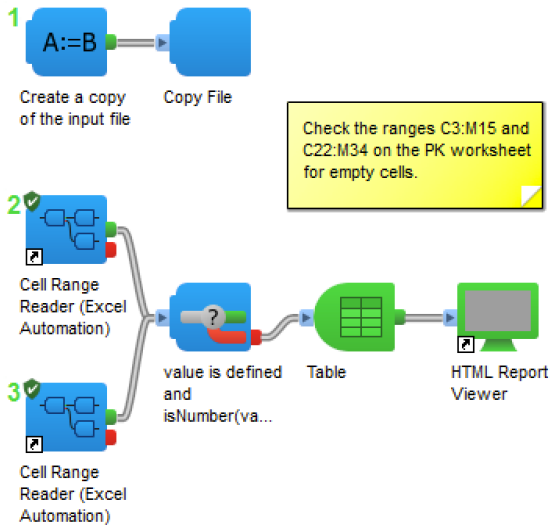
07 Find Empty Cells in a Range

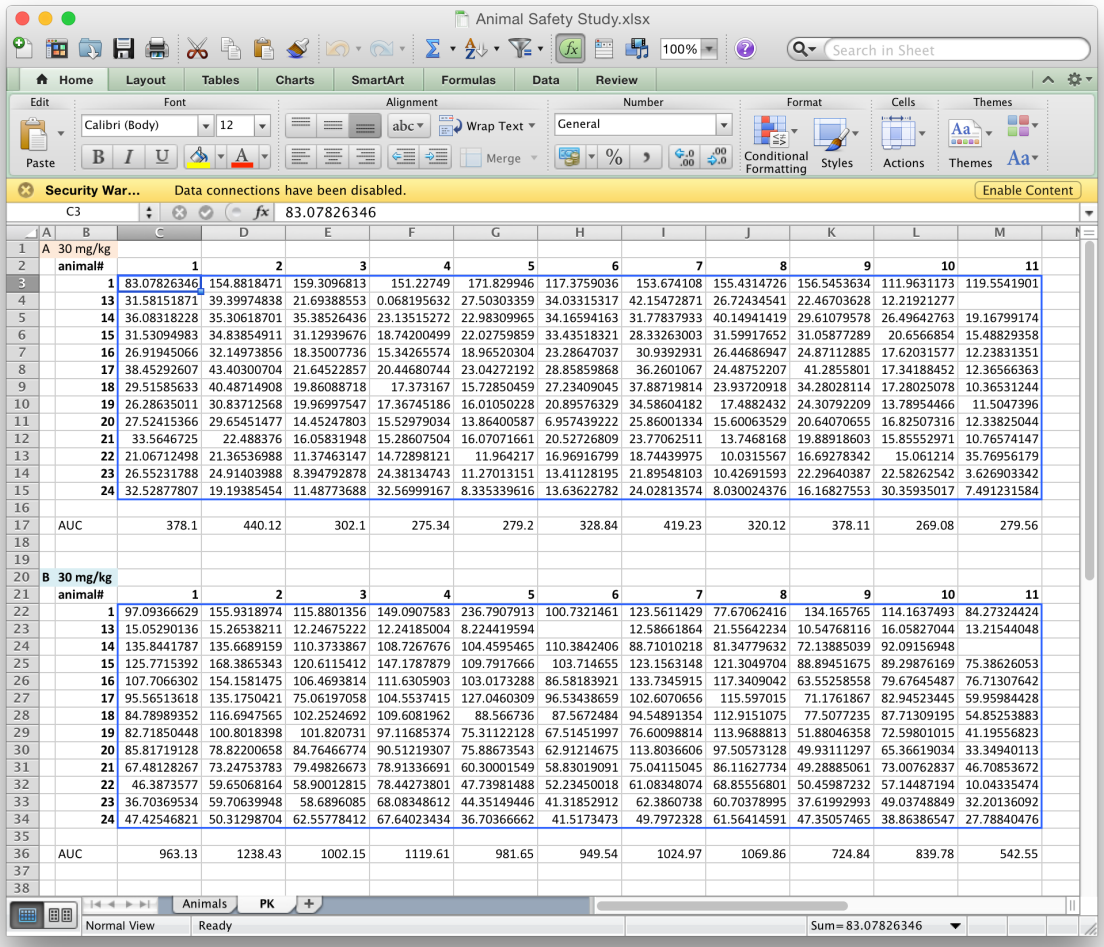
Purpose

Automatically find empty cells in a specified cell range and generate an alert.



Workflow

In this example we read cell values in the ranges C3:M15 and C22:M34 on the **PK** worksheet in the file `data/Animal Safety Study.xlsx` and check for empty cells.



	A	B	C	D	E	F	G	H	I	J	K	L	M
1	A	30 mg/kg											
2		animal#	1	2	3	4	5	6	7	8	9	10	11
3		1	83.07826346	154.8818471	159.3096813	151.22749	171.829946	117.3759036	153.674108	155.4314726	156.5453634	111.9631173	119.5541901
4		13	31.58151871	39.39974838	21.69388553	0.068195632	27.50303359	34.03315317	42.15472871	26.72434541	22.46703628	12.21921277	
5		14	36.08318228	35.30618701	35.38526436	23.13515272	22.98309965	34.16594163	31.77837933	40.14941419	29.61079578	26.49642763	19.16799174
6		15	31.53094983	34.83854911	31.12939676	18.74200499	22.02759859	33.43518321	28.33263003	31.59917652	31.05877289	20.6566854	15.48829358
7		16	26.91945066	32.14973856	18.35007736	15.34265574	18.96520304	23.28647037	30.9392931	26.44686947	24.87112885	17.62031577	12.23831351
8		17	38.45292607	43.40300704	21.64522857	20.44680744	23.04272192	28.85859868	36.2601067	24.48752207	41.2855801	17.34188452	12.36566363
9		18	29.51585633	40.48714908	19.86088718	17.373167	15.72850459	27.23409045	37.88719814	23.93720918	34.28028114	17.28025078	10.36531244
10		19	26.28635011	30.83712568	19.96997547	17.36745186	16.01050228	20.89576329	34.58604182	17.4882432	24.30792209	13.78954466	11.5047396
11		20	27.52415366	29.65451477	14.45247803	15.52979034	13.86400587	6.957439222	25.86001334	15.60063529	20.64070655	16.82507316	12.33825044
12		21	33.5646725	22.488376	16.05831948	15.28607504	16.07071661	20.52726809	23.77062511	13.7468168	19.88918603	15.85552971	10.76574147
13		22	21.06712498	21.36536988	11.37463147	14.72898121	11.964217	16.96916799	18.74439975	10.0315567	16.69278342	15.061214	35.76956179
14		23	26.55231788	24.91403988	8.394792878	24.38134743	11.27013151	13.41128195	21.89548103	10.42691593	22.29640387	22.58262542	3.626903342
15		24	32.52877807	19.19385454	11.48773688	32.56999167	8.335339616	13.63622782	24.02813574	8.030024376	16.16827553	30.35935017	7.491231584
16													
17		AUC	378.1	440.12	302.1	275.34	279.2	328.84	419.23	320.12	378.11	269.08	279.56
18													
19													
20	B	30 mg/kg											
21		animal#	1	2	3	4	5	6	7	8	9	10	11
22		1	97.09366629	155.9318974	115.8801356	149.0907583	236.7907913	100.7321461	123.5611429	77.67062416	134.165765	114.1637493	84.27324424
23		13	15.05290136	15.26538211	12.24675222	12.24185004	8.224419594		12.58661864	21.55642234	10.54768116	16.05827044	13.21544048
24		14	135.8441787	135.6689159	110.3733867	108.7267676	104.4595465	110.3842406	88.71010218	81.34779632	72.13885039	92.09156948	
25		15	125.7715392	168.3865343	120.6115412	147.1787879	109.7917666	103.714655	123.1563148	121.3049704	88.89451675	89.29876169	75.38626053
26		16	107.7066302	154.1581475	106.4693814	111.6305903	103.0173288	86.58183921	133.7345915	117.3409042	63.55258558	79.67645487	76.71307642
27		17	95.56513618	135.1750421	75.06197058	104.5537415	127.0460309	96.53438659	102.6070656	115.597015	71.1761867	82.94523445	59.95984428
28		18	84.78989352	116.6947565	102.2524692	109.6081962	88.566736	87.5672484	94.54891354	112.9151075	77.5077235	87.71309195	54.85253883
29		19	82.71850448	100.8018398	101.820731	97.11685374	75.31122128	67.51451997	76.60098814	113.9688813	51.88046358	72.59801015	41.19556823
30		20	85.81719128	78.82200658	84.76466774	90.51219307	75.88673543	62.91214675	113.8036606	97.50573128	49.93111297	65.36619034	33.34940113
31		21	67.48128267	73.24753783	79.49826673	78.91336691	60.30001549	58.83019091	75.04115045	86.11627734	49.28885061	73.00762837	46.70853672
32		22	46.3873577	59.65068164	58.90012815	78.44273801	47.73981488	52.23450018	61.08348074	68.85556801	50.45987232	57.14487194	10.04335474
33		23	36.70369534	59.70639948	58.6896085	68.08348612	44.35149446	41.31852912	62.3860738	60.70378995	37.61992993	49.03748849	32.20136092
34		24	47.42546821	50.31298704	62.55778412	67.64023434	36.70366662	41.5173473	49.7972328	61.56414591	47.35057465	38.86386547	27.78840476
35													
36		AUC	963.13	1238.43	1002.15	1119.61	981.65	949.54	1024.97	1069.86	724.84	839.78	542.55
37													
38													

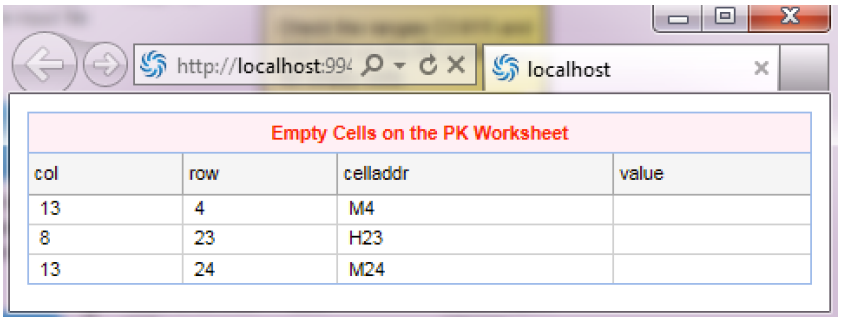
Before reading any data we make a copy of the input file in the job directory. The original input file is shared by all users of the exercise: creating a copy helps ensure it is not accidentally modified if you later decide to use a writer component on it.

Using the **Cell Range Reader** component, we read from our copy of the file and extract the values from ranges C3:M15 and C22:M34 on the **PK** worksheet. We send the cell contents into Pipeline Pilot as data records with the property "value". Using a PilotScript filter component we check for blanks (`value is defined and isNumber(value)`) and generate an alert table in a web browser window.

There are three blanks: in cells M4, H23, M24.

Results

Here is the result of the protocol.



Empty Cells on the PK Worksheet

col	row	celladdr	value
13	4	M4	
8	23	H23	
13	24	M24	