Normalized Comparisons

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This document walks you through some of the functionality of Pesseract.

STEP 1: Start Pesseract.

Open the Pesseract application and the main form is displayed and the "Home" tab of the menu ribbon is displayed. Highlight all five files and copy all five of these links into your clipboard.

http://www.sec.gov/Archives/edgar/data/789019/000156459017000654/msft-20161231.xml http://www.sec.gov/Archives/edgar/data/789019/000119312516742796/msft-20160930.xml http://www.sec.gov/Archives/edgar/data/789019/000119312516662209/msft-20160630.xml http://www.sec.gov/Archives/edgar/data/789019/000119312516550254/msft-20160331.xml http://www.sec.gov/Archives/edgar/data/789019/000119312516441821/msft-20151231.xml

STEP 2: Load period comparison.

Press the "Open" icon on the "Home" menu ribbon. Select the "Compare XBRL instances" menu item.



A form will open that looks like the form you see below but there will be no files in the list of Filenames. Press the "Paste" button. Now your form should look like the screen shot below with the list of the five file names you copied. (If you don't get a list of files, try copying the five URLs into your clipboard again.

Append compar	rision 🛛
	Browse Paste Insert
	Filename
	http://www.sec.gov/Archives/edgar/data/789019/000156459017000654/msft-20161231.xml
V	http://www.sec.gov/Archives/edgar/data/789019/000119312516742796/msft-20160930.xml
V	http://www.sec.gov/Archives/edgar/data/789019/000119312516662209/msft-20160630.xml
	http://www.sec.gov/Archives/edgar/data/789019/000119312516550254/msft-20160331.xml
	http://www.sec.gov/Archives/edgar/data/789019/000119312516441821/msft-20151231.xml
	OK Cancel Clear

Press the "OK" button.

You will see information scrolling in the Console form as each of the five XBRL instances load. It takes a few minutes depending on your internet connection speed; all of the documents and XBRL taxonomies are being downloaded from the SEC web site.

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Console								
Loading	imported	taxonomies	and	linkbases,	Loading	Definitions: stpr-2011-01-31.xsd		
Loading	imported	taxonomies	and	linkbases,	Loading	Formulas: stpr-2011-01-31.xsd		
Loading	dependent	t taxonomies	s fro	om: (https:/	//xbrl.se	ec.gov/stpr/2011/stpr-2011-01-31.xsd): A	Already	loaded:
Loading	imported	taxonomies	and	linkbases,	Loading	Labels: stpr-2011-01-31.xsd		
Loading	dependen	t taxonomies	s fro	om: (https:/	//xbrl.se	ec.gov/stpr/2011/stpr-2011-01-31.xsd): A	Already	loaded:
Loading	imported	taxonomies	and	linkbases,	Loading	References: stpr-2011-01-31.xsd		
Loading	imported	taxonomies	and	linkbases,	Loading	Elements: stpr-2011-01-31.xsd		
Loading	imported	taxonomies	and	linkbases,	Loading	Imports: msft-20161231.xsd		
Loading	imported	taxonomies	and	linkbases,	Loading	Presentation: msft-20161231.xsd		
Loading	imported	taxonomies	and	linkbases,	Loading	Calculation: msft-20161231.xsd		
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STEP 3: After files have loaded.

You will see messages appear in the Console window as the five reports load. After the five reports load, you will a screen that looks like the screen shot below. Note the five different periods.

What is going on is that Pesseract is using the reporting style code of the company to create a normalized comparison of the information in the five different reports. Note that this is a period comparison because all of the reports are for one economic entity (Microsoft) but for different periods.

Rendering	Model Structure Fact Table		Business Rules Structure	Business Rules Validation Res	sults Elements						
Component: (Networ	k and Table)										
Network	001 - Unknown - Gene	Unknown - General Information									
Table	General Information []	neral Information [Table]									
Reporting Entity [Axis]		00	00789019 http://www.sec.gov	//CIK	Ŷ						
Unit [Axis]					۲						
		Pe	riod [Axis] 🛛 🔫								
General Information [Line Items]			2016-07-01 2016-12-31	2016-07-01 2016-09-30	2015-07-01/2016-06-30	2015-07-01 2016-03-31	2015-07-01 2015-12-31				
General Information	[Hierarchy]										
Entity Registrant Name		MI	CROSOFT CORPORATION	MICROSOFT CORPORATION	MICROSOFT CORPORATION	MICROSOFT CORPORATION	MICROSOFT CORPORATION				
Entity Central Index Ke	Ŷ	00	00789019	0000789019	0000789019	0000789019	0000789019				
Entity Filer Category		La	rge Accelerated Filer	Large Accelerated Filer	Large Accelerated Filer	Large Accelerated Filer	Large Accelerated Filer				
Trading Symbol		MS	FT	MSFT	MSFT	MSFT	MSFT				
Fiscal Year End		(6-30	06-30	06-30	06-30	06-30				
Fiscal Year Focus			17	2017	2016	2016	2016				
Fiscal Period Focus		Q2		Q1	FY	Q3	Q2				
Document Type		10	-Q	10-Q	10-К	10-Q	10-Q				
Balance Sheet Date			16-12-31	2016-09-30	2016-06-30	2016-03-31	2015-12-31				

The application leverages the fundamental accounting concept relations metadata to generate a normalized comparison of the five reports. Also, the application computes the roll ups for the balance sheet, income statement, statement of comprehensive income, and cash flow statement to show that all of the roll ups do, in fact, roll up. Click on the balance sheet network and you will see:

Component: (Network and Table)									
Network 101 - Unknown - Balance Sheet, Cla	assified								
Table Balance Sheet, Classified [Table]	Classified [Table]								
Reporting Entity [Axis]	0000789019 http://www.sec.gov/CIK Ÿ								
Unit [Axis]	USD		Ŷ						
	Period [Axis] 🗢								
Balance Sheet [Line Items]	2016-12-31	2016-09-30	2016-06-30	2016-03-31	2015-12-31				
Assets [Roll Up]									
Current Assets	144,949,000,000	157,909,000,000	139,660,000,000	128,421,000,000	127,812,000,000				
Noncurrent Assets	79,661,000,000	54,615,000,000	54,034,000,000	53,448,000,000	52,286,000,000				
Assets	224,610,000,000	212,524,000,000	193,694,000,000	181,869,000,000	180,098,000,000				
Liabilities and Equity [Roll Up]									
Liabilities [Roll Up]									
Current Liabilities	70,787,000,000	58,810,000,000	59,357,000,000	44,354,000,000	42,643,000,000				
Noncurrent Liabilities	85,014,000,000	83,342,000,000	62,340,000,000 62,709,		60,675,000,000				
Liabilities	155,801,000,000	142,152,000,000	121,697,000,000	107,063,000,000	103,318,000,000				
Commitments and Contingencies	xsi:nil	xsi:nil	xsi:nil	xsi:nil	xsi:nil				
Temporary Equity	0	0	0	0	0				
Equity [Roll Up]									
Equity Attributable to Parent	68,809,000,000	70,372,000,000	71,997,000,000	74,806,000,000	76,780,000,000				
Equity Attributable to Noncontrolling Interest	0	0	0	0	0				
Equity	68,809,000,000	70,372,000,000	71,997,000,000	74,806,000,000	76,780,000,000				
Liabilities and Equity	224,610,000,000	212,524,000,000	193,694,000,000	181,869,000,000	180,098,000,000				

Cash flow statement:

Component: (Networ	mponent: (Network and Table)										
Network	401 - Unknown - Cash Flow Statem	ent									
Table	Cash Flow Statement [Table]	flow Statement [Table]									
Reporting Entity [Axis]		0000789019 http://www.sec.gov/CIK									
Unit [Axis]		USD		٢							
		Period [Axis] 📼									
Cash Flow Statement [[Line Items]	2016-07-01/2016-12-31	2016-07-01/2016-09-30	2015-07-01/2016-06-30	2015-07-01/2016-03-31	2015-07-01/2015-12-31					
Net Cash Flow [Roll	Up]										
Net Cash Flow from	Operating Activities [Roll Up]										
Net Cash Flow from Op	perating Activities, Continuing	17,842,000,000	11,549,000,000	33,325,000,000	24,861,000,000	14,192,000,000					
Net Cash Flow from Operating Activities, Discontinued		0	0	0	0	0					
N	let Cash Flow from Operating Activities	17,842,000,000	11,549,000,000	33,325,000,000	24,861,000,000	14,192,000,000					
Net Cash Flow from	Investing Activities [Roll Up]										
Net Cash Flow from Inv	vesting Activities, Continuing	(33,221,000,000)	(18,470,000,000)	(23,950,000,000)	(13,877,000,000)	(8,394,000,000)					
Net Cash Flow from Inv	vesting Activities, Discontinued	0	0	0	0	0					
1	Net Cash Flow from Investing Activities	(33,221,000,000)	(18,470,000,000)	(23,950,000,000)	(13,877,000,000)	(8,394,000,000)					
Net Cash Flow from	Financing Activities [Roll Up]										
Net Cash Flow from Financing Activities, Continuing		17,345,000,000	14,329,000,000	(8,393,000,000)	(9,364,000,000)	(4,146,000,000)					
Net Cash Flow from Financing Activities, Discontinued		0	0	0	0	0					
Net Cash Flow from Financing Activities		17,345,000,000	14,329,000,000	(8,393,000,000)	(9,364,000,000)	(4,146,000,000)					
Exchange Gains (Losse	es)	(8,000,000)	10,000,000	(67,000,000)	(45,000,000)	(62,000,000)					
	Net Cash Flow	1,958,000,000	7,418,000,000	915,000,000	1,575,000,000	1,590,000,000					

Notice that 100% of the relations checked are consistent with expectations; consistency is indicated by the GREEN coloring of the roll up computation.

STEP 4: Close the reports.

After you have looked at the information that was loaded to your heart's content; close all of the reports by right clicking in the blank area where the names of each window is located. Select "Close All Documents" from the menu that appears. Alternatively, click the "X" in the right hand corner of each window to close each document.



STEP 5: Load entity comparison.

Repeat this process for these five different reports for five *different* public companies. (If you forget what to do, simply look at the steps above, but simply use these URLs below for the entity comparison)

http://www.sec.gov/Archives/edgar/data/858877/000085887717000004/csco-20170128.xml http://www.sec.gov/Archives/edgar/data/320193/000162828017000717/aapl-20161231.xml http://www.sec.gov/Archives/edgar/data/789019/000156459017000654/msft-20161231.xml http://www.sec.gov/Archives/edgar/data/880807/000162828017000901/amsc-20161231.xml http://www.sec.gov/Archives/edgar/data/796343/000079634317000031/adbe-20161202.xml

The loading process with take about the same amount of time as the period comparison. After the loading process has completed, you should see a normalized comparison of the five public companies:

Component: (Network and Table)										
Network	001 - Unknown - General Informati	- Unknown - General Information								
Table	General Information [Table]									
Unit [Axis]		l		Ŷ						
		Period [Axis] Reporting	Period [Axis] Reporting Entity [Axis]							
		2016-07-31/2017-01-28	2016-09-25/2016-12-31	2016-07-01/2016-12-31	2016-04-01/2016-12-31	2015-11-28/2016-12-02				
General Information [Line Items]		0000858877 http:// www.sec.gov/CIK	0000320193 http:// www.sec.gov/CIK	0000789019 http:// www.sec.gov/CIK	0000880807 http:// www.sec.gov/CIK	0000796343 http:// www.sec.gov/CIK				
General Information	[Hierarchy]									
Entity Registrant Name		CISCO SYSTEMS, INC.	APPLE INC	MICROSOFT CORPORATION	AMERICAN SUPERCONDUCTOR	ADOBE SYSTEMS INC				
Entity Central Index Ke	У	0000858877	0000320193	0000789019	0000880807	0000796343				
Entity Filer Category		Large Accelerated Filer	Large Accelerated Filer	Large Accelerated Filer	Accelerated Filer	Large Accelerated Filer				
Trading Symbol		CSCO	AAPL	MSFT	AMSC					
Fiscal Year End		07-29	09-30	06-30	03-31	12-02				
Fiscal Year Focus		2017	2017	2017	2016	2016				
Fiscal Period Focus		Q2	Q1	Q2	Q3	FY				
Document Type		10-Q	10-Q	10-Q	10-Q	10-К				
Balance Sheet Date		2017-01-28	2016-12-31	2016-12-31	2016-12-31	2016-12-02				

Again, the roll ups of all the statements including the balance sheet, income statement, statement of comprehensive income, and cash flow statement are all working as expected. Here is the balance sheet normalized comparison:

FAC Instance Comparision 🗶 FAC Taxonomy FAC Validation Result									
Components (10)	Rendering Model Structure Fact Table	Business Rules Structure	e Business Rules Validation Resu	lts Elements					
a	Component: (Network and Table)								
Network View Component View Deck View	Network 101 - Unknown - Balance Sheet, Classified								
	Table Balance Sheet, Classified (Table)								
Filter Type Filter Level Filter Status Filter Status Filter Status Filter Status Filter Status Filter									
	Unit (Axis)	USD		Υ					
Enter text to filter		Period [Axis] 👻 Reporting E	intity [Axis]						
001-General Information		2017-01-28	2016-12-31			2016-12-02			
101-Balance Sheet, Classified ♦ Balance Sheet, Classified [Table]	Balance Sheet [Line Items]	0000858877 http://	0000320193 http://	0000789019 http://	0000880807 http://	0000796343 http://			
201.7-Income Statement, Multi Step, With Operating Income, Special 6 +		www.sec.gov/CIK	www.sec.gov/CIK	www.sec.gov/CIK	www.sec.gov/CIK	www.sec.gov/CIK			
Income Statement, Single Step [Table]	Assets [Roll Up]								
FE 211-Net Income (Loss) Breakdown Net Income (Loss) Breakdown [Table]	Current Assets	83,392,000,000	103,332,000,000	144,949,000,000	64,260,000	5,839,774,000			
212 Net Jacons (Leas) Available to Common Breakdown 🛧 Net Jacons (Leas)	Noncurrent Assets	42,856,000,000	227,809,000,000	79,661,000,000	45,981,000	6,867,340,000			
Available to Common Breakdown [Table]	Assets	126.248.000.000	331.141.000.000	224.610.000.000	110.241.000	12.707.114.000			
201 Chatamant of Companying Terrary & Chatamant of Companying	Liabilities and Equity [Roll Up]								
■ Solstatement of comprehensive Income statement of comprehensive Income (Loce) [Table]	Liabilities [Roll Up]								
211 Concellentin Interne (Lease) Development & Concellenting Internet	Current Liabilities	22,708,000,000	84,130,000,000	70,787,000,000	38,364,000	2,811,635,000			
(Loss) Breakdown [Table]	Noncurrent Liabilities	39,722,000,000	114,621,000,000	85,014,000,000	8,084,000	2,470,644,000			
FE 401-Cash Flow Statement Cash Flow Statement [Table]	Liabilities	62,430,000,000	198.751.000.000	155,801.000,000	46,448,000	5,282,279,000			
The state of the s	Commitments and Contingencies								
H 411.1-Net Cash How Breakdown ♥ Net Cash How Breakdown [Table]	Temporary Equity	0	0	0	0	0			
420.1-Continuing and Discontinued Net Cash Flow Breakdown ◆ Cash Flow	Equity [Roll Up]								
Statement [Table]	Equity Attributable to Parent	63,811,000,000	132,390,000,000	68,809,000,000	63,793,000	7,424,835,000			
	Equity Attributable to Noncontrolling Interest	7,000,000	0	0	0	0			
	Equity	63,818,000,000	132.390.000.000	68,809,000,000	63.793.000	7,424,835,000			
	Liabilities and Equity	126.248.000.000	331.141.000.000	224.610.000.000	110.241.000	12.707.114.000			

Here is the income statement normalized comparison:

Components (10)	Rendering	Model Structure	Fact Table	Business Rules Structure	e Business Rules Validation Res	ults Elements				
6 m	Component: (Network and Table)									
C Network View C Component View C Block View	Network	Network 201.7 - Unknown - Income Statement, Multi Step, With Operating Income, Special 6								
Eller Tune - Eller Level - Eller Status	Table	Je Income Statement, Single Step [Table]								
Inter Type Thiter Level Thiter Status	Unit [Axis]			USD		Ŷ				
Enter text to filter				Period [Axis] 👻 Reporting E	Entity [Axis]		2			
001-General Information General Information [Table]				2016-07-31/2017-01-28	2016-09-25/2016-12-31	2016-07-01/2016-12-31	2016-04-01/2016-12-31	2015-11-28/2016-12-02		
101-Balance Sheet, Classified Balance Sheet, Classified [Table]	Income Statement [Lin	e Items]		0000858877 http://	0000320193 http://	0000789019 http://	0000880807 http://	0000796343 http://		
 201.7-Income Statement, Multi Step, With Operating Income, Special 6 Income Statement, Single Step [Table] 	Net Income (Loss) [Roll Up]		www.sec.gov/cik	www.sec.gov/crk	www.sec.gov/czk	www.sec.gov/cik	www.sec.gov/cik		
211-Net Income (Loss) Breakdown Net Income (Loss) Breakdown [Table]	Income (Loss) from	Continuing Operation	ons After Tax							
212-Net Income (Loss) Available to Common Breakdown Net Income (Loss)	Income (Loss) from Continuing Operations Before Tax									
→ 301-Statement of Comprehensive Income ◆ Statement of Comprehensive	Operating Income (Loss) [Roll Up]									
Lt Income (Loss) [Table]	Gross Pront [Kon Op]									
311-Comprehensive Income (Loss) Breakdown 🔶 Comprehensive Income	Revenues			23,932,000,000	78,351,000,000	44,543,000,00	59,000,000	5,854,430,000		
(Loss) Breakdown [Table]	Cost of Revenue		8,772,000,000	48,175,000,000	17,745,000,000	50,992,000	819,908,000			
④ 401-Cash Flow Statement		Gross Profit		15,160,000,000	30,176,000,000	26,798,000,00	8,008,000	5,034,522,000		
411.1-Net Cash Flow Breakdown ◆ Net Cash Flow Breakdown [Table] 420.1-Continuing and Discontinued Net Cash Flow Breakdown ▲ Cash Flow Cash Cas	Operating Expenses			9,390,000,000	6,817,000,000	15,396,000,00	28,562,000	3,540,920,000		
Statement [Table]		Operatin	g Income (Loss)	5,770,000,000	23,359,000,000	11,402,000,00	(20,554,000)	1,493,602,000		
	Nonoperating Income Plus Income (Loss) fro	Loss) Plus Interest an m Equity Method Inves	d Debt Expense stments	146,000,000	821,000,000	286,000,00	1,142,000	(58,464,000)		
	Inco	me (Loss) from Contin	uing Operations Before Tax	5,916,000,000	24,180,000,000	11,688,000,00) (19,412,000)	1,435,138,000		
	Income Tax Expense (Benefit)		1,246,000,000	6,289,000,000	1,798,000,00	1,036,000	266,356,000		
	Inco	me (Loss) from Contin	uing Operations After Tax	4,670,000,000	17,891,000,000	9,890,000,00) (20,448,000)	1,168,782,000		
	Income (Loss) from Di	continued Operations,	, Net of Tax	0	0		0	0		
	Extraordinary Items of	Income (Expense), Ne	t of Tax	0	0		0	0		
		Ne	et Income (Loss)	4,670,000,000	17,891,000,000	9,890,000,00) (20,448,000)	1,168,782,000		

NEXT we would encourage you to watch the following videos in order to get an idea of how to move around in the Pesseract application and perform other tasks:

https://www.youtube.com/playlist?list=PLFjXOvKVNbOrQvn_HBeyAN-hCVRZZMFJh

OR, walk through another guided tour of the different features of Pesseract:

http://pesseract.azurewebsites.net/help/Help.html#home

PROBLEMS? Please email <u>Charles.Hoffman@me.com</u> if you need help resolving software installation issues.