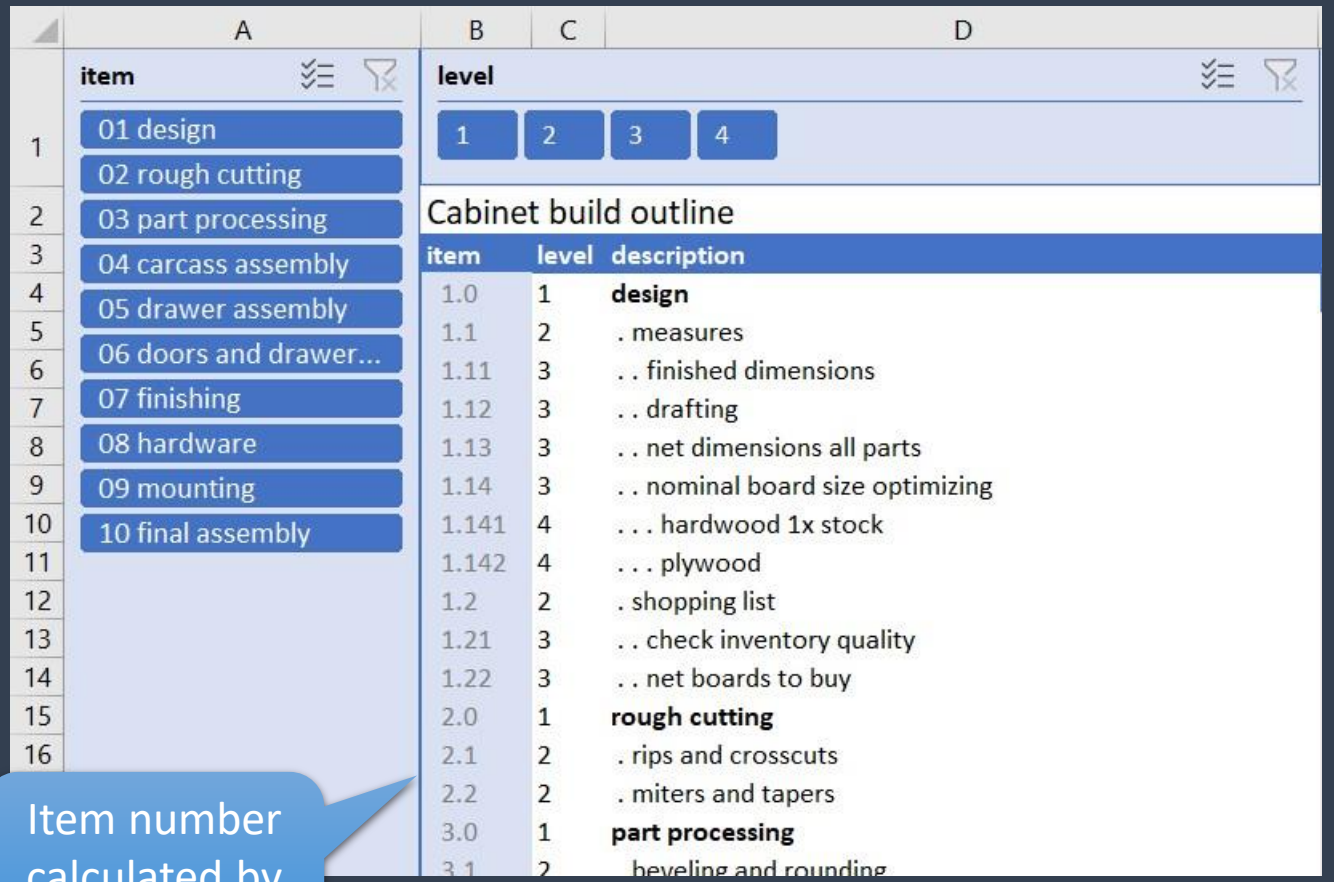
	A	B	C	D	E
1	note	**Permutations**		**Combinations**	
2	order matters	TRUE	TRUE	FALSE	FALSE
3	repeats allowed	TRUE	FALSE	TRUE	FALSE
4	function	PERMUTATIONA	PERMUT	COMBINA	COMBIN
5	process	all possible	remove repeats	remove duplicates	remove both
6	general formula	N^r	$\frac{N!}{(N-r)!}$	$\frac{(N+r-1)!}{r!\,(N-1)!}$	$\frac{N!}{r!\,(N-r)!}$
7	population N	5	select or type population to choose from, 1 to 9		
8	selection r	3	select or type number to choose, 1 to 4		
9	function	125	60	35	10
10	column count	125	60	35	10
11	index	PERMUTATIONA	PERMUT	COMBINA	COMBIN
12	1	111		111	

Combinations Table

10	column count	125	60	35	10	digits					value counts										type	
11	index	PERMUTATIONA	PERMUT	COMBINA	COMBIN	D4	D3	D2	D1	Dall	V9	V8	V7	V6	V5	V4	V3	V2	V1	Vall	repeat	duplic
12	1	111		111			1	1	1	111					0	0	0	0	3	00003	rep	
13	2	112		112			1	1	2	112					0	0	0	1	2	00012	rep	
14	3	113		113			1	1	3	113					0	0	1	0	2	00102	rep	
15	4	114		114			1	1	4	114					0	1	0	0	2	01002	rep	
16	5	115		115			1	1	5	115					1	0	0	0	2	10002	rep	
17	6	121					1	2	1	121					0	0	0	1	2	00012	rep	dup
18	7	122		122			1	2	2	122					0	0	0	2	1	00021	rep	
19	8	123	123	123	123		1	2	3	123					0	0	1	1	1	00111		
20	9	124	124	124	124		1	2	4	124					0	1	0	1	1	01011		
21	10	125	125	125	125		1	2	5	125					1	0	0	1	1	10011		
22	11	131					1	3	1	131					0	0	1	0	2	00102	rep	dup
23	12	132	132				1	3	2	132					0	0	1	1	1	00111		dup
24	13	133		133			1	3	3	133					0	0	2	0	1	00201	rep	
25	14	134	134	134	134		1	3	4	134					0	1	1	0	1	01101		
26	15	135	135	135	135		1	3	5	135					1	0	1	0	1	10101		
27	16	141					1	4	1	141					0	1	0	0	2	01002	rep	dup
28	17	142	142				1	4	2	142					0	1	0	1	1	01011		dup
29	18	143	143				1	4	3	143					0	1	1	0	1	01101		dup
30	19	144		144			1	4	4	144					0	2	0	0	1	02001	rep	
31	20	145	145	145	145		1	4	5	145					1	1	0	0	1	11001		
32	21	151					1	5	1	151					1	0	0	0	2	10002	rep	dup

Member list aids learning

Outline


item
01 design
02 rough cutting
03 part processing
04 carcass assembly
05 drawer assembly
06 doors and drawer...
07 finishing
08 hardware
09 mounting
10 final assembly
level
1
2
3
4
Cabinet build outline
item level description
1.0 1 design
1.1 2 . measures
1.11 3 . . finished dimensions
1.12 3 . . drafting
1.13 3 . . net dimensions all parts
1.14 3 . . nominal board size optimizing
1.141 4 . . . hardwood 1x stock
1.142 4 . . . plywood
1.2 2 . shopping list
1.21 3 . . check inventory quality
1.22 3 . . net boards to buy
2.0 1 rough cutting
2.1 2 . rips and crosscuts
2.2 2 . miters and tapers
3.0 1 part processing
Item number calculated by level

Chapter 5: Keyboard Trainer

Keyboard Trainer

ABOUT KEYBOARD TRAINER

Becoming a keyboard expert requires first knowing what shortcuts can do, which usually means searching and reading long lists with many key combinations. Then, most people can only memorize a few at a time; many will never know what they're missing, leaving keyboard productivity as an underused opportunity.

Keyboard Trainer is an on-screen keyboard simulation flanked by Slicer banks of functions and keys. As Slicer buttons are clicked, the keyboard lights up to assist memorization. Slicers are by function group, function and key and include 193 shortcuts.

A second sheet is focused on Ribbon KeyTips. This sheet simulates the Ribbon tabs and groups with horizontal Slicers, and the KeyTip "spelling" with vertical, single-character Slicers.

Excel features: Advanced Formatting; Conditional Formatting; Name Manager named ranges and formulas; Column Groups; Tables; PivotTables; Slicers **VBA**: none

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Keyboard Trainer

USAGE NOTES

The keyboard simulator is most effective with maximum screen space. Headings are hidden (Alt-W,V,H).
Additional space can be gained by:

Ctrl+F1 to hide the ribbon
Shift+Ctrl+F1 to hide the ribbon, toolbar and status bar

Slicer navigation by keyboard:

1. Ctrl+Alt+5 to select the first Slicer. The Slicer bank will have an extra border indicating it is selected.
2. Tab twice to place the focus on the buttons.
3. Arrow around, Space or Enter to select a button.

When using multiple Slicers together such as Area→ Function or Area→ Key or Function→ Way, reset the lower Slicer by clicking the "Clear Filter" button before selecting another item in the higher Slicer. If the Slicer is selected (has extra border), "Clear Filter" can be done by Alt+C.

To view the pivot or table:

1. Click the Show Help checkbox
2. Select the heading P or T
3. Follow the tips to unprotect the sheet and open the group

Keyboard Slicers

Keyboard Highlighting

Keyboard Help

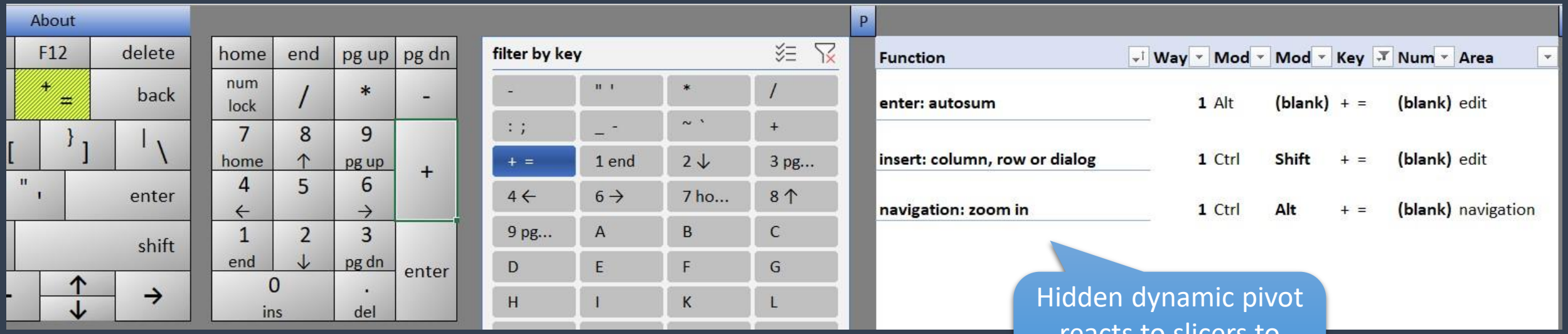
Keyboard Table

Hidden static table lists every shortcut

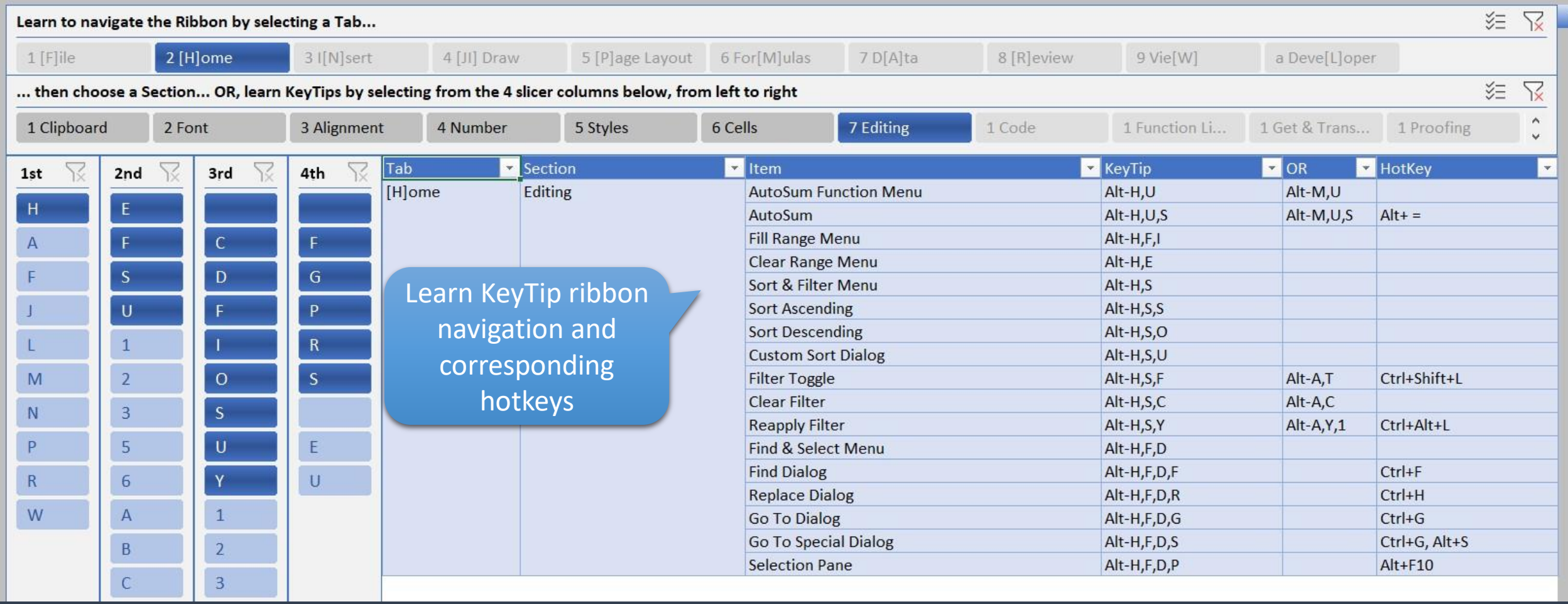
T

Mod1	Mod2	Key	Function	Area	Way	Numlock
Ctrl	Shift	_ -	borders: clear	format	1	
Ctrl	Alt	_ -	navigation: zoom out	navigation	1	
Ctrl	Shift	& 7	borders: outline	format	1	
		F 9	calculate: all	sheet/file	1	
Shift		F 9	calculate: sheet	sheet/file	1	
Ctrl		C	clipboard: copy	edit	1	
Ctrl		X	clipboard: cut	edit	1	
Ctrl		V	clipboard: paste	edit	1	
Ctrl	Alt	V	clipboard: paste special dialog	edit	1	

Keyboard Pivot

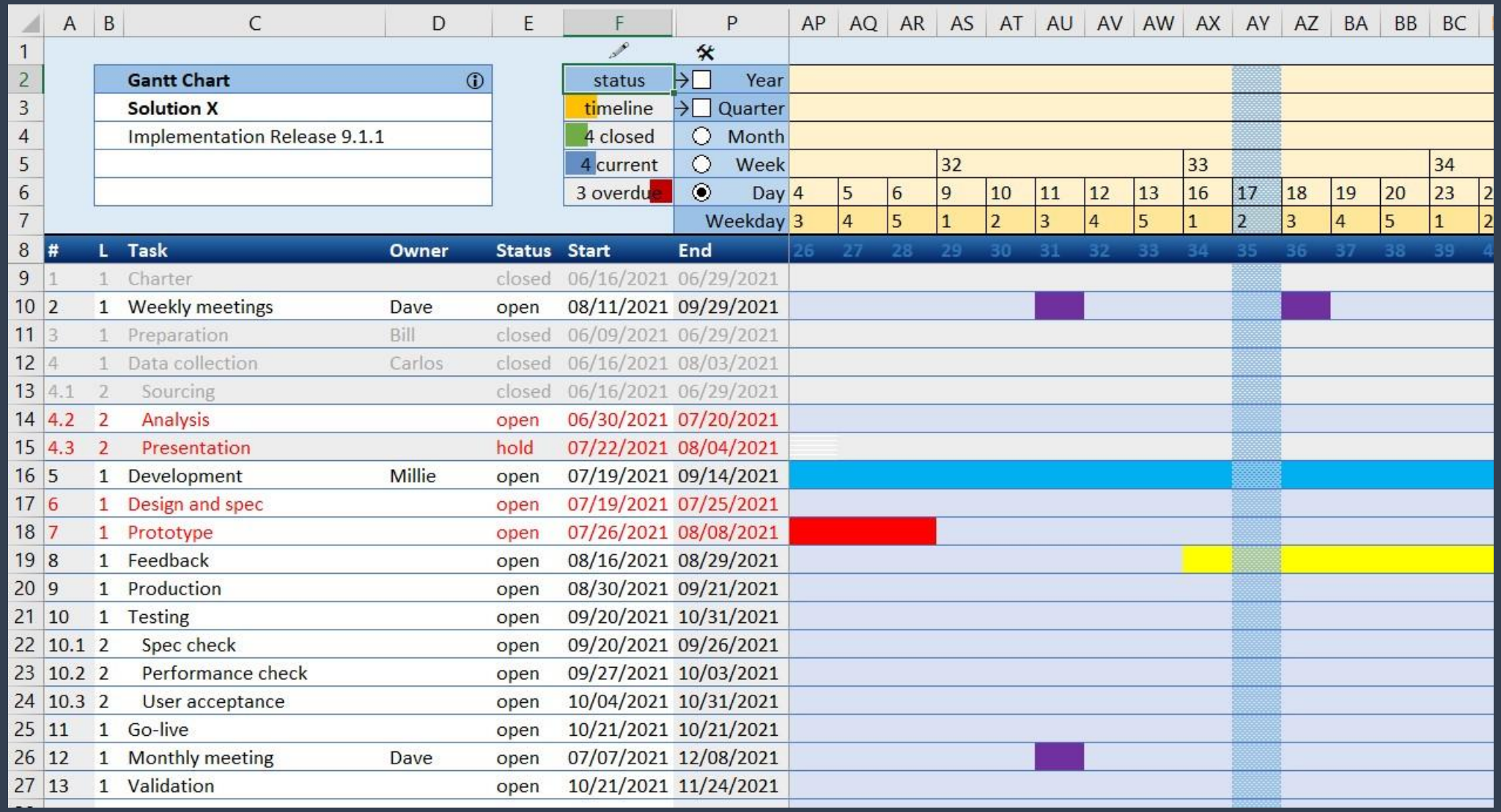


KeyTips



Tab	Section	Item	KeyTip	OR	HotKey
[H]ome	Editing	AutoSum Function Menu	Alt-H,U	Alt-M,U	
		AutoSum	Alt-H,U,S	Alt-M,U,S	Alt+ =
		Fill Range Menu	Alt-H,F,I		
		Clear Range Menu	Alt-H,E		
		Sort & Filter Menu	Alt-H,S		
		Sort Ascending	Alt-H,S,S		
		Sort Descending	Alt-H,S,O		
		Custom Sort Dialog	Alt-H,S,U		
		Filter Toggle	Alt-H,S,F	Alt-A,T	Ctrl+Shift+L
		Clear Filter	Alt-H,S,C	Alt-A,C	
		Reapply Filter	Alt-H,S,Y	Alt-A,Y,1	Ctrl+Alt+L
		Find & Select Menu	Alt-H,F,D		
		Find Dialog	Alt-H,F,D,F		Ctrl+F
		Replace Dialog	Alt-H,F,D,R		Ctrl+H
		Go To Dialog	Alt-H,F,D,G		Ctrl+G
		Go To Special Dialog	Alt-H,F,D,S		Ctrl+G, Alt+S
		Selection Pane	Alt-H,F,D,P		Alt+F10

Chapter 6: Gantt Chart



	A	B	C	D	E	F	P
1							
2			**Gantt Chart** ⓘ			status	Year
3			**Solution X**			timeline	Quarter
4			Implementation Release 9.1.1			4 closed	Month
5						4 current	Week
6						3 overdue	Day
7							Weekday
8	**#**	**L**	**Task**	**Owner**	**Status**	**Start**	**End**
9	1	1	Charter		closed	06/16/2021	06/29/2021
10	2	1	Weekly meetings	Dave	open	08/11/2021	09/29/2021
11	3	1	Preparation	Bill	closed	06/09/2021	06/29/2021
12	4	1	Data collection	Carlos	closed	06/16/2021	08/03/2021
13	4.1	2	Sourcing		closed	06/16/2021	06/29/2021
14	4.2	2	Analysis		open	06/30/2021	07/20/2021
15	4.3	2	Presentation		hold	07/22/2021	08/04/2021
16	5	1	Development	Millie	open	07/19/2021	09/14/2021
17	6	1	Design and spec		open	07/19/2021	07/25/2021
18	7	1	Prototype		open	07/26/2021	08/08/2021
19	8	1	Feedback		open	08/16/2021	08/29/2021
20	9	1	Production		open	08/30/2021	09/21/2021
21	10	1	Testing		open	09/20/2021	10/31/2021
22	10.1	2	Spec check		open	09/20/2021	09/26/2021
23	10.2	2	Performance check		open	09/27/2021	10/03/2021
24	10.3	2	User acceptance		open	10/04/2021	10/31/2021
25	11	1	Go-live		open	10/21/2021	10/21/2021
26	12	1	Monthly meeting	Dave	open	07/07/2021	12/08/2021
27	13	1	Validation		open	10/21/2021	11/24/2021

AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC
			32					33					34
4	5	6	9	10	11	12	13	16	17	18	19	20	23
3	4	5	1	2	3	4	5	1	2	3	4	5	1
26	27	28	29	30	31	32	33	34	35	36	37	38	39

Gantt Chart

ABOUT GANTT CHART

A Gantt chart is a common project management tool for linking and scheduling interdependent activities. Informal Gantts often lack key features.

Capacity is a critical constraint on the project schedule. When a project spans peak holiday or vacation periods, the manager might mentally adjust due dates, or even overlook the constraint. Here the manager can reflect the constraint with custom weekends, holidays and special down days, or define a part-time project with custom workdays.

The horizontal time scale has four options for different audiences; calendar days, workdays, weeks and months. Constraint periods are shaded. Activities appear as colored bars. There are no activity realtionships, but there can be up to seven sequential stages or discrete events on a single row.

Excel features: Advanced Boolean, Date and Lookup formulas; Name Manager named ranges and formulas; Data Validation rules and messages; Conditional Formatting; Tables linked for input, process and output; Controls; **VBA**: none

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Gantt Chart

USAGE NOTES

Configure:

Plan sheet, Stages legend (8 colored cells): up to 4 characters acronym to identify stages
Plan sheet, Capacity thresholds (6 colored cells): enter days to shade as reduced capacity
Calendar sheet: configure work week, holidays, other dates, set count boxes to count as downtime

Setup: Fill white cells in header, and white columns:

Fill columns per guidance message in column heading
Event type is continuous (duration=stage length) or discrete (separated by stage length)
Duration type is workdays or calendar days
Stages S2-S7 are optional: use as sequential stages, discrete instances, or to change task color

Monitor and maintain:

Show all days: while Day bucket is displayed, shows all calendar days with down days shaded
Use all days: shows schedule with no downtime (earliest completion scenario)
Date bucket: select Month, Week or Day to expand or collapse horizon
Status (explicit): set hold to pause or closed on task completion
Status (implicit): current tasks start in past and end in future; overdue tasks end in past
Select pencil icon (cell F1) to expand or collapse column group for space

Gantt Chart

TEMPLATE NOTES

Gantt Chart is most useful as a template. This allows you to save a blank version of the file which remains intact as you use it to create new files. Thus, you don't need to retrieve your last file and remove all the data to start a new one, just open the template and it will save as a workbook.

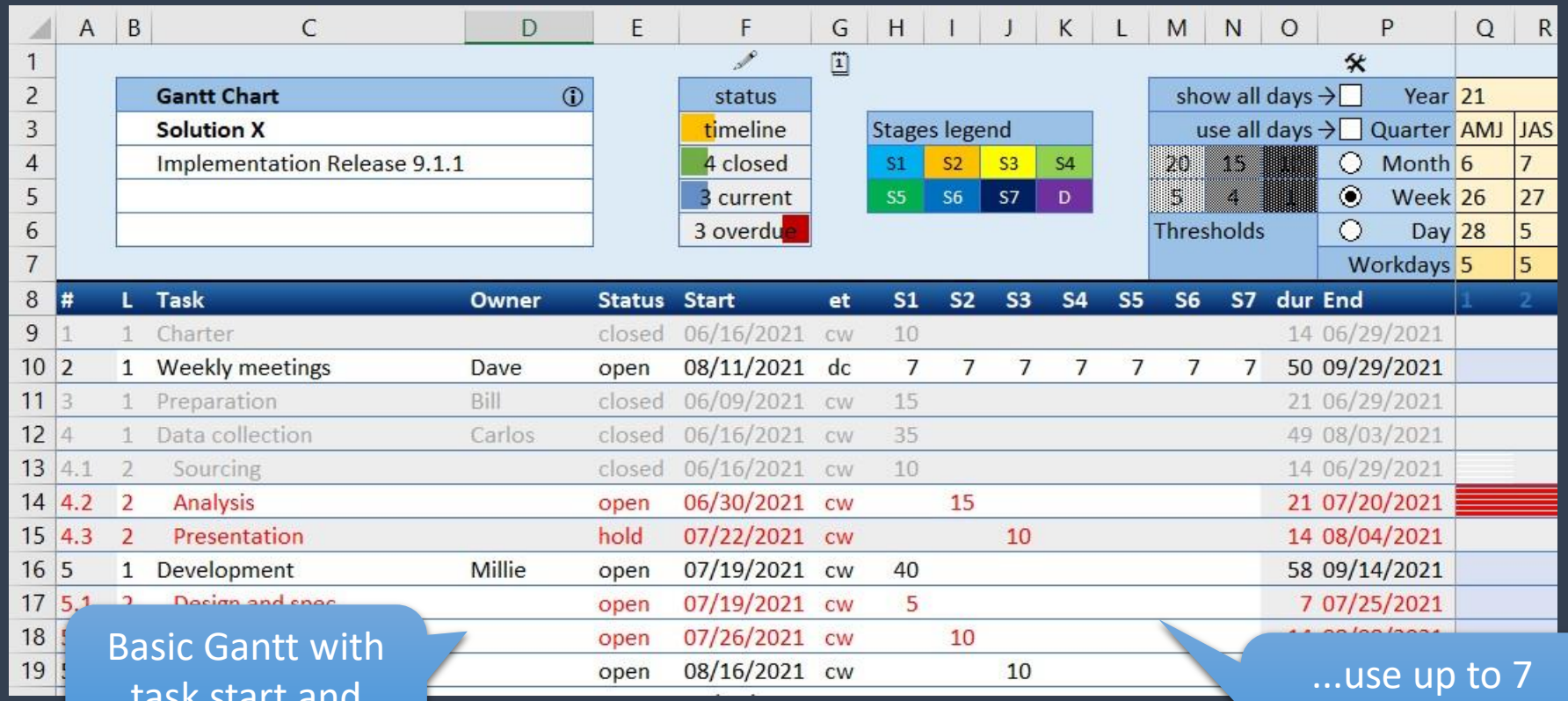
Gantt Chart is provided as both Excel Template (Gantt Chart.xltx) and Excel Workbook (Gantt Chart.xlsx). This is so that you can see a filled example to learn how it works, and have the template for your own use. To use the template, first make it accessible.

Option 1: save the template file in your template folder, which you can find in Options, Alt-F,T,S, something like C:\Users\ (username) \OneDrive\Documents\Office\Templates.

Option 2: open the template, you'll see "Gantt Chart1" as the filename. Hit F12 (Save-As), remove the "1" in the name, and in "Save as type:", select Excel Template. This selects your template folder automatically.
To use the template, File-New and navigate to personal templates, Alt-F,N,Y,3, it should be there. You can pin it to the top to make it easier to find next time.

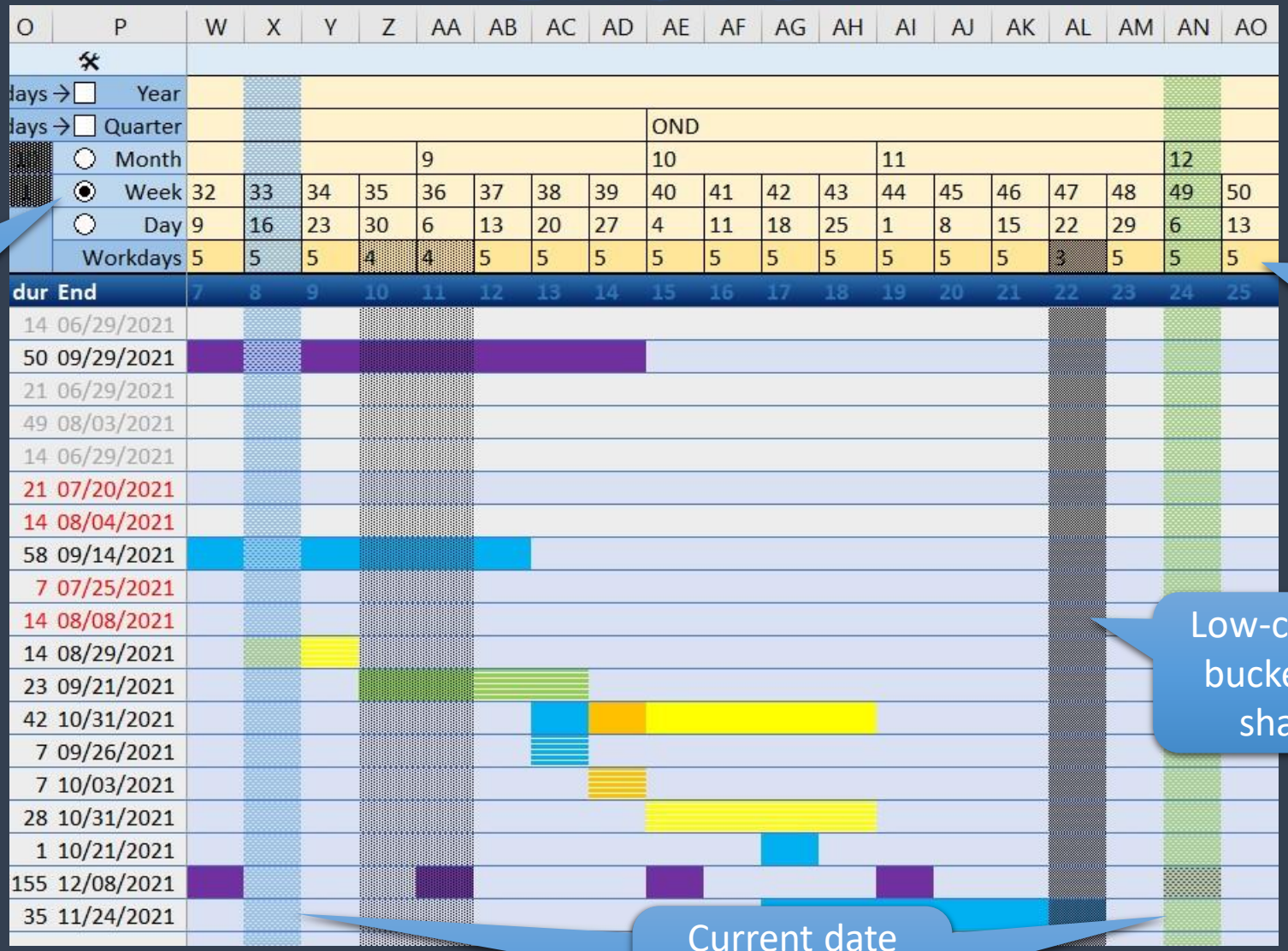
To change the template, follow Option 2 above; open, edit, then Save-As and overwrite the current one. For example, you might want to save it with some data that is standard or similar across projects.

Dashboard



| | | |

Chart



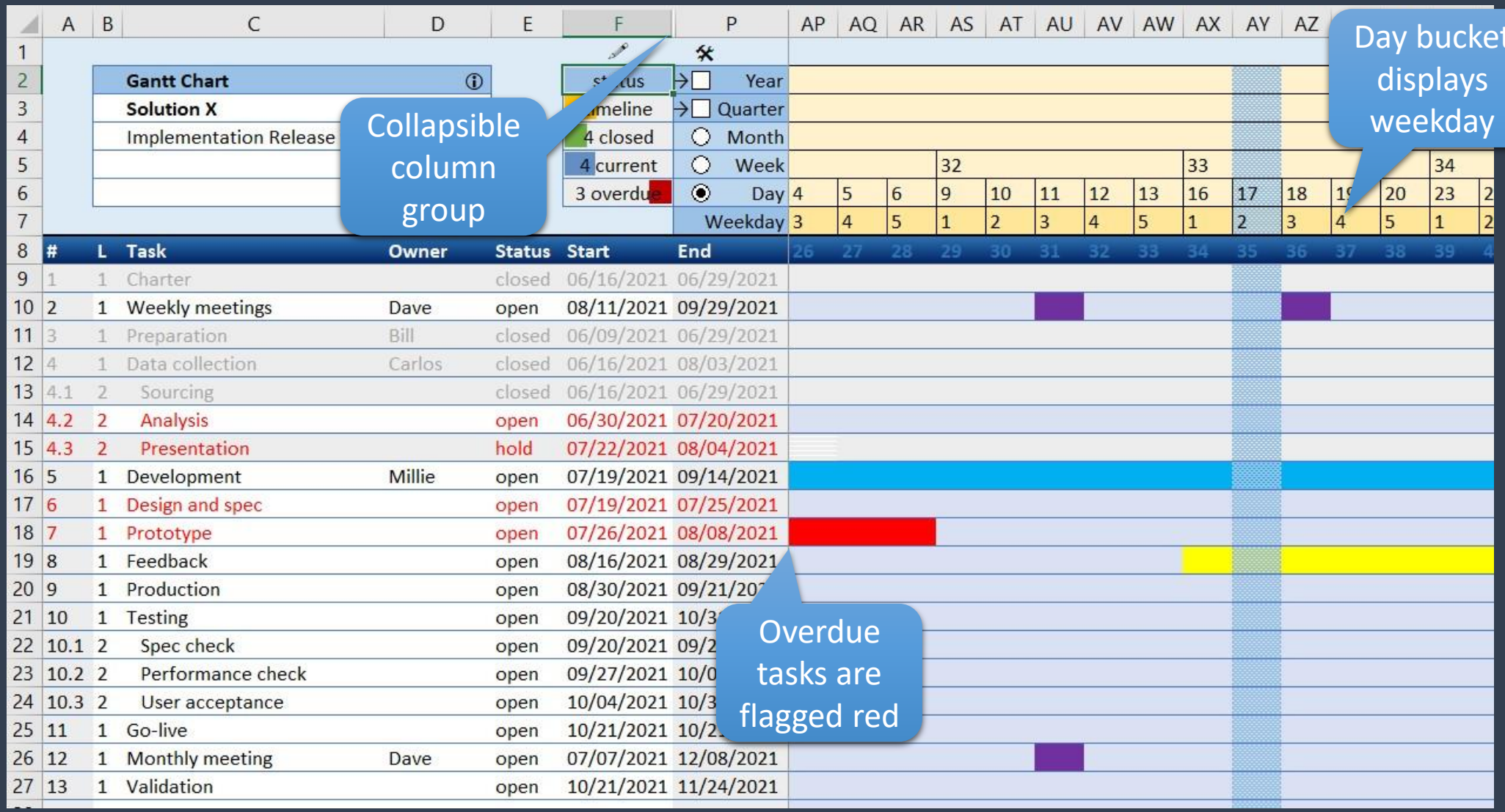
Flexible horizon in months, weeks or days

Week and month buckets show workdays per bucket

Low-capacity buckets are shaded

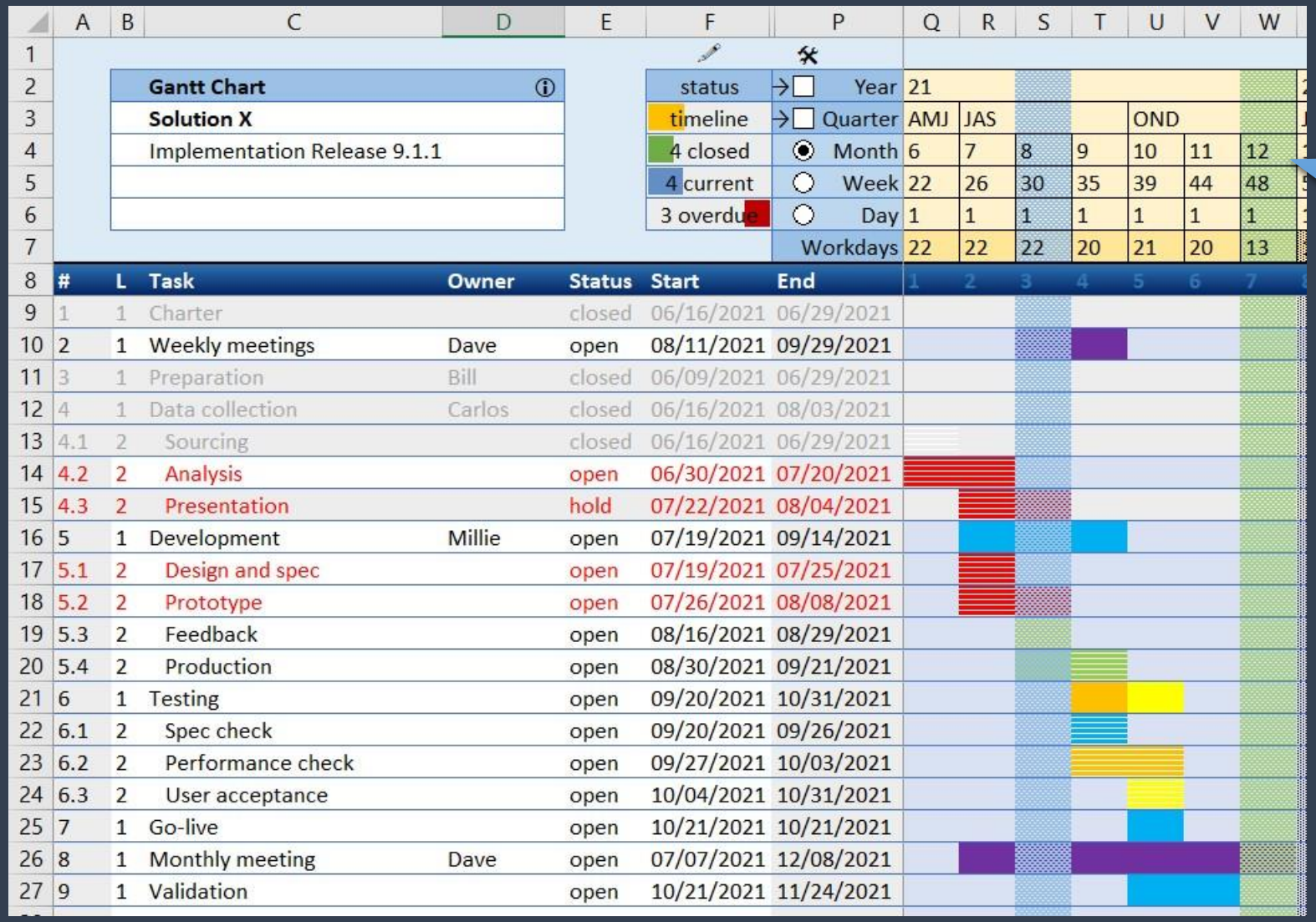
Current date and project end are shaded

Days



#	L	Task	Owner	Status	Start	End
1	1	Charter		closed	06/16/2021	06/29/2021
2	1	Weekly meetings	Dave	open	08/11/2021	09/29/2021
3	1	Preparation	Bill	closed	06/09/2021	06/29/2021
4	1	Data collection	Carlos	closed	06/16/2021	08/03/2021
4.1	2	Sourcing		closed	06/16/2021	06/29/2021
4.2	2	Analysis		open	06/30/2021	07/20/2021
4.3	2	Presentation		hold	07/22/2021	08/04/2021
5	1	Development	Millie	open	07/19/2021	09/14/2021
6	1	Design and spec		open	07/19/2021	07/25/2021
7	1	Prototype		open	07/26/2021	08/08/2021
8	1	Feedback		open	08/16/2021	08/29/2021
9	1	Production		open	08/30/2021	09/21/20
10	1	Testing		open	09/20/2021	10/3
10.1	2	Spec check		open	09/20/2021	09/2
10.2	2	Performance check		open	09/27/2021	10/0
10.3	2	User acceptance		open	10/04/2021	10/3
11	1	Go-live		open	10/21/2021	10/2
12	1	Monthly meeting	Dave	open	07/07/2021	12/08/2021
13	1	Validation		open	10/21/2021	11/24/2021

Months



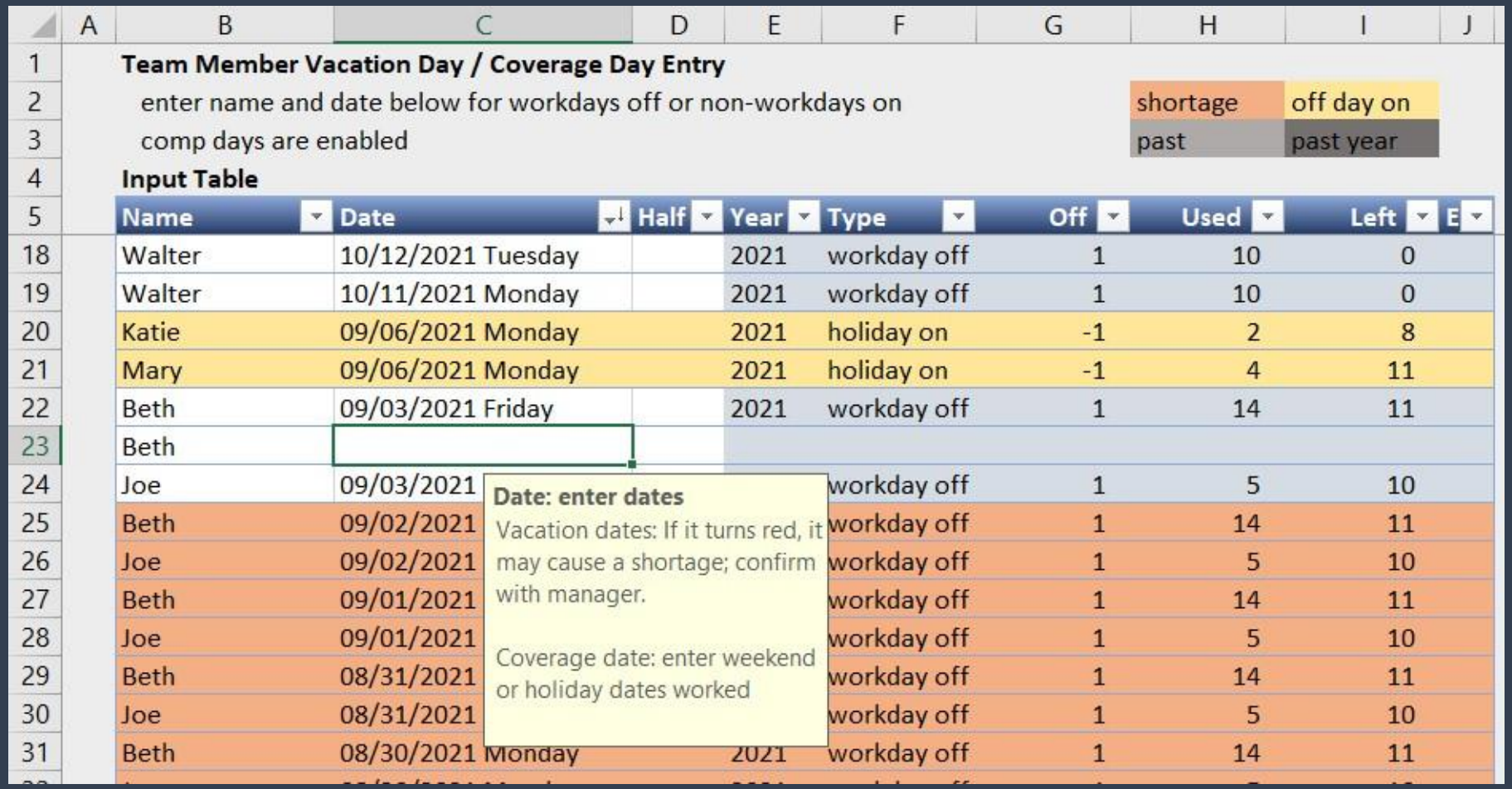
Gantt Chart
Solution X
Implementation Release 9.1.1

status		
timeline		
4 closed		
4 current		
3 overdue		

Year	21	
Quarter	AMJ	JAS
Month	6	7
Week	22	26
Day	1	1
Workdays	22	22

| | | |

Chapter 7: Team Calendar



Team Member Vacation Day / Coverage Day Entry

enter name and date below for workdays off or non-workdays on comp days are enabled

shortage	off day on
past	past year

Input Table

Name	Date	Half	Year	Type	Off	Used	Left	E
Walter	10/12/2021 Tuesday		2021	workday off	1	10	0	
Walter	10/11/2021 Monday		2021	workday off	1	10	0	
Katie	09/06/2021 Monday		2021	holiday on	-1	2	8	
Mary	09/06/2021 Monday		2021	holiday on	-1	4	11	
Beth	09/03/2021 Friday		2021	workday off	1	14	11	
Beth								
Joe	09/03/2021			workday off	1	5	10	
Beth	09/02/2021			workday off	1	14	11	
Joe	09/02/2021			workday off	1	5	10	
Beth	09/01/2021			workday off	1	14	11	
Joe	09/01/2021			workday off	1	5	10	
Beth	08/31/2021			workday off	1	14	11	
Joe	08/31/2021			workday off	1	5	10	
Beth	08/30/2021 Monday		2021	workday off	1	14	11	

Date: enter dates

Vacation dates: If it turns red, it may cause a shortage; confirm with manager.

Coverage date: enter weekend or holiday dates worked

Team Calendar

ABOUT TEAM CALENDAR

In a business environment, team members and managers need to record and track days off, special staffing requirements, and risks such as understaffing and end-of-year vacations.

Team Calendar takes members' entry of name and date, normally a day off but may also be used to record a day worked on a weekend or holiday. A policy setting can then return a comp day, or not. A day off that will result in a shortage is flagged, to be confirmed with the manager. Each entry updates the individual's days used and remaining for the current year.

The manager maintains the policy and the team roster with hire date, which determines days due. They can then maintain special peak dates, shutdowns, or weekend and holiday coverage needed. A calendar is included that highlights all date entries, and even birthdays and milestone anniversaries.

Excel features: Advanced Boolean, Date and Lookup formulas; Name Manager named ranges and formulas; Data Validation rules and messages; Conditional Formatting; Tables linked for input, process and output; PivotTables and PivotCharts; Column Groups; Camera tool; **VBA**: none

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Team Calendar

USAGE NOTES

Input: name and date; name must exist in Team table on Settings sheet. Input response:
- shortage is highlighted red when a workday off is entered which will cause a staff shortage
- coverage day is highlighted yellow when a non-workday is entered
- vacation days used and left are updated including comp days if enabled
- calendar: set or clear checkboxes to customize display (calendar is linked image of Report calendar)

Report: review Report table, input Special table
- Start: select Today (default), or Jan 1 of this year or Jan 1 of next year
- Report Flag column: review short and over flags
- Report Used column: review aggregate vacation risk based on Alert start and level in Settings
- Special table: enter date and ± staff required or 0 for shutdown
- Calendar: set or clear checkboxes to customize display

Analysis: review vacation usage by team member and overall. Pivots refresh upon opening.

Settings: select icons in row 1 to expand/collapse column groups
- Date settings: format, work week and holiday rules and/or manual holiday dates
- Team settings: controls, vacation policy (include milestone years), team member list

Maintenance:
- Input table: keep dates in past until new year starts and all carry-overs have been recorded
- Special table: dates in past can be deleted
- Team table: enter new hire placeholder for vacation planning purposes, maintain dates

Team Calendar

TEMPLATE NOTES

Team Calendar can be used as a template to set up multiple teams, or once for a single team. There is no need to create a new file for each year. Once a team is set up, the file can be maintained as an ongoing Calendar from year to year. Past years can be deleted or kept, the input and analysis is always for the current year.

To use the template as a single file, follow Option 2 below, except Save-As Excel Workbook instead of Excel Template. To use the template as a template, first make it accessible.

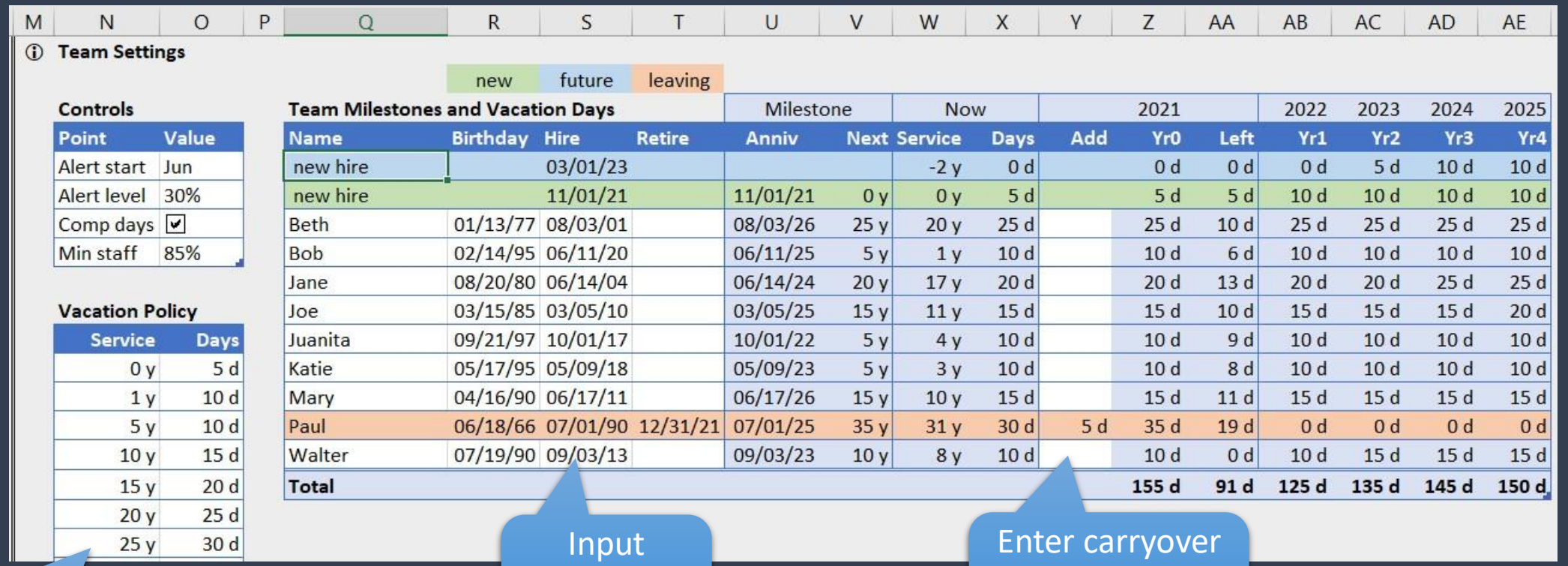
Option 1: save the template file in your template folder, which you can find in Options, Alt-F,T,S, something like C:\Users\ (username) \OneDrive\Documents\Office\Templates.

Option 2: open the template, you'll see "Team Calendar1" as the filename. Hit F12 (Save-As), remove the "1" in the name, and in "Save as type:", select Excel Template. This selects your template folder automatically.

To apply the template, File-New and navigate to personal templates, Alt-F,N,Y,3, it should be there. You can pin it to the top to make it easier to find next time.

To change the template, follow Option 2 above; open, edit, then Save-As and overwrite the current one. For example, you might want to save it with some data that is standard or similar across teams.

Team Settings



Team Settings

new future leaving

Controls

Point	Value
Alert start	Jun
Alert level	30%
Comp days	☑
Min staff	85%

Vacation Policy

Service	Days
0 y	5 d
1 y	10 d
5 y	10 d
10 y	15 d
15 y	20 d
20 y	25 d
25 y	30 d

Team Milestones and Vacation Days

				Milestone		Now			2021		2022	2023	2024	2025
Name	Birthday	Hire	Retire	Anniv	Next	Service	Days	Add	Yr0	Left	Yr1	Yr2	Yr3	Yr4
new hire		03/01/23				-2 y	0 d		0 d	0 d	0 d	5 d	10 d	10 d
new hire		11/01/21		11/01/21	0 y	0 y	5 d		5 d	5 d	10 d	10 d	10 d	10 d
Beth	01/13/77	08/03/01		08/03/26	25 y	20 y	25 d		25 d	10 d	25 d	25 d	25 d	25 d
Bob	02/14/95	06/11/20		06/11/25	5 y	1 y	10 d		10 d	6 d	10 d	10 d	10 d	10 d
Jane	08/20/80	06/14/04		06/14/24	20 y	17 y	20 d		20 d	13 d	20 d	20 d	25 d	25 d
Joe	03/15/85	03/05/10		03/05/25	15 y	11 y	15 d		15 d	10 d	15 d	15 d	15 d	20 d
Juanita	09/21/97	10/01/17		10/01/22	5 y	4 y	10 d		10 d	9 d	10 d	10 d	10 d	10 d
Katie	05/17/95	05/09/18		05/09/23	5 y	3 y	10 d		10 d	8 d	10 d	10 d	10 d	10 d
Mary	04/16/90	06/17/11		06/17/26	15 y	10 y	15 d		15 d	11 d	15 d	15 d	15 d	15 d
Paul	06/18/66	07/01/90	12/31/21	07/01/25	35 y	31 y	30 d	5 d	35 d	19 d	0 d	0 d	0 d	0 d
Walter	07/19/90	09/03/13		09/03/23	10 y	8 y	10 d		10 d	0 d	10 d	15 d	15 d	15 d
Total									**155 d**	**91 d**	**125 d**	**135 d**	**145 d**	**150 d**

Vacation policy determines days granted and milestone years

Input names and key dates

Enter carryover or other adjustments

Date Settings

Set up date format, work week and holidays

Date Settings

Pick	Date bucket order	mdy	Work week	Mon-Fri
each	Date separator	/	Custom week	0011010

Holiday Rules

Rule	Holiday	Month	Form	Par1	Par2
1	New Year's Day	1	1	1	3
2	ML King Jr Day	1	2	3	1
3	Presidents Day	2	2	3	1
4	Memorial Day	5	2	5	1
5	Independence Day	7	1	4	1
6	Labor Day	9	2	1	1
7	Thanksgiving	11	2	4	4
8	Thanksgiving Friday	11	2	4	4.1
9	Christmas Eve	12	1	24	2
10	Christmas	12	1	25	3
11	New Year's Eve	12	1	31	2

Week Lookup

Work	Type	String
Mon-Fri	11	0000011
Tue-Sat	12	1000001
Wed-Sun	13	1100000
Thu-Mon	14	0110000
Fri-Tue	15	0011000
Sat-Wed	16	0001100
Sun-Thu	17	0000110
custom	11	0011010

To enter holidays manually, scroll down below the calculated table.

Calculated Holidays

Rule	Name	Date	Day	Year	Err
1	New Year's Day	01/01/21	Fri	2021	
2	ML King Jr Day	01/18/21	Mon		
3	Presidents Day	02/15/21	Mon		

Input Name

Team Member Vacation Day / Coverage Day Entry

enter name and date below for workdays off or non-workdays on comp days are enabled

shortage	off day on
past	past year

Input Table

Name	Date	Half	Year	Type	Off	Used	Left
Walter	10/12/2021 Tuesday		2021	workday off	1	10	0
Walter	10/11/2021 Monday		2021	workday off	1	10	0
Katie	09/06/2021 Monday		2021	holiday on	-1	2	8
Mary	09/06/2021 Monday		2021	holiday on	-1	4	11
Beth	09/03/2021 Friday		2021	workday off	1	14	11
Joe	/03/2021 Friday		2021	workday off	1	5	10
Beth	sday		2021	workday off	1	14	11
Joe	sday		2021	workday off	1	5	10
Beth	lnesday		2021	workday off	1	14	11
Joe	lnesday		2021	workday off	1	5	10
	sday		2021	workday off	1	14	11
Joe	08/31/2021 Tuesday		2021	workday off	1	5	10
Beth	08/30/2021 Monday		2021	workday off	1	14	11
Joe	08/30/2021 Monday		2021	workday off	1	5	10
Beth	08/27/2021 Friday		2021	workday off	1	14	11
Beth	08/26/2021 Thursday		2021	workday off	1	14	11

Name: enter or select
To insert a row, select a cell from second row down and hit Ctrl+

Member input table gives in-cell instructions

Short-staff days highlighted red

Input Date

Team Member Vacation Day / Coverage Day Entry

enter name and date below for workdays off or non-workdays on comp days are enabled

shortage	off day on
past	past year

Input Table

Name	Date	Half	Year	Type	Off	Used	Left	E
Walter	10/12/2021 Tuesday		2021	workday off	1	10	0	
Walter	10/11/2021 Monday		2021	workday off	1	10	0	
Katie	09/06/2021 Monday		2021	holiday on	-1	2	8	
Mary	09/06/2021 Monday		2021	holiday on	-1	4	11	
Beth	09/03/2021 Friday		2021	workday off	1	14	11	
Beth								
Joe	09/03/2021			workday off	1	5	10	
Beth	09/02/2021			workday off	1	14	11	
				workday off	1	5	10	
				workday off	1	14	11	
				workday off	1	5	10	
				workday off	1	14	11	
				workday off	1	5	10	
Beth	08/30/2021 Monday		2021	workday off	1	14	11	

Date: enter dates
Vacation dates: If it turns red, it may cause a shortage; confirm with manager.

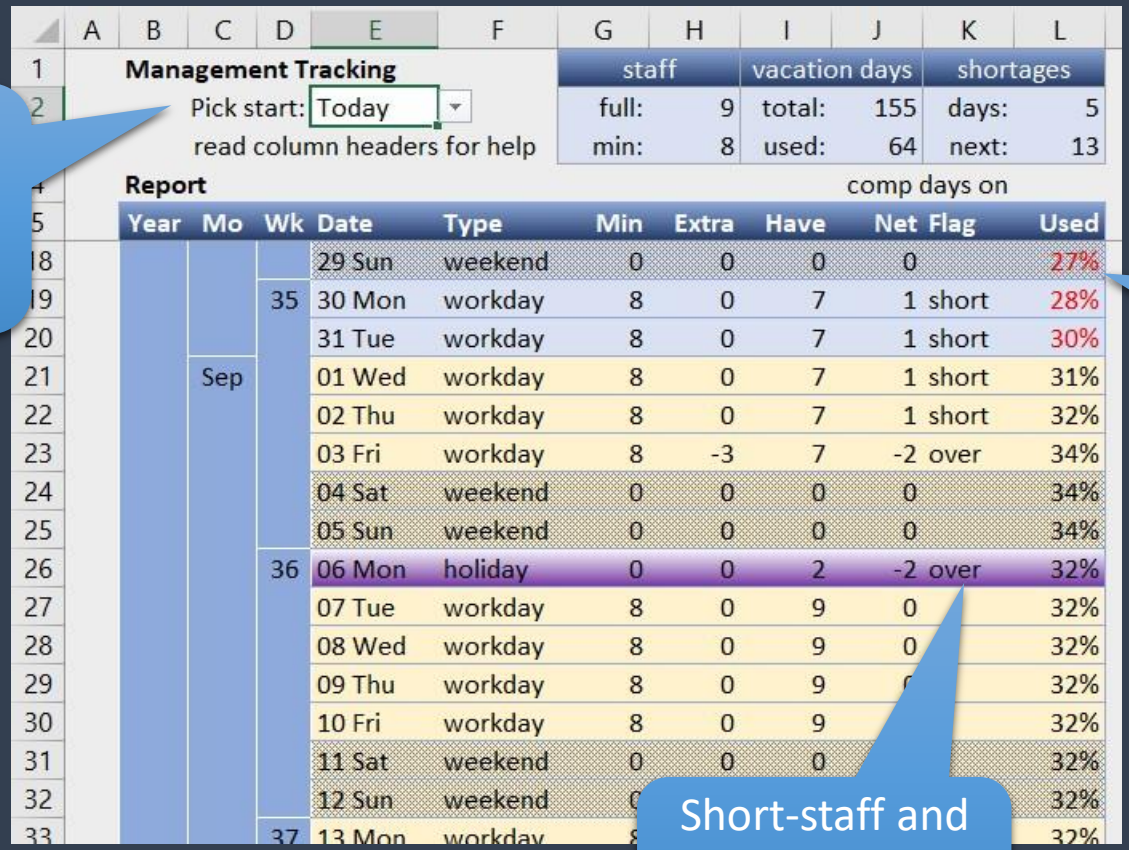
Coverage date: enter weekend or holiday dates worked

Dates can be vacation (off) or coverage (on)

Non-workdays highlighted yellow

Report

Report can start Jan 1 this year or next, or today



Management Tracking

Pick start: Today

read column headers for help

staff		vacation days		shortages	
full:	9	total:	155	days:	5
min:	8	used:	64	next:	13

Report

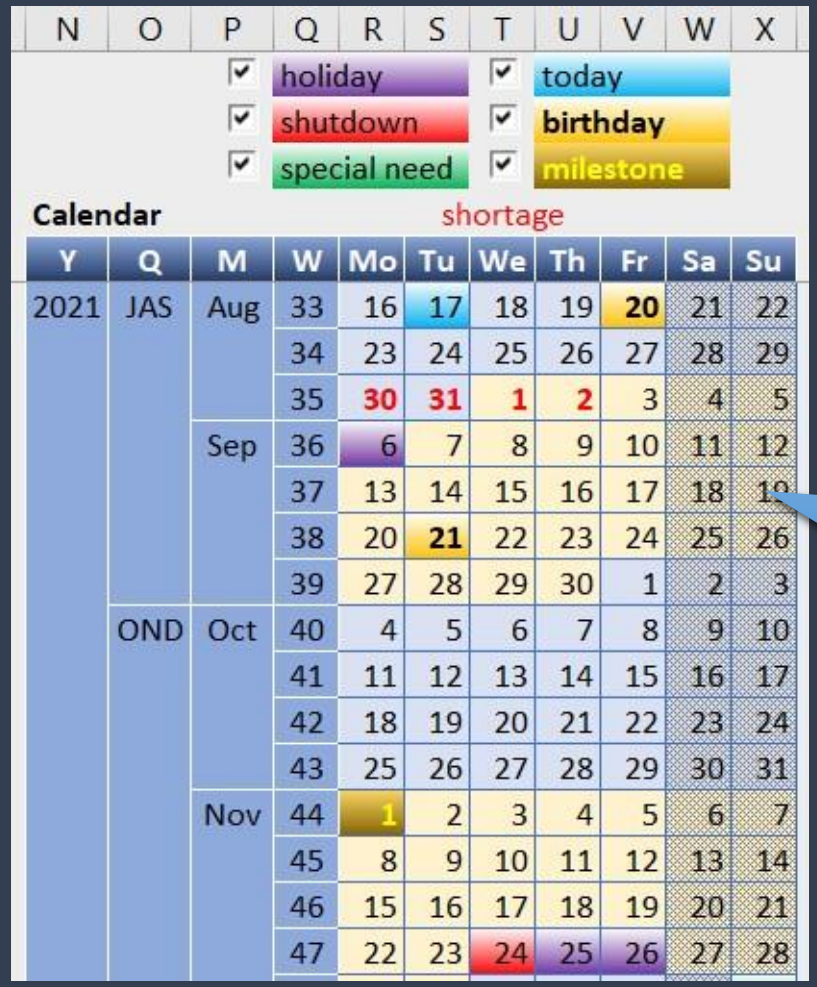
comp days on

Year	Mo	Wk	Date	Type	Min	Extra	Have	Net	Flag	Used
			29 Sun	weekend	0	0	0	0		27%
		35	30 Mon	workday	8	0	7	1	short	28%
			31 Tue	workday	8	0	7	1	short	30%
	Sep		01 Wed	workday	8	0	7	1	short	31%
			02 Thu	workday	8	0	7	1	short	32%
			03 Fri	workday	8	-3	7	-2	over	34%
			04 Sat	weekend	0	0	0	0		34%
			05 Sun	weekend	0	0	0	0		34%
		36	06 Mon	holiday	0	0	2	-2	over	32%
			07 Tue	workday	8	0	9	0		32%
			08 Wed	workday	8	0	9	0		32%
			09 Thu	workday	8	0	9			32%
			10 Fri	workday	8	0	9			32%
			11 Sat	weekend	0	0	0			32%
			12 Sun	weekend						32%
		37	13 Mon	workday						32%

Low vacation usage is flagged

Short-staff and over-staff days are flagged

Calendar



Y	Q	M	W	Mo	Tu	We	Th	Fr	Sa	Su
2021	JAS	Aug	33	16	17	18	19	20	21	22
			34	23	24	25	26	27	28	29
			35	30	31	1	2	3	4	5
		Sep	36	6	7	8	9	10	11	12
			37	13	14	15	16	17	18	19
			38	20	21	22	23	24	25	26
			39	27	28	29	30	1	2	3
	OND	Oct	40	4	5	6	7	8	9	10
			41	11	12	13	14	15	16	17
			42	18	19	20	21	22	23	24
			43	25	26	27	28	29	30	31
		Nov	44	1	2	3	4	5	6	7
			45	8	9	10	11	12	13	14
			46	15	16	17	18	19	20	21
			47	22	23	24	25	26	27	28

Calendar can highlight six date types plus shortage

Special Dates

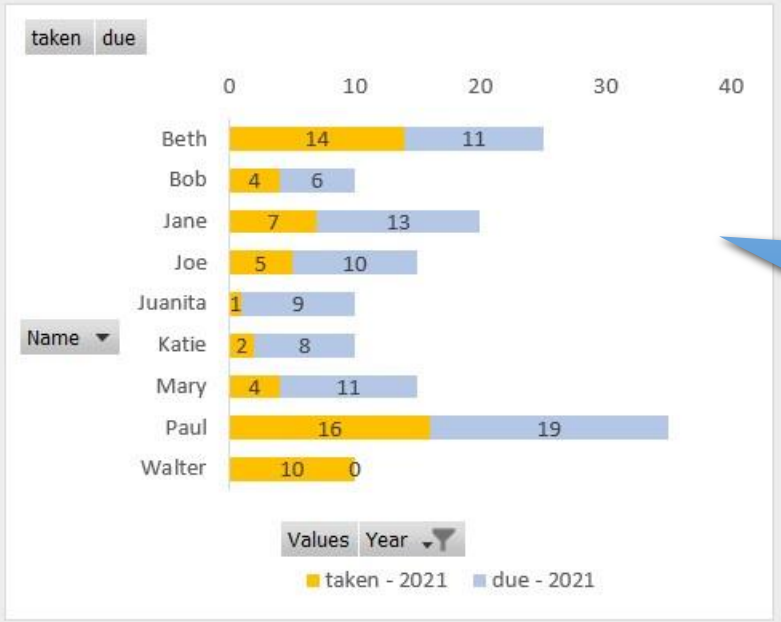
Special Dates ± staffing needs; shaded=past or no net

Date	Need	Comment	Type	Net
08/13/2021 Fri	+2		± help	
09/03/2021 Fri	-3	pre-holiday	± help	-2
11/24/2021 Wed	0	pre-holiday	shutdown	-8
12/05/2021 Sun	+2		weekend	2
12/28/2021 Tue	-5	reduce staff	± help	-6
12/29/2021 Wed	-5		± help	-6
12/30/2021 Thu	-5		± help	-6

Special dates can be entered

Analysis by Member

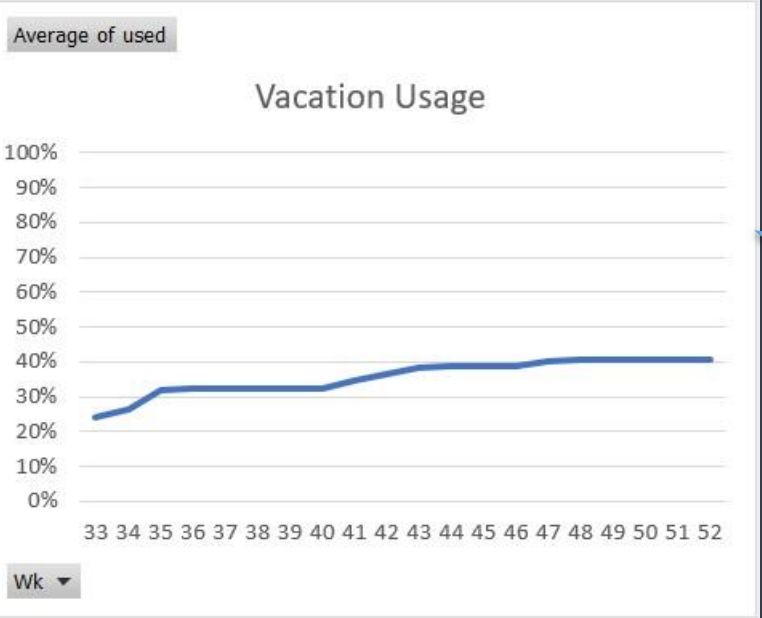
Name	Values taken 2021	Year due 2021
Beth	14	11
Bob	4	6
Jane	7	13
Joe	5	10
Juanita	1	9
Katie	2	8
Mary	4	11
Paul	16	19
Walter	10	0
Grand Total	**16**	**19**



Pivot and chart highlight members' days taken and remaining

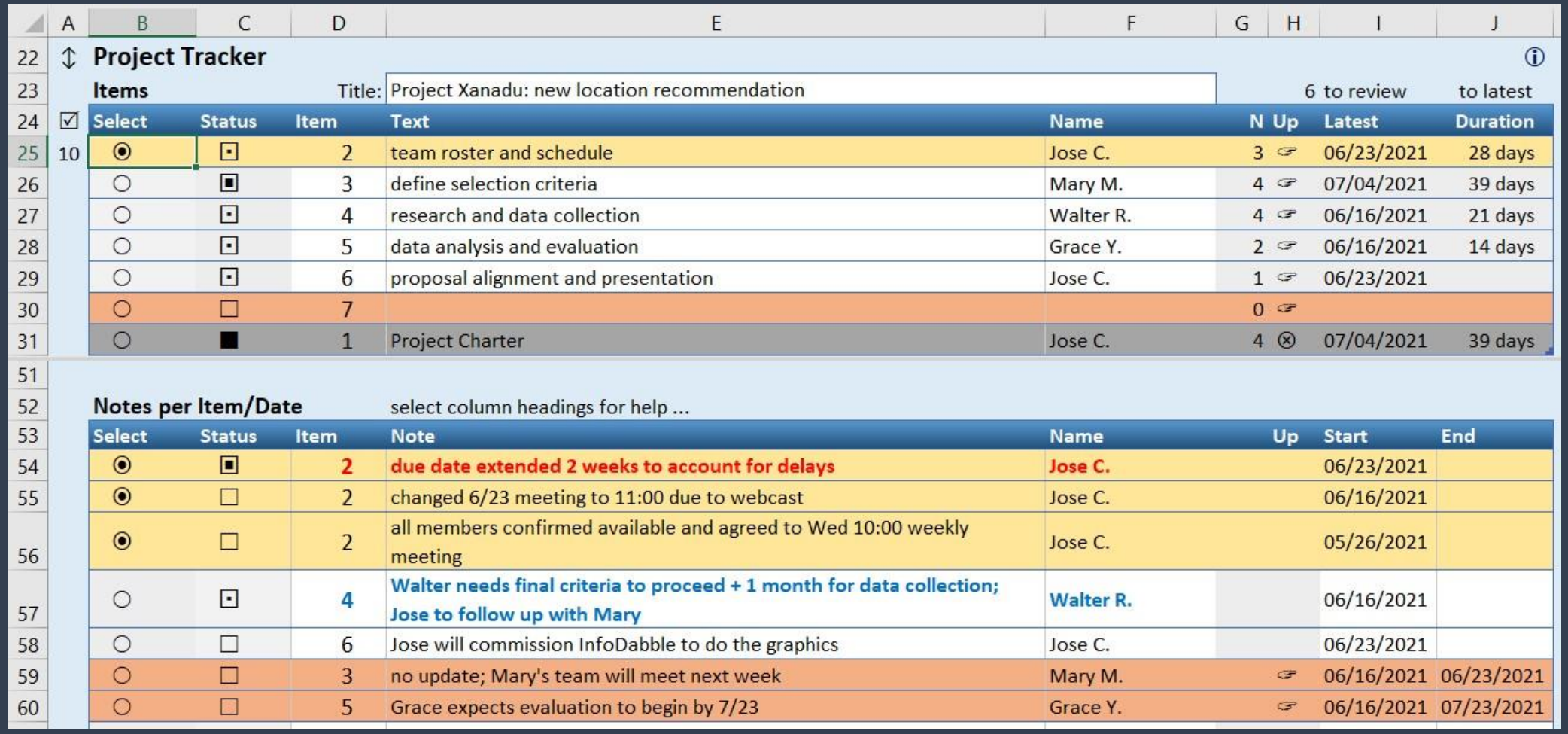
Analysis by Team

Averag	Year
Wk	2021
33	24%
34	26%
35	32%
36	32%
37	32%
38	32%
39	32%
40	32%
41	35%
42	36%
43	38%
44	39%
45	39%
46	39%



Overall team usage

Chapter 8: Project Tracker



Project Tracker

Items Title: Project Xanadu: new location recommendation — 6 to review — to latest

Select	Status	Item	Text	Name	N	Up	Latest	Duration
◉	⊡	2	team roster and schedule	Jose C.	3	☞	06/23/2021	28 days
○	▣	3	define selection criteria	Mary M.	4	☞	07/04/2021	39 days
○	⊡	4	research and data collection	Walter R.	4	☞	06/16/2021	21 days
○	⊡	5	data analysis and evaluation	Grace Y.	2	☞	06/16/2021	14 days
○	⊡	6	proposal alignment and presentation	Jose C.	1	☞	06/23/2021	
○	☐	7			0	☞		
○	■	1	Project Charter	Jose C.	4	⊗	07/04/2021	39 days

Notes per Item/Date select column headings for help ...

Select	Status	Item	Note	Name	Up	Start	End
◉	▣	2	due date extended 2 weeks to account for delays	Jose C.		06/23/2021	
◉	☐	2	changed 6/23 meeting to 11:00 due to webcast	Jose C.		06/16/2021	
◉	☐	2	all members confirmed available and agreed to Wed 10:00 weekly meeting	Jose C.		05/26/2021	
○	⊡	4	Walter needs final criteria to proceed + 1 month for data collection; Jose to follow up with Mary	Walter R.		06/16/2021	
○	☐	6	Jose will commission InfoDabble to do the graphics	Jose C.		06/23/2021	
○	☐	3	no update; Mary's team will meet next week	Mary M.	☞	06/16/2021	06/23/2021
○	☐	5	Grace expects evaluation to begin by 7/23	Grace Y.	☞	06/16/2021	07/23/2021

Project Tracker

ABOUT PROJECT TRACKER

Managers of long projects with regular status meetings often use Excel to take notes, only to find that it becomes more and more unmanageable with each meeting. With many weekly updates on each of many items, it's a three-dimensional problem stuck in a two-dimensional sheet. Actions, owners and dates get lost in the text as updates accumulate in a single cell per item.

Project Tracker keeps Items and Notes in two similar Tables that are linked and stacked vertically in a split screen. Double-click events are used to select the related records, insert new records, and set status indicators. Right-click events set urgency and sort the tables. "Faux control" symbols and Conditional Formatting reflect status conditions including overdue, escalation, and closure, and show what remains to be updated.

Calendar is included for reference, as a manual lookup for setting due dates considering holidays and other downtime.

Excel features: stacked and linked Tables; Split Window; "Faux Control" Symbols; Conditional Formatting; Row Group; Data Validation rules and messages; **VBA**: Worksheet event triggers; automated Window Split, Table Sort, Table Add rows, Conditional Formatting and more; contextual logic to perform different actions based on Target cell address.

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Project Tracker

USAGE NOTES

Settings: Enter project title; double-click vertical double arrow to open the header row group to enter more project information, to view color and symbol legends, and to set date format and duration basis.

Items

Insert: double-click in Text column to insert new Item with next number; enter Text and Name
Select: double-click in Select column to select Item and related Notes
Delete: Ctrl- to delete table row; orphan Notes are flagged

Notes

Insert: double-click Items[Item] to create new Note with Name and today's date
Status: right-click Status to cycle Lo-Hi-None level; double-click Status to close or reopen Note
Delete: Ctrl- to delete table row

Monitor and maintain:

Insert new Note as above; this selects all Notes attached to the Item
While Item is selected, review and update Status and End of existing Notes
Set Status as above to escalate or close a Note
Right-click a column header to sort the table

Project Tracker

TEMPLATE NOTES

Project Tracker is most useful as a template. This allows you to save a blank version of the file which remains intact as you use it to create new files. Thus, you don't need to retrieve your last file and remove all the data to start a new one, just open the template and it will save as a workbook.

Project Tracker is provided as both Excel Macro-Enabled Template (Project Tracker.xltm) and Excel Macro-Enabled Workbook (Project Tracker.xlsm). This is so that you can see a filled example to learn how it works, and have the template for your own use. To use the template, first make it accessible.

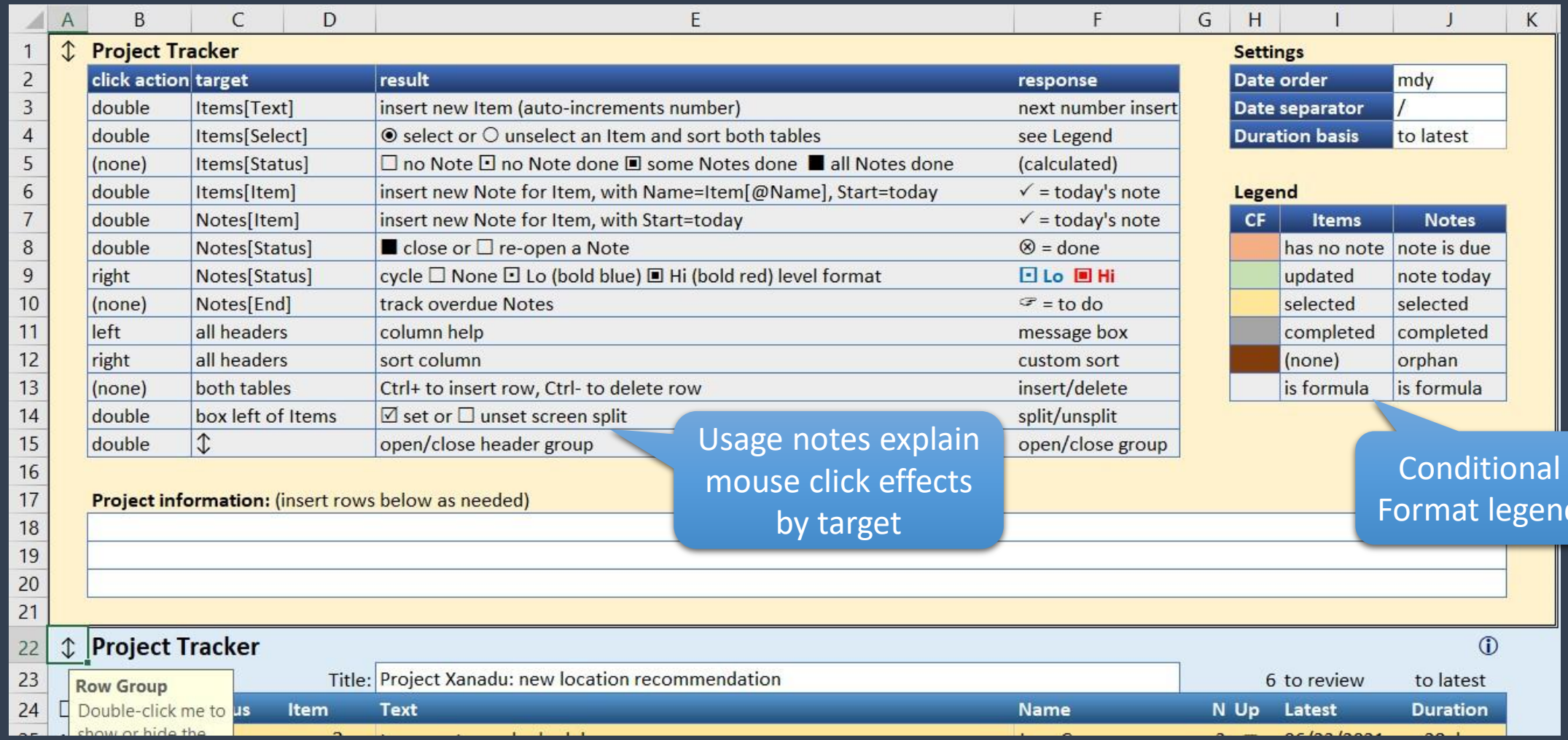
Option 1: save the template file in your template folder, which you can find in Options, Alt-F,T,S, something like C:\Users\ (username) \OneDrive\Documents\Office\Templates.

Option 2: open the template, you'll see "Project Tracker1" as the filename. Hit F12 (Save-As), remove the "1" in the name, and in "Save as type:", select Excel Macro-Enabled Template. This selects your template folder automatically.

To use the template, File-New and navigate to personal templates, Alt-F,N,Y,3, it should be there. You can pin it to the top to make it easier to find next time.

To change the template, follow Option 2 above; open, edit, then Save-As and overwrite the current one. For example, you might want to save it with some data that is standard or similar across projects.

Usage and Legend



Project Tracker

click action	target	result	response
double	Items[Text]	insert new Item (auto-increments number)	next number insert
double	Items[Select]	◉ select or ○ unselect an Item and sort both tables	see Legend
(none)	Items[Status]	☐ no Note ⊡ no Note done ▣ some Notes done ■ all Notes done	(calculated)
double	Items[Item]	insert new Note for Item, with Name=Item[@Name], Start=today	✓ = today's note
double	Notes[Item]	insert new Note for Item, with Start=today	✓ = today's note
double	Notes[Status]	■ close or ☐ re-open a Note	⊗ = done
right	Notes[Status]	cycle ☐ None ⊡ Lo (bold blue) ▣ Hi (bold red) level format	⊡ Lo ▣ Hi
(none)	Notes[End]	track overdue Notes	☞ = to do
left	all headers	column help	message box
right	all headers	sort column	custom sort
(none)	both tables	Ctrl+ to insert row, Ctrl- to delete row	insert/delete
double	box left of Items	☑ set or ☐ unset screen split	split/unsplit
double	↕	open/close header group	open/close group

Settings

Date order	mdy
Date separator	/
Duration basis	to latest

Legend

CF	Items	Notes
	has no note	note is due
	updated	note today
	selected	selected
	completed	completed
	(none)	orphan
	is formula	is formula

Project information: (insert rows below as needed)

Usage notes explain mouse click effects by target

Conditional Format legend

Project Tracker

Title: Project Xanadu: new location recommendation

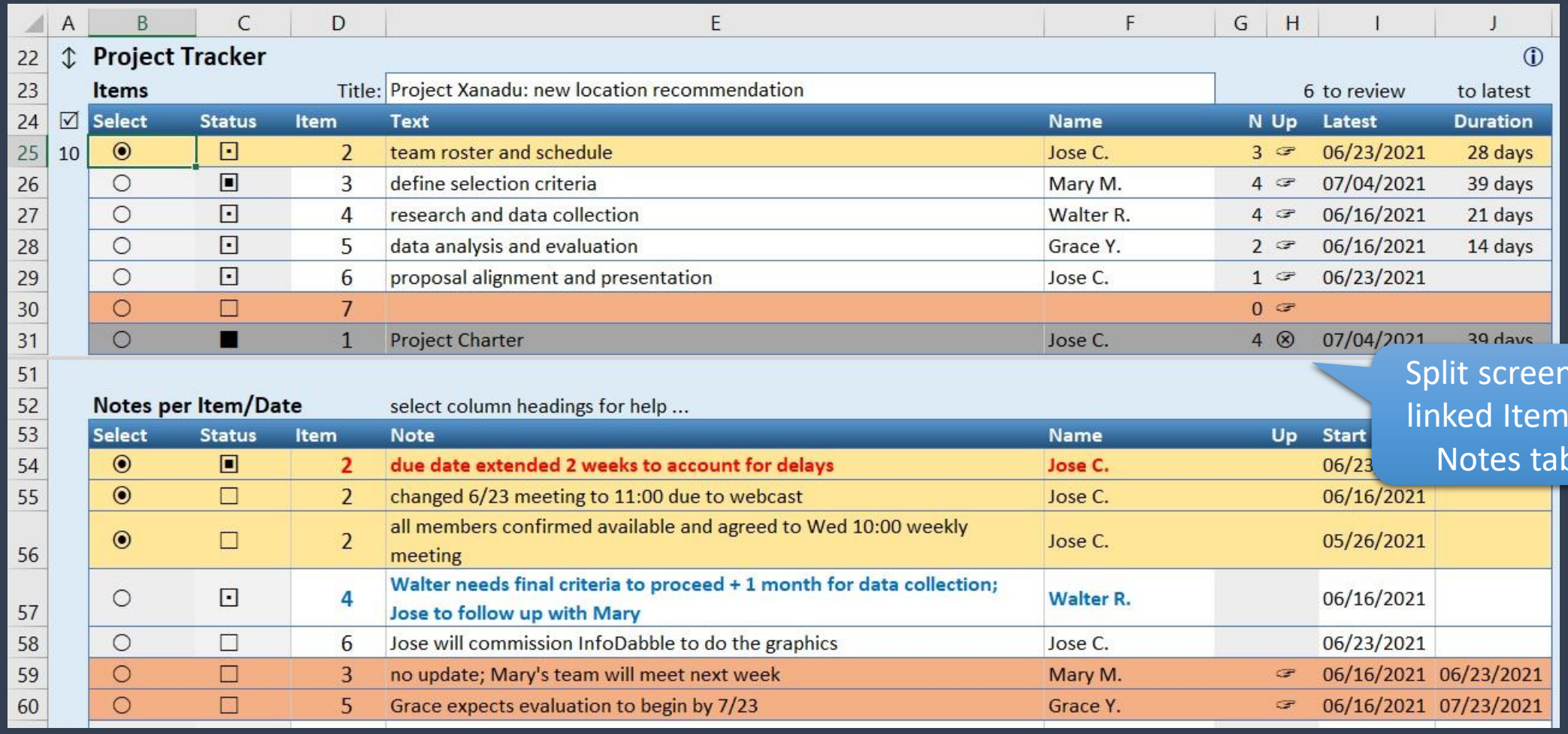
6 to review

to latest

Row Group
Double-click me to show or hide the

Item	Text	Name	N Up	Latest	Duration

Tracking



Project Tracker

Items Title: Project Xanadu: new location recommendation — 6 to review — to latest

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○	☐	7			0	☞		
○	■	1	Project Charter	Jose C.	4	⊗	07/04/2021	39 days

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◉	☐	2	changed 6/23 meeting to 11:00 due to webcast	Jose C.		06/16/2021	
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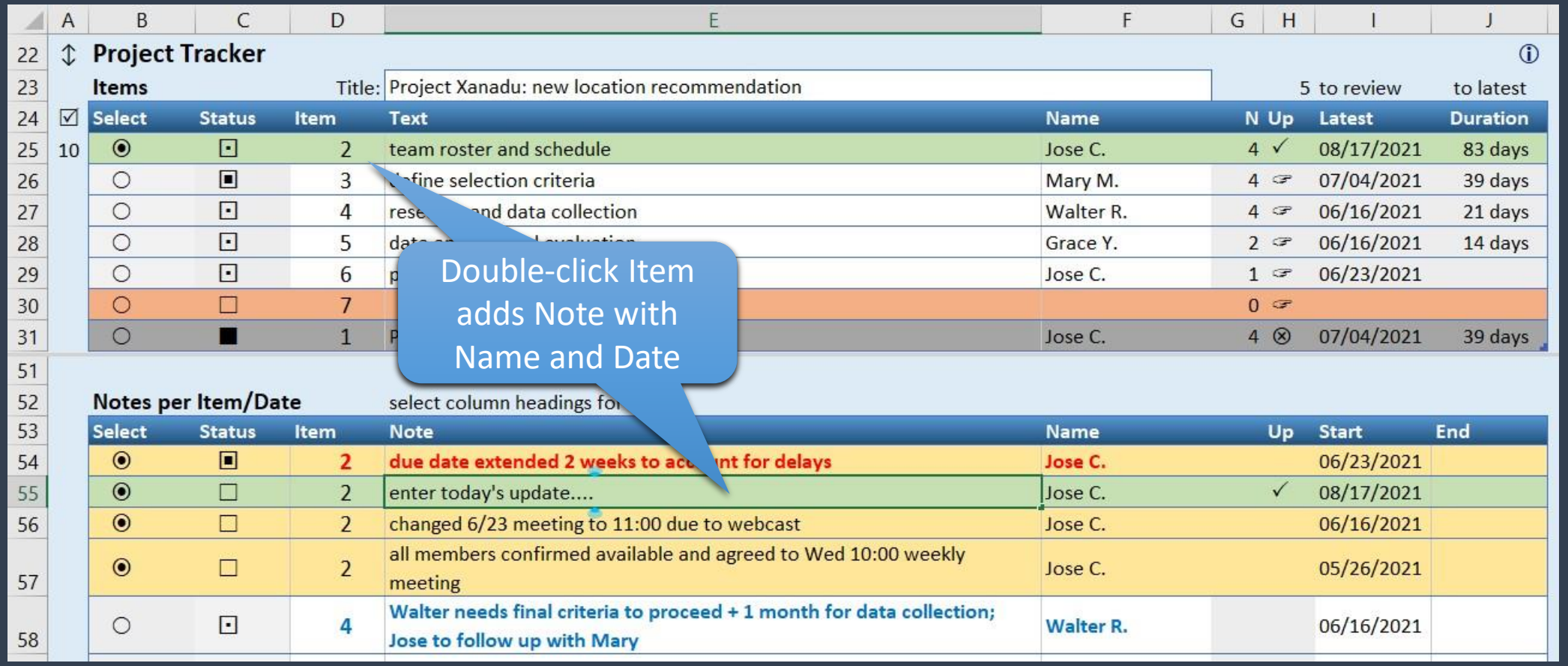
○	☐	5	Grace expects evaluation to begin by 7/23	Grace Y.	☞	06/16/2021	07/23/2021

Split screen with linked Items and Notes tables

Updating


Project Tracker
Items
Title: Project Xanadu: new location recommendation
5 to review
to latest
Select | Status | Item | Text | Name | N | Up | Latest | Duration
2 | team roster and schedule | Jose C. | 4 | ✓ | 08/17/2021 | 83 days
3 | Mary M. | 4 | 07/04/2021 | 39 days
4 | Walter R. | 4 | 06/16/2021 | 21 days
5 | Grace Y. | 2 | 06/16/2021 | 14 days
6 | Jose C. | 1 | 06/23/2021
7 | 0
1 | Jose C. | 4 | ⊗ | 07/04/2021 | 39 days
Double-click Item adds Note with Name and Date
Notes per Item/Date
select column headings for
Select | Status | Item | Note | Name | Up | Start | End
2 | due date extended 2 weeks to account for delays | Jose C. | 06/23/2021
2 | enter today's update.... | Jose C. | ✓ | 08/17/2021
2 | changed 6/23 meeting to 11:00 due to webcast | Jose C. | 06/16/2021
2 | all members confirmed available and agreed to Wed 10:00 weekly meeting | Jose C. | 05/26/2021
4 | Walter needs final criteria to proceed + 1 month for data collection; Jose to follow up with Mary | Walter R. | 06/16/2021

Chapter 9: MRP Demo

Material Requirements Planning Demo — 40 days

5 of 5	Demand and Supply	5 of 5

large demand range		7 day cycle	
Random Demand	☑ Random	Beginning Stock...	350
Low Demand...	45	Cycle Period...	7 day
High Demand...	200	Minimum Quantity...	500
Default Demand...	200	Incremental Quantity...	250

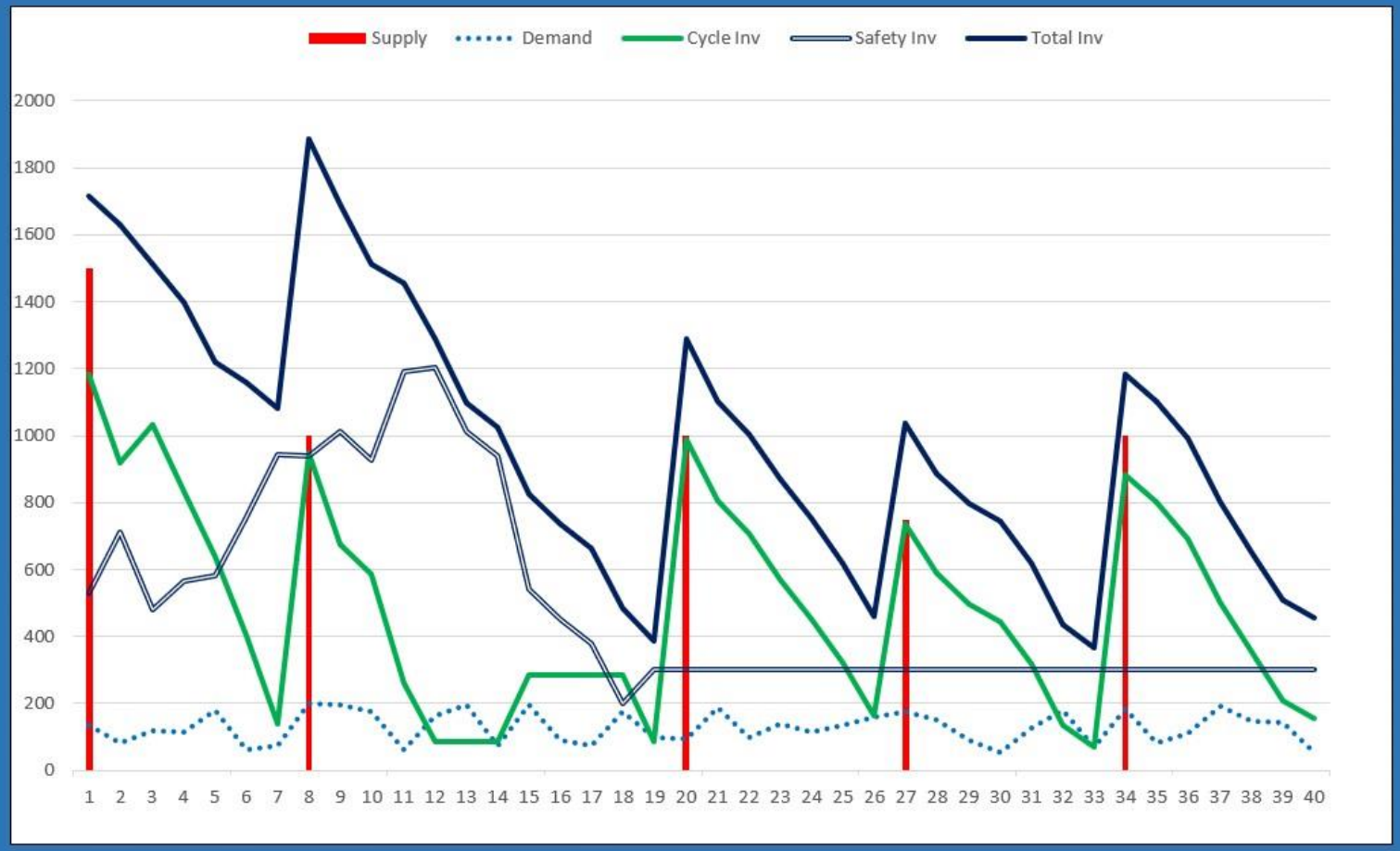
Demand Settings — Supply Settings

4 of 4	Safety	3 of 4

static and future safety stock			future safety time		
Static	Initial	300	Static	Initial	0 days
Future Safety Stock	Day 3	50	Future Safety Time	Day 3	3 days
	Day 7	150		Day 7	4 days
	Day 11	400		Day 11	5 days
	Day 15	200		Day 15	6 days
	Day 19	300		Day 19	

Safety Stock Settings — Safety Time Settings

Day	Ind Dem	With ST	± SS	Total Dem	Supply	Cycle Inv	To
1	-136	-367	-300	-667	1500	1183	1
2	-84	-263	0	-263	0	920	2
3	-117	-137	250	113	0	1033	1
4	-114	-198	0	-198	0	835	1
5	-179	-195	0	-195	0	640	2
6	-61	-236	0	-236	0	404	3
7	-76	-164	-100	-264	0	140	3
8	-198	-194	0	-194	1000	946	4
9	-195	-269	0	-269	0	677	5



MRP Demo

ABOUT MRP DEMO

MRP, or Material Requirements Planning, is in essence a simple ledger of future inventory debits and credits. However, due to a variety of dynamic variables, results can be difficult to predict and visualize. This sheet gives the common tabular display of the future plan, and a chart of demand, supply and inventory.

The Demo is an instructional tool using VBA-controlled Scenarios to present sets of inputs and their effect on output. Several illustrative Scenarios are preset and can be scrolled. The user can enter their own values, and can save, change or delete Scenarios.

Variables include demand randomized within a high/low range, or constant; beginning inventory, minimum and incremental order quantities, and cycle time; safety stock and safety time, both static and time-phased.

This project uses complex formulas made readable with line breaks, indents and help text.

Excel features: Advanced formulas with Name references; Conditional Formatting; Table; Chart; clean screen;
VBA: Formatting, Scenario Management

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MRP Demo

USAGE NOTES

The demo is most effective with maximum screen space. Headings are hidden (Alt-W,V,H). Additional space can be gained by:

Ctrl+F1 to hide the ribbon

Shift+Ctrl+F1 to hide the ribbon, toolbar and status bar

The five grouped buttons in each section are used to select, add, change and delete scenarios, with prompts to guide the user.

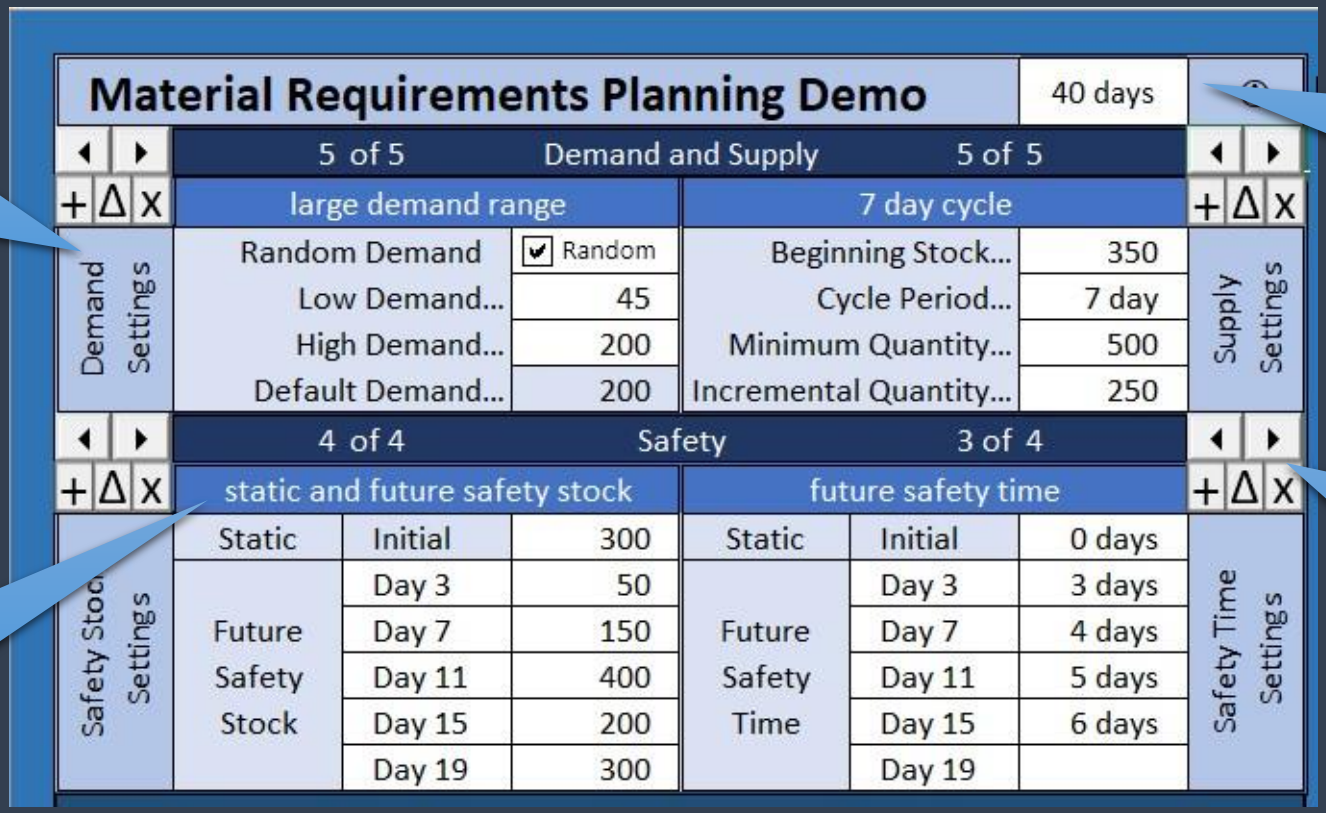
- < and > spinbuttons cycle through existing scenarios
- + button creates a new scenario with the current values in the section
- Δ button changes the values and/or description of the current scenario
- X button deletes the current scenario and renumbers any scenarios above it

All white cells are editable for ad-hoc demo or to set up new scenarios. Scenarios can also be manually managed via Scenario Manager, Alt-A,W,S.

Table formulas can be read by expanding the formula bar, Shift+Ctrl+U.

A hidden sheet stores values generated by VBA macros.

Input



Four input areas each have preset scenarios and scenario controls

All white cells can be edited

Current scenario number and description are displayed

Controls allow user to select, create, change and delete scenarios

Table

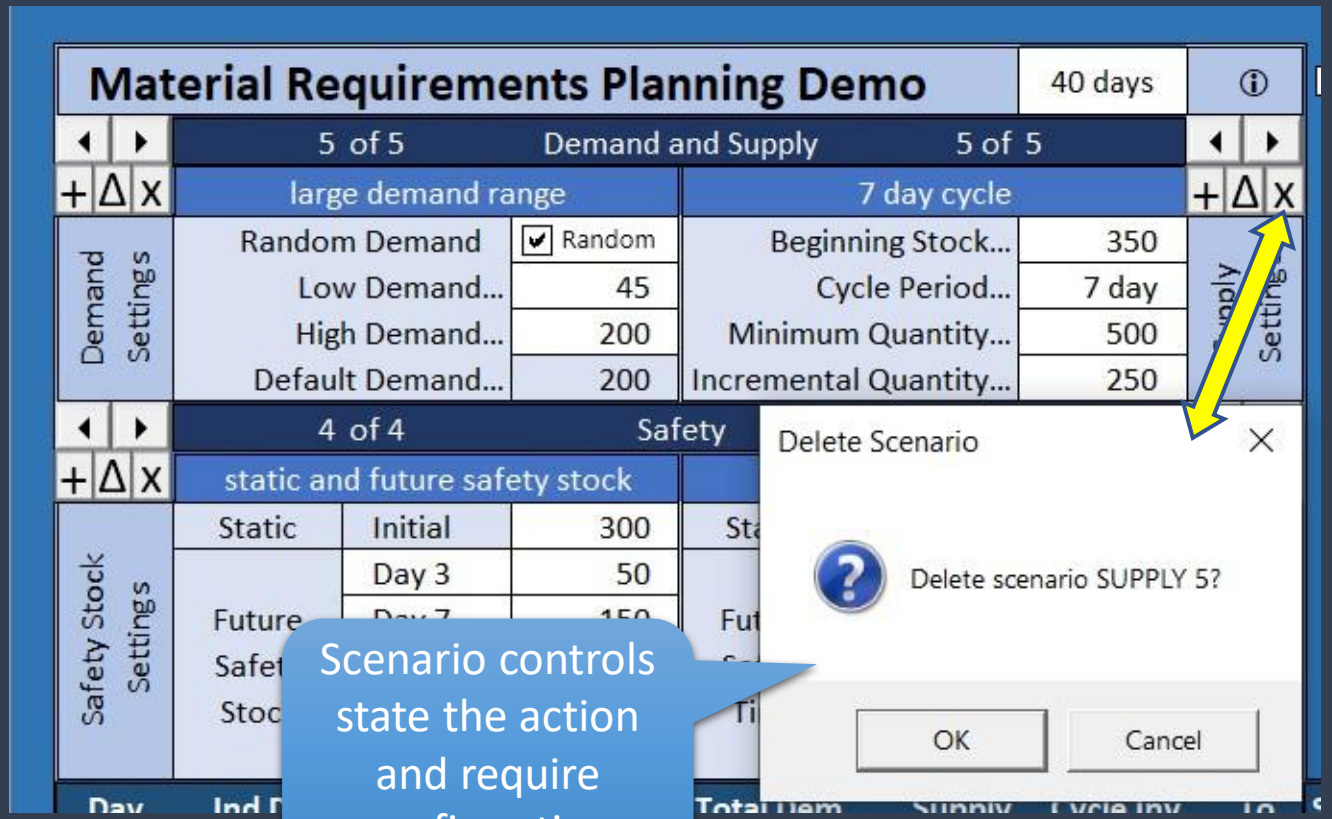
Day	Ind Dem	With ST	± SS	Total Dem	Supply	Cycle Inv	To	STDays	STQty	SSQty	Safety Inv	Total Inv	Demand
=N("SUPPLY (from inputs)...F2 or Ctrl+Shift+U to read...")+						1360	1	0	-268	-300	568	1928	172
N("...if (net demand, roundup (max of (netted cycle demand and min						1110	2	0	-463	-300	763	1873	55
qty), divided by inc qty) times inc qty, else 0) ...")+						1000	1	3	-728	-50	778	1778	95
IF(MIN(IF([@Day]=1,N(Stock),OFFSET([@[Cycle Inv]],-1,0))+						854	1	3	-701	-50	751	1605	173
[@[Total Dem]],0),						706	2	3	-654	-50	704	1410	195
ROUNDUP(						405	3	3	-786	-50	836	1241	169
MAX(						138					12	1050	191
-SUM(OFFSET([@[Total Dem]],0,0,MAX(Cycle,1)))-												904	146
IF([@Day]=1,N(Stock),OFFSET([@[Cycle Inv]],-1,0)),						50						1506	148
MinQty)/						401						1378	128
MAX(IncQty,1),0)*						467						1705	173
MAX(IncQty,1),						370						1538	167
0)						370					6	1436	102
14	-80	0	0	0	0	370	9	5	-586	-400	986	1356	80
15	-197	0	200	200	0	570	9	6	-389	-200	589	1159	197
16	-108	0	0	0	0	570	10	6	-281	-200	481	1051	108
17	-184	0	0	0	0	570	11	6	-97	-200	297	867	184
18	-97	0	0	0	0	570	12	6	0	-200	200	770	97

Formulas are written with structured references on multiple lines and with self-contained notes

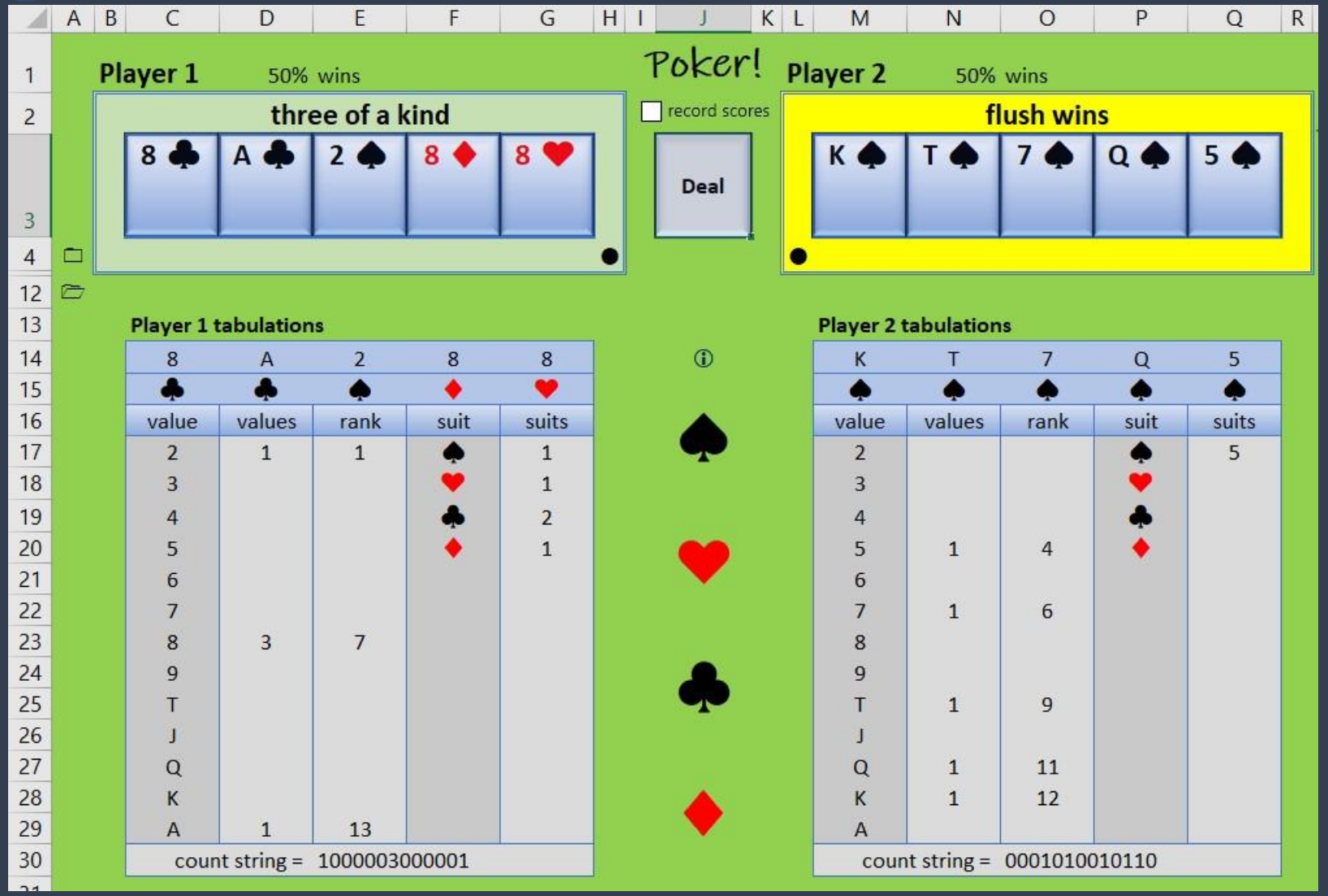
Chart

Chart type and styles show effect of inputs

Scenarios


Material Requirements Planning Demo
40 days
5 of 5
Demand and Supply
5 of 5
large demand range
7 day cycle
Demand Settings
Random Demand
Random
Low Demand...
45
High Demand...
200
Default Demand...
200
Beginning Stock...
350
Cycle Period...
7 day
Minimum Quantity...
500
Incremental Quantity...
250
4 of 4
Safety
static and future safety stock
Safety Stock Settings
Static
Initial
300
Day 3
50
Future
Delete Scenario
Delete scenario SUPPLY 5?
OK
Cancel
Scenario controls state the action and require confirmation

Chapter 10: Fun and Games



Fun and Games

ABOUT FUN AND GAMES

Games are great for demonstrating interactive and random number techniques. Fun features encourage repetition, which accelerates learning. This file has four sheets for single player practice, including two games with simulated competition.

Poker: cards are dealt to two players, with click to hold for up to three deals before the winner is revealed. Counting and scoring processes are displayed. Uses symbols and array functions.
Dice: two pairs of dice are rolled and the result scored. A game can be up to 100 rolls. Dice are designed in a symbol font with various dot options, using array constants to put the dots on the face.
Snake: uses four directional arrows to trace the cursor around a play zone, demonstrating how selection works. Uses the Worksheet_SelectionChange event. Pick one of two simple games, or just practice.
Palindrome: fun word-play; enter a phrase and it is separated by letter and reflected to see if a palindrome can be made. Adjust spacing and punctuation, and record results. Uses array and text functions.

Excel features: Advanced formulas; Logical, Text, Array Functions; Name Manager named ranges and formulas; Conditional Formatting; Data Validation rules and messages; Table processing; Controls; **VBA**: each sheet contains its own macros for game play, selection and navigation.

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Fun and Games

USAGE NOTES

Poker

Play: click Deal button; click cards to hold. Hold at least one card to replace others
Settings: click icons to navigate or hide elements; click deck image to view deck
Record: click checkbox to record hand results, click hash mark icon to view or delete history

Dice

Play: click the 3D die to roll
Settings: select Pip; enter doubles multiplier; enter rolls per game; click folder for more info

Snake

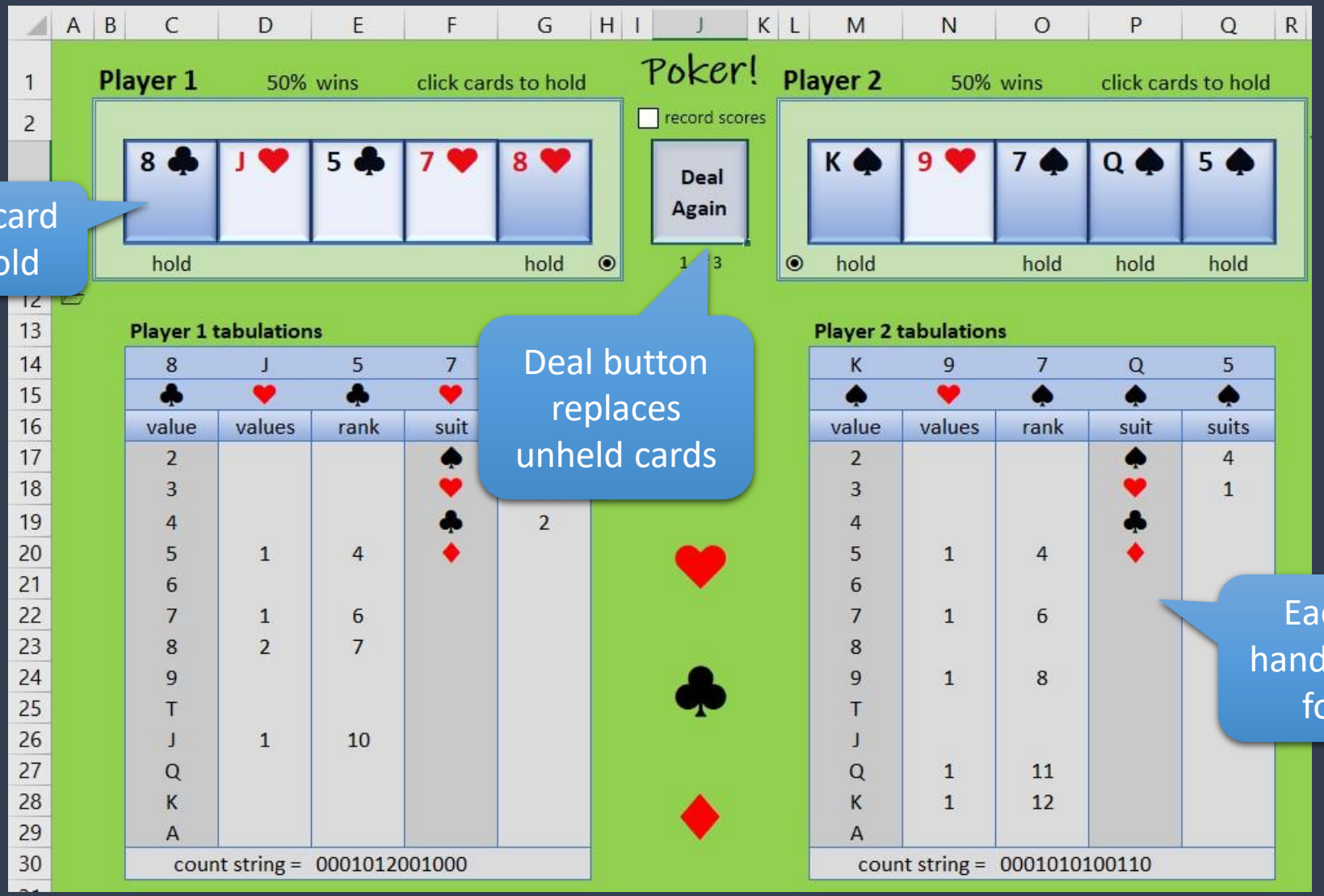
Play: practice with arrows or mouse in play zone; click a game icon to turn game on/off
- Snake: select as many cells as you can one at a time before hitting a filled one
- Balance: arrow or mouse to fill the zone and balance the four symbols

Settings: click trash can to clear zone; click switch to disable tracking; change tracking symbols

Palindrome

Start: click clear buttons to clear input areas; click demo buttons for example
Input: enter first half of palindrome; select pivot point 0 or 1
Edit: enter spacing adjustments, punctuation and capitalization as instructed
Record: click button to record palindrome or to review saved palindromes
Demo: enter seconds per step to view automated demos

Poker Play


Player 1
50% wins
click cards to hold
8 J 5 7 8
hold
hold
Poker!
record scores
Deal Again
Player 2
50% wins
click cards to hold
K 9 7 Q 5
hold
hold
hold
hold
Player 1 tabulations
8 J 5 7
value values rank suit
2
3
4 2
5 1 4
6
7 1 6
8 2 7
9
T
J 1 10
Q
K
A
count string = 0001012001000
Player 2 tabulations
K 9 7 Q 5
value values rank suit suits
2 4
3 1
4
5 1 4
6
7 1 6
8
9 1 8
T
J
Q 1 11
K 1 12
A
count string = 0001010100110
Click card to hold
Deal button replaces unheld cards
Each player's hand is tabulated for scoring

Poker Scoring

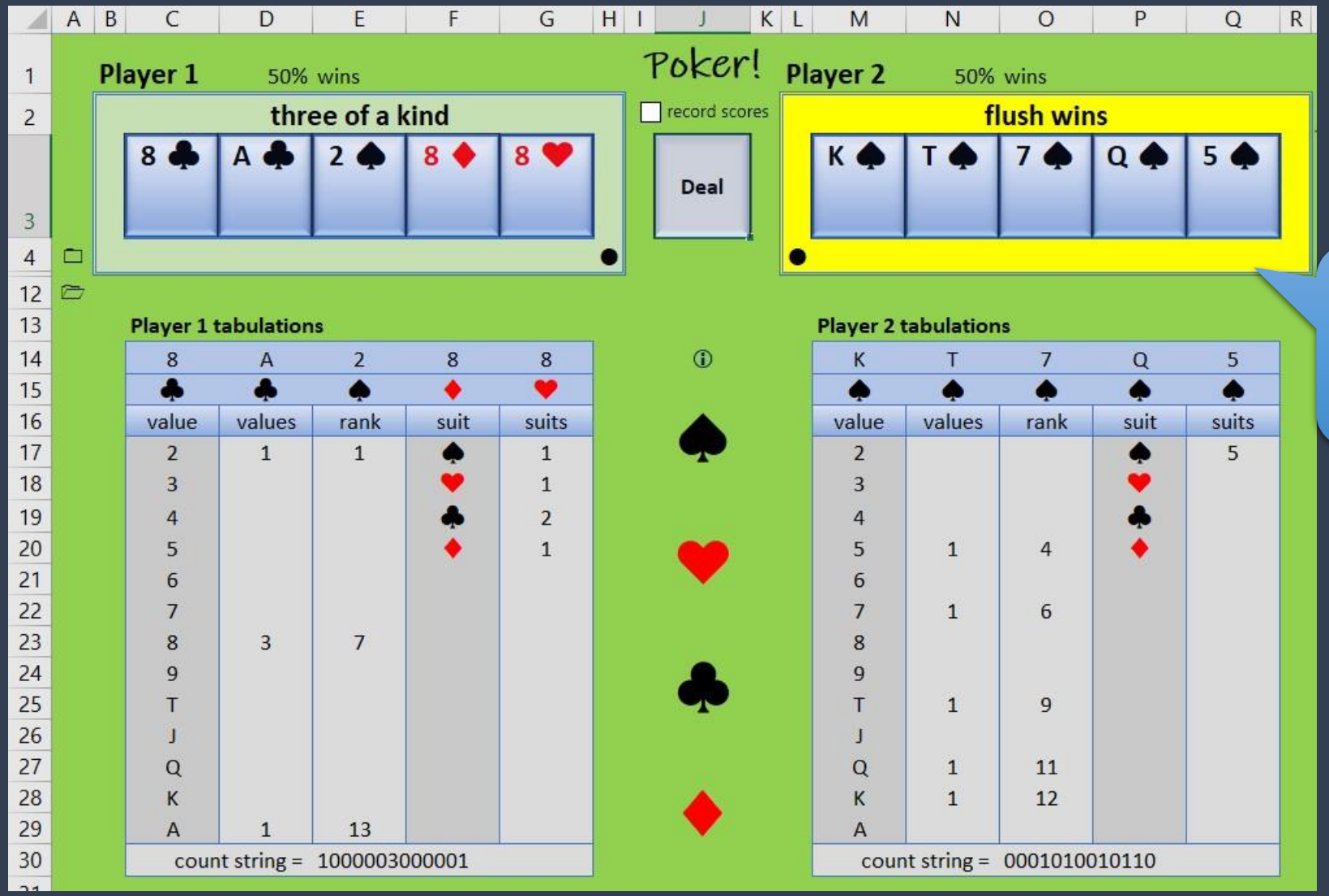
Player hands are scored and ranked for tiebreaking

Scoring calculations

Winner	2	Tiebreak 1	0
Show winner	TRUE	Tiebreak 2	0
High hand	2	Tiebreak 3	0

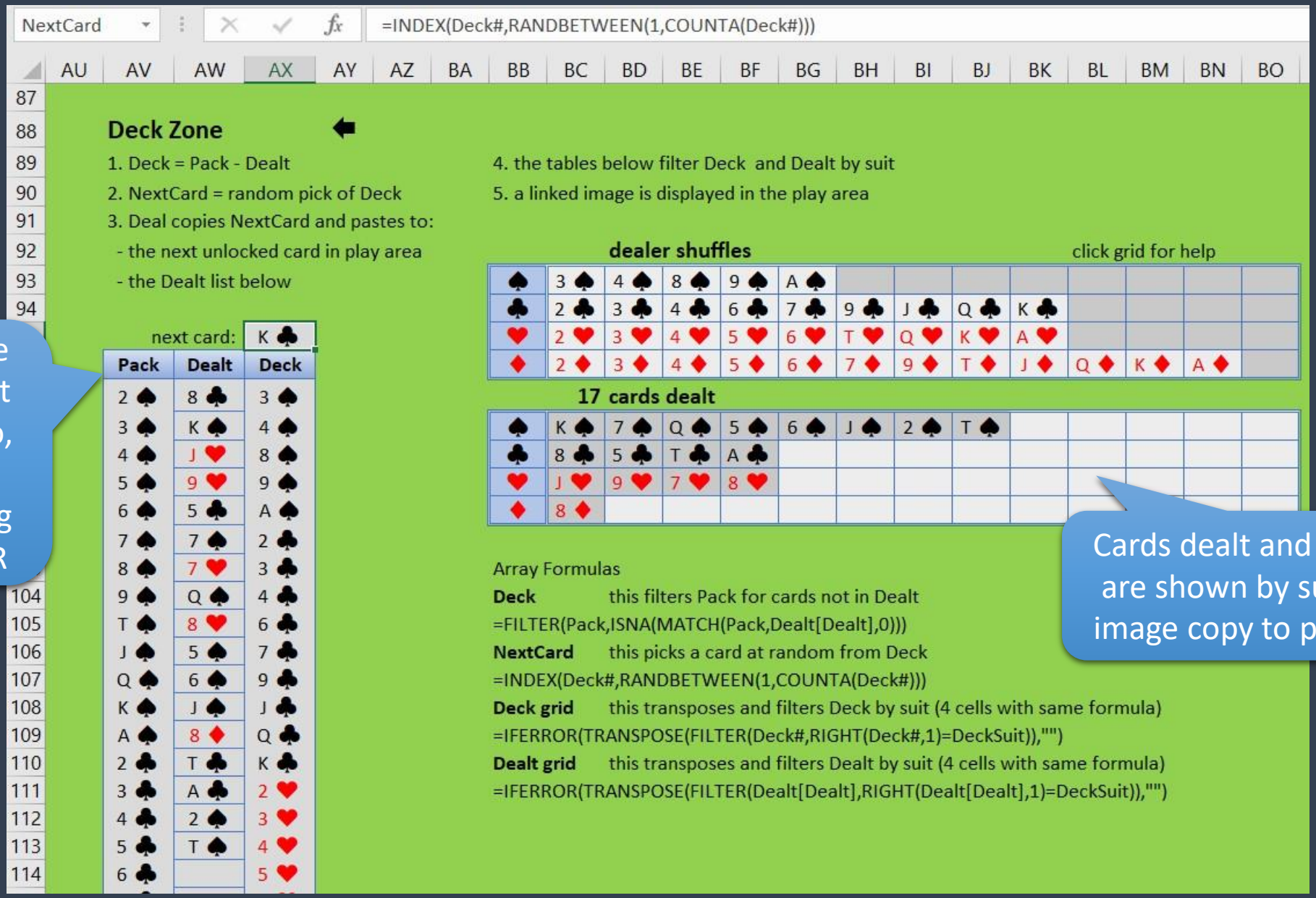
index	hand	win	player1	player2	tie1.1	tie1.2	tie2.1	tie2.2	tie3.1	tie3.2
1	royal flush									
2	straight flush									
3	four of a kind									
4	full house									
5	flush			1		12		11		9
6	straight	10%								
7	three of a kind	30%	1		7					
8	two pair									
9	pair	60%								
10	card									
		10								

Poker Win



Both hands are named, and winning hand is highlighted

Poker Deck


NextCard
=INDEX(Deck#,RANDBETWEEN(1,COUNTA(Deck#)))
Deck Zone
1. Deck = Pack - Dealt
2. NextCard = random pick of Deck
3. Deal copies NextCard and pastes to:
- the next unlocked card in play area
- the Dealt list below
4. the tables below filter Deck and Dealt by suit
5. a linked image is displayed in the play area
next card: K♣
Pack
Dealt
Deck
dealer shuffles
click grid for help
17 cards dealt
Dealt cards are copied to Dealt table by macro, and removed from remaining Deck by FILTER
Cards dealt and undealt are shown by suit with image copy to play area
Array Formulas
Deck this filters Pack for cards not in Dealt
=FILTER(Pack,ISNA(MATCH(Pack,Dealt[Dealt],0)))
NextCard this picks a card at random from Deck
=INDEX(Deck#,RANDBETWEEN(1,COUNTA(Deck#)))
Deck grid this transposes and filters Deck by suit (4 cells with same formula)
=IFERROR(TRANSPOSE(FILTER(Deck#,RIGHT(Deck#,1)=DeckSuit)),"")
Dealt grid this transposes and filters Dealt by suit (4 cells with same formula)
=IFERROR(TRANSPOSE(FILTER(Dealt[Dealt],RIGHT(Dealt[Dealt],1)=DeckSuit)),"")

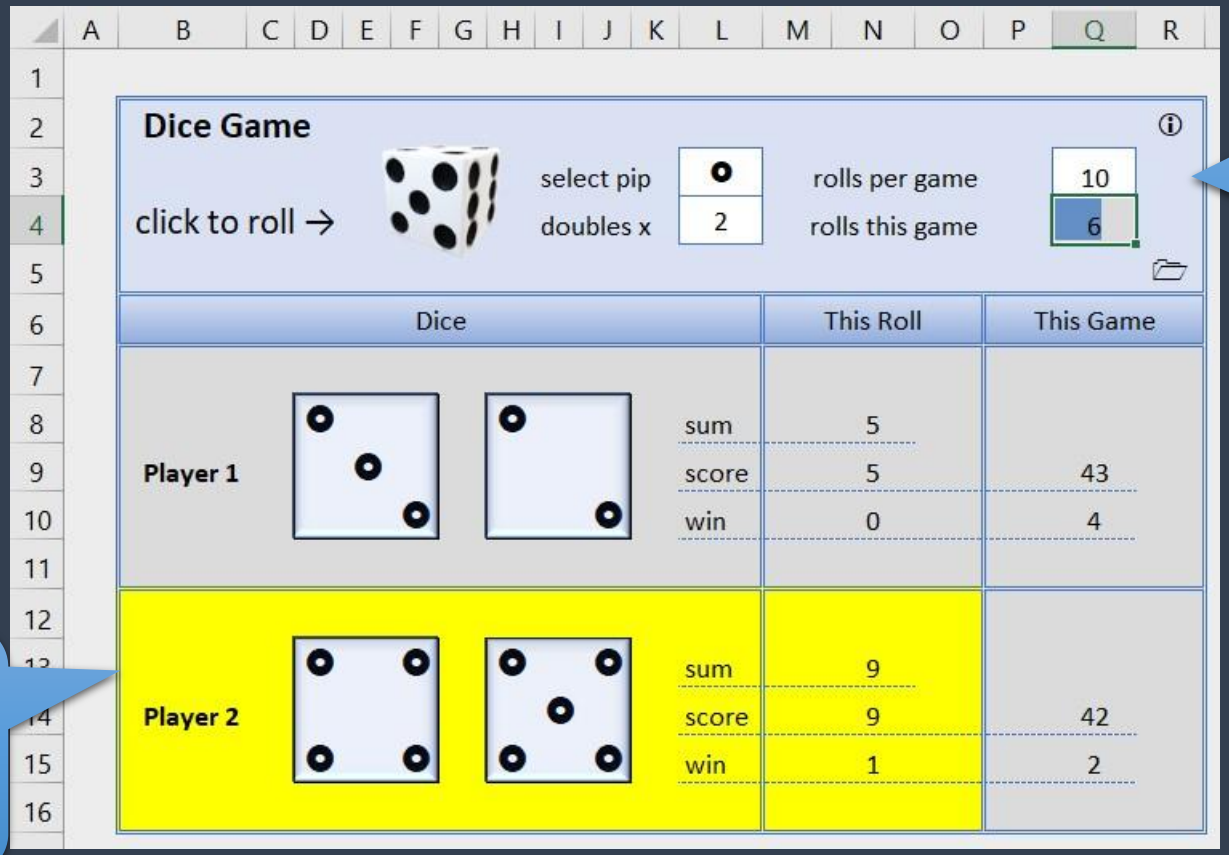
Poker Recording

Scores ⬅ Chart ➡ to delete history, delete all table rows but one, in that one delete only the white cells

This hand			Player 1					50%	Player 2					50%	Analysis			
8/17/21 7:47	11	2	three of a kind	8♣	A♣	2♠	8♦	8♥	flush	K♠	T♠	7♠	Q♠	5♠	Wins		P1-P2	
When	Game	Winner	Hand1	Card11	Card12	Card13	Card14	Card15	Hand2	Card21	Card22	Card23	Card24	Card25	P1	P2	Games	%
8/2/21 11:20	10	1	pair	K♣	3♣	Q♠	A♠	K♦	card	6♠	A♦	4♣	8♣	K♥	5	5	0	0
8/2/21 11:19	9	1	pair	Q♦	3♠	4♠	6♣	Q♥	pair	Q♣	5♦	5♠	8♠	K♣	4	5	-1	-11
8/2/21 11:18	8	1	pair	8♦	3♦	7♠	A♦	A♣	pair	6♥	K♦	A♠	6♦	Q♥	3	5	-2	-25
8/2/21 11:17	7	2	pair	9♣	2♥	J♣	7♣	9♦	pair	6♠	4♥	A♣	A♥	8♥	2	5	-3	-43
8/2/21 11:14	6	1	three of a kind	2♠	2♥	2♣	7♥	T♥	two pair	5♣	8♠	A♠	A♣	8♦	2	4	-2	-33
8/2/21 11:14	5	2	card	9♥	T♣	Q♦	8♦	2♦	pair	3♠	A♣	6♣	A♦	Q♥	1	4	-3	-60
8/2/21 11:13	4	2	two pair	A♥	2♣	A♠	2♦	8♥	straight	9♠	7♠	6♠	5♣	8♠	1	3	-2	-50
8/2/21 10:16	3	1	three of a kind	3♥	5♠	6♣	6♥	6♦	two pair	A♥	T♥	2♣	T♣	2♠	1	2	-1	-33
8/2/21 10:14	2	2	card	7♣	J♥	K♠	8♣	9♥	three of a kind	Q♦	T♦	8♦	T♣	T♥	0	2	-2	-100
8/2/21 10:13	1	2	pair	8♦	2♣	Q♠	3♠	2♠	pair	5♣	6♥	5♠	J♣	2♦	0	1	-1	-100

Game results are optionally stored for analysis

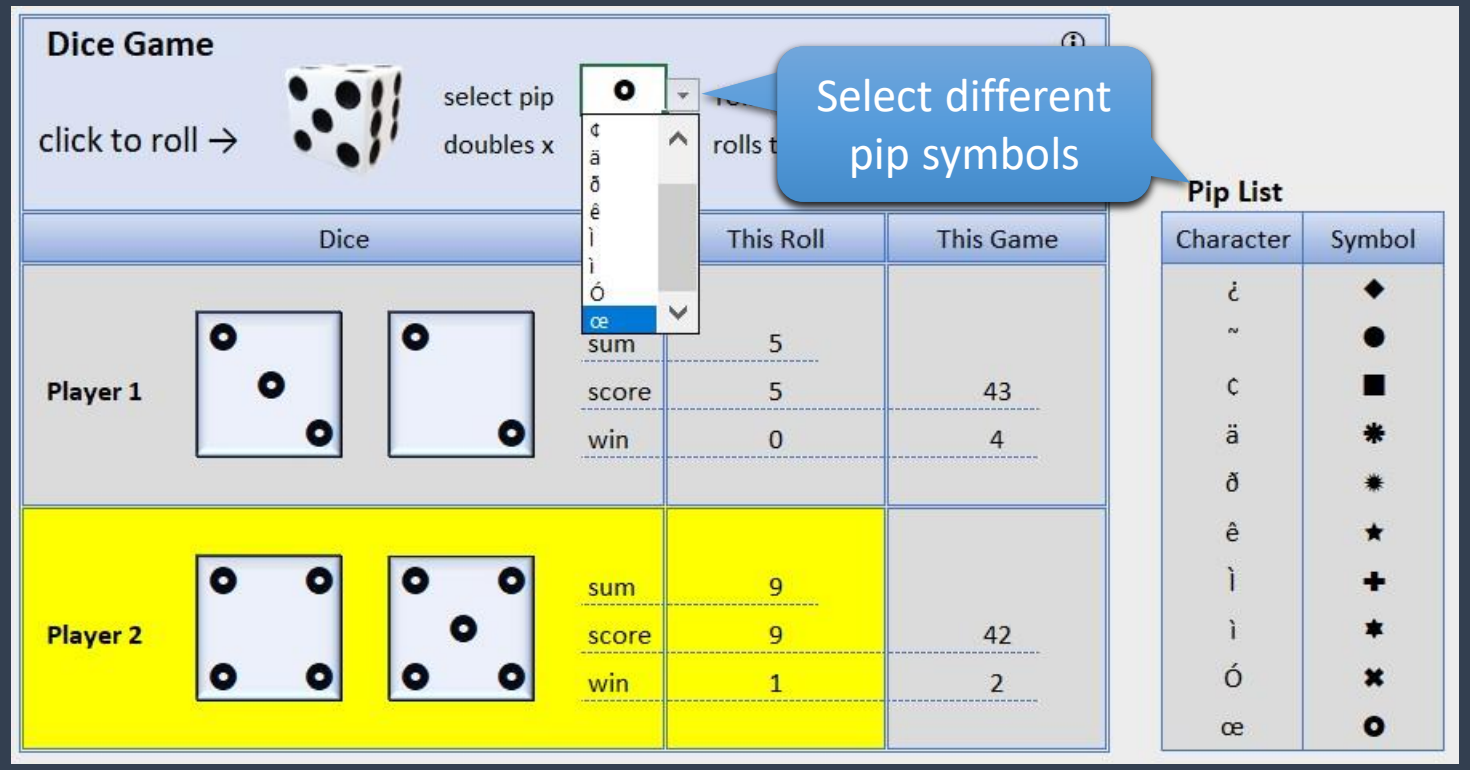
Dice Play



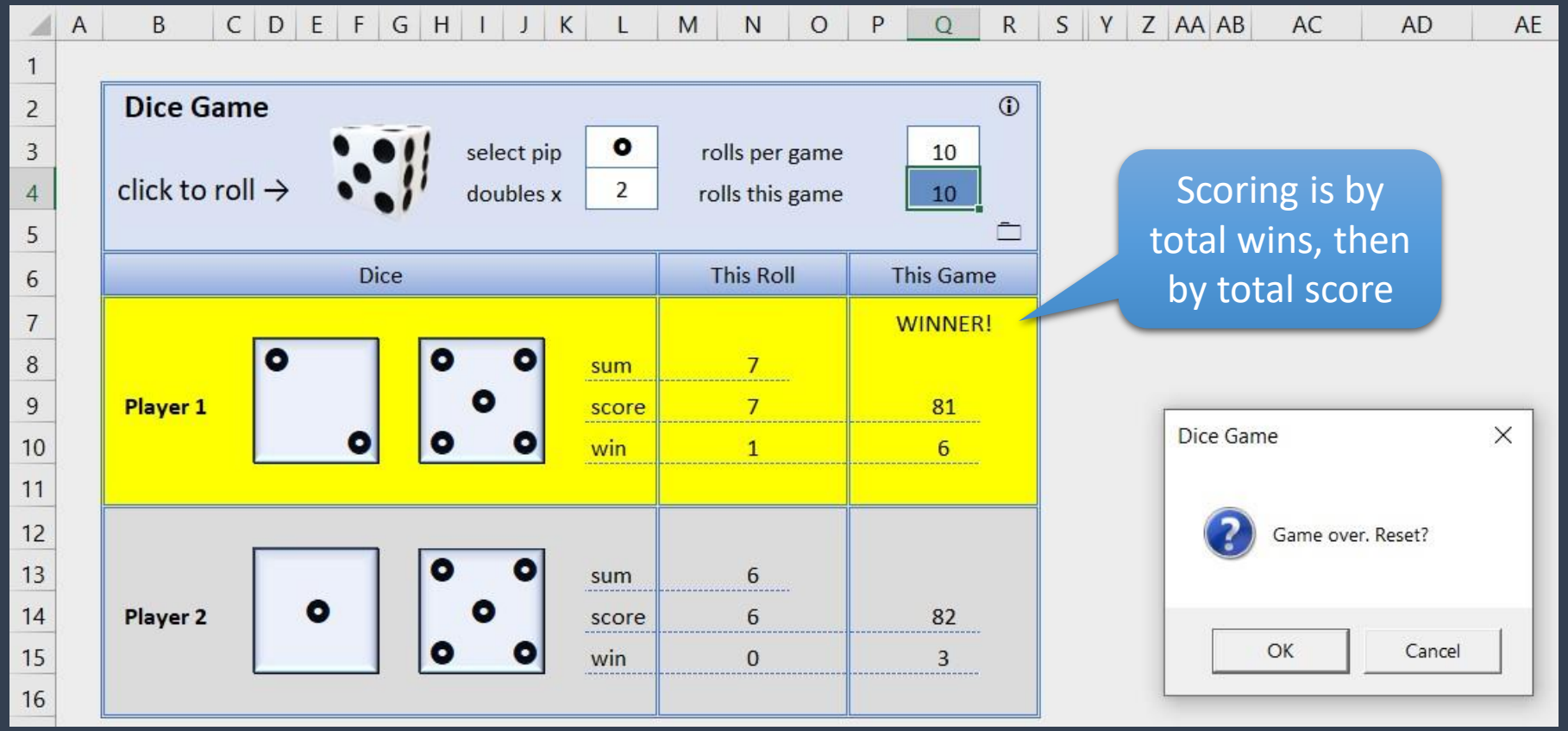
A game can be set as up to 100 rolls

Four dice are randomized and scored as two players

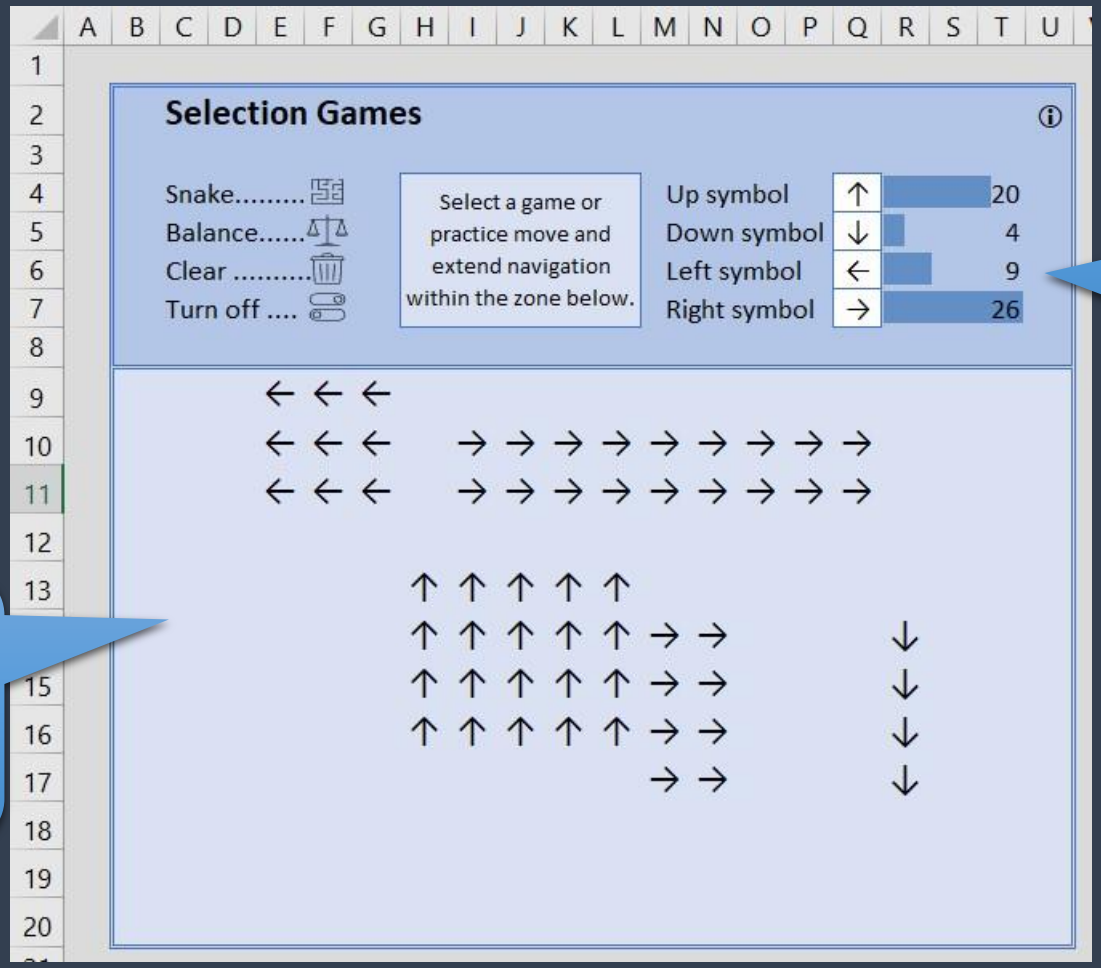
Dice Pip


Dice Game
click to roll →
select pip
doubles x
rolls t
¢
ä
ð
ê
Ì
ì
Ó
œ
Select different pip symbols
Dice
This Roll
This Game
Player 1
sum 5
score 5 43
win 0 4
Player 2
sum 9
score 9 42
win 1 2
Pip List
Character
Symbol
¿
~
Ç
ä
ð
ê
Ì
ì
Ó
œ

Dice Win


Dice Game
click to roll →
select pip
0
doubles x
2
rolls per game
10
rolls this game
10
Dice
This Roll
This Game
Player 1
sum
7
score
7
81
win
1
6
WINNER!
Player 2
sum
6
score
6
82
win
0
3
Scoring is by total wins, then by total score
Dice Game
Game over. Reset?
OK
Cancel

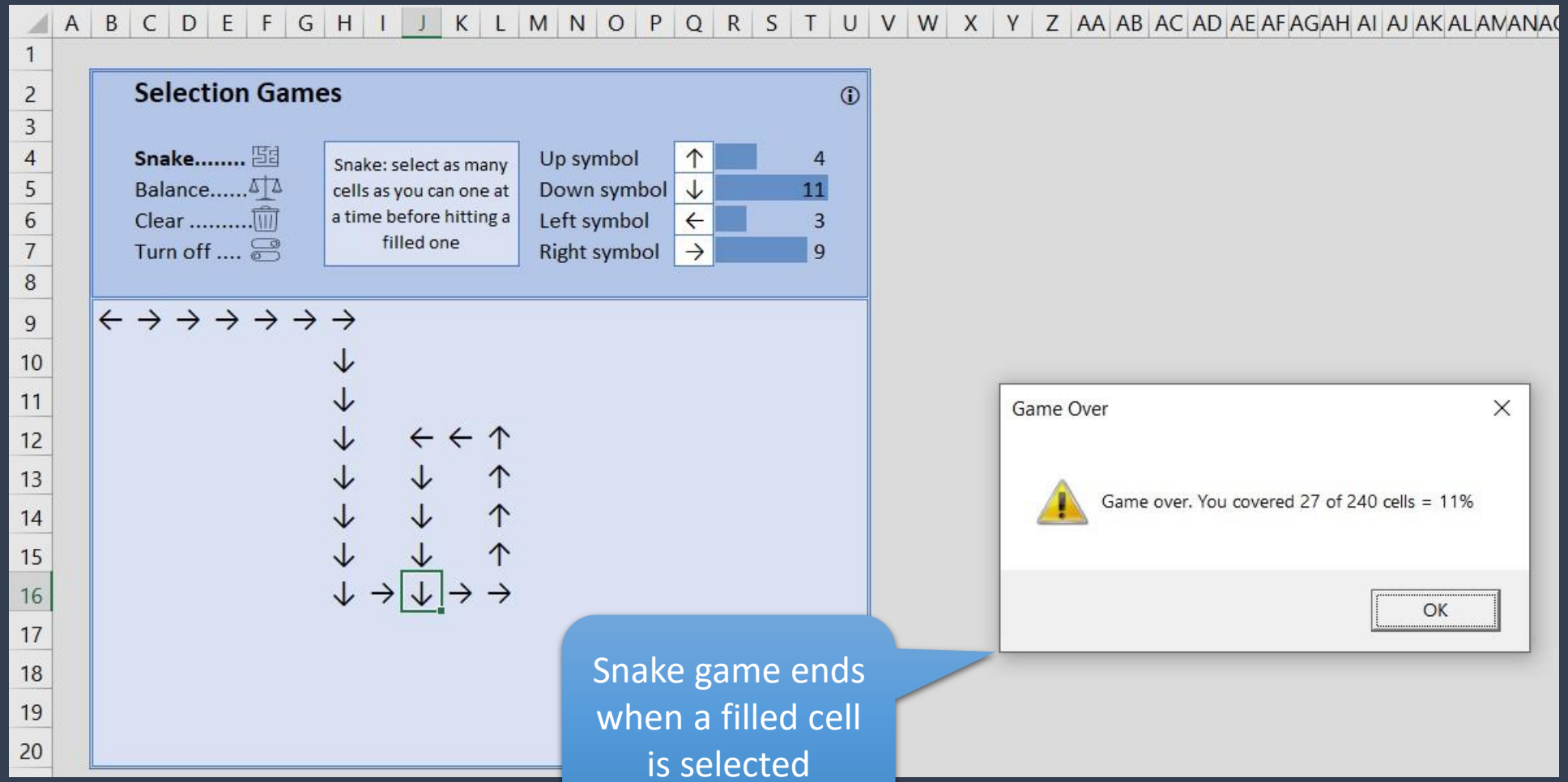
Snake Practice



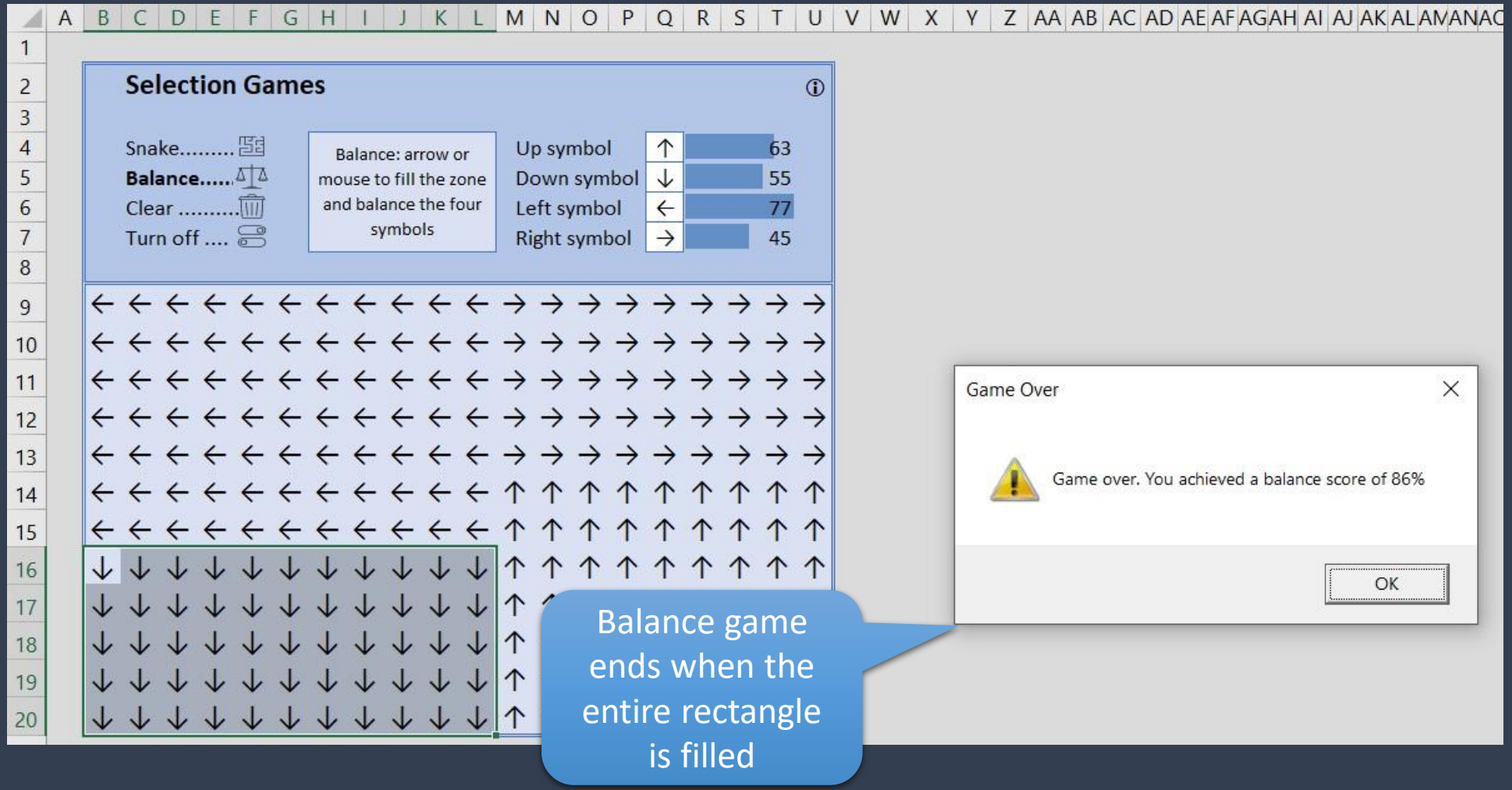
Count of each symbol is tracked; symbols can be changed

The play zone is filled by any selection change by arrows or mouse, alone or with shift/drag

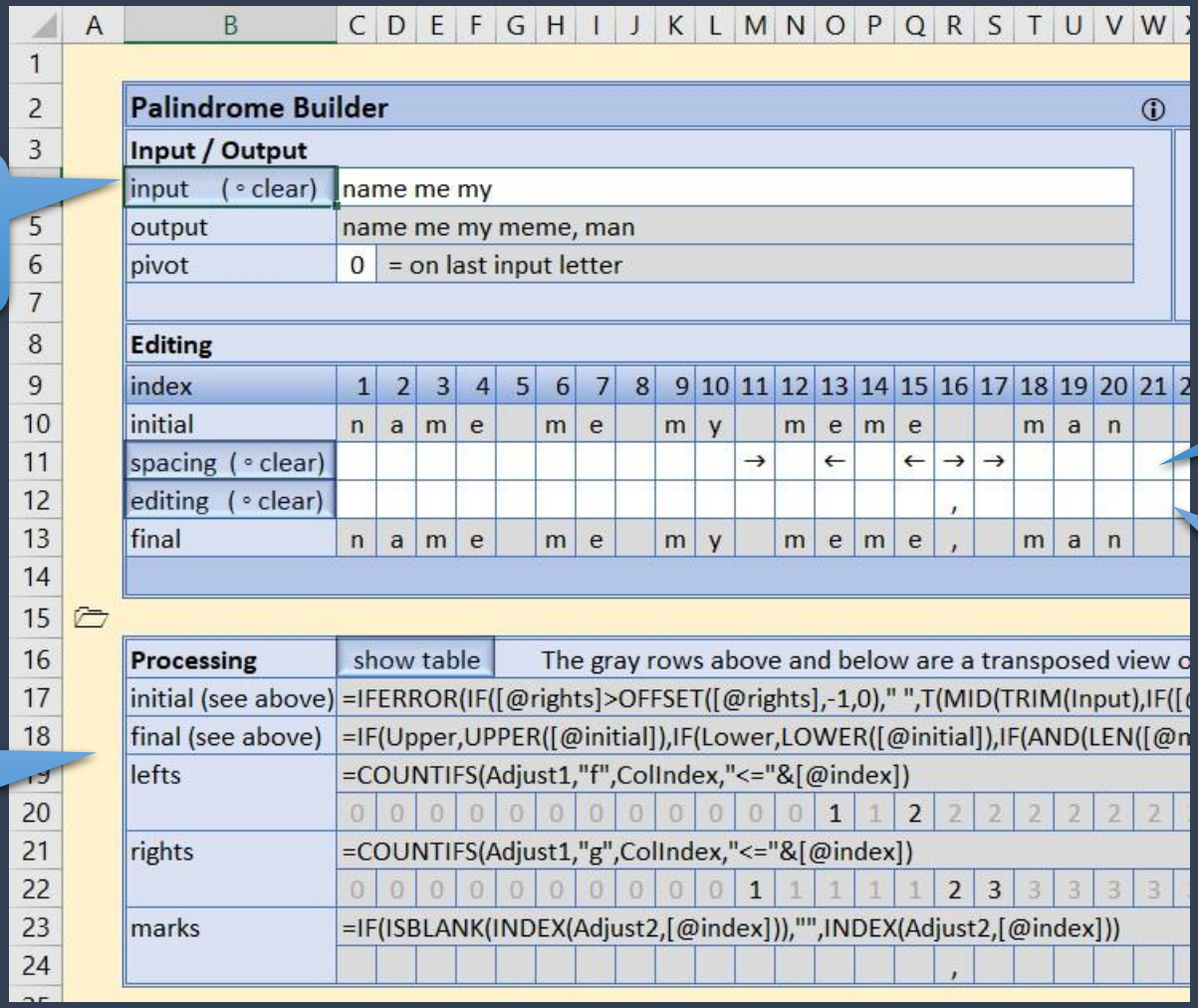
Snake Game


Selection Games
Snake.....
Balance.....
Clear .....
Turn off ....
Snake: select as many cells as you can one at a time before hitting a filled one
Up symbol
Down symbol
Left symbol
Right symbol
4
11
3
9
Game Over
Game over. You covered 27 of 240 cells = 11%
OK
Snake game ends when a filled cell is selected

Snake Balance



Palindrome



Palindrome Builder

Input / Output

input (◦ clear)	name me my
output	name me my meme, man
pivot	0 = on last input letter

Editing

index	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
initial	n	a	m	e		m	e		m	y		m	e	m	e			m	a	n	
spacing (◦ clear)											→		←		←	→	→				
editing (◦ clear)																,					
final	n	a	m	e		m	e		m	y		m	e	m	e	,		m	a	n	

Processing show table The gray rows above and below are a transposed view o

initial (see above)	=IFERROR(IF([@rights]>OFFSET([@rights],-1,0)," ",T(MID(TRIM(Input),IF([(
final (see above)	=IF(Upper,UPPER([@initial]),IF(Lower,LOWER([@initial]),IF(AND(LEN([@n
lefts	=COUNTIFS(Adjust1,"f",ColIndex,"<="&[@index])
	0 0 0 0 0 0 0 0 0 0 0 0 1 1 2 2 2 2 2 2 2
rights	=COUNTIFS(Adjust1,"g",ColIndex,"<="&[@index])
	0 0 0 0 0 0 0 0 0 0 1 1 1 1 1 2 3 3 3 3 3
marks	=IF(ISBLANK(INDEX(Adjust2,[@index])),"",INDEX(Adjust2,[@index]))
	,

Input = first half of palindrome

Spacing is adjusted

Capitalization and punctuation are adjusted

Collapsible row group illustrates the process

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