# PROOF Financial Reporting Scheme Tutorial

This tutorial walks you through creating a basic financial report for the ***PROOF Financial Reporting Scheme***[1] using a web application called Luca.

This tutorial introduces two new ideas. First, it introduces the notion of an XBRL-based financial reporting scheme. Second, we will begin to understand the internal workings of an XBRL-based financial report.

To use the Luca web application, navigate to the following URL in your browser:

http://luca.yaxbrl.com/
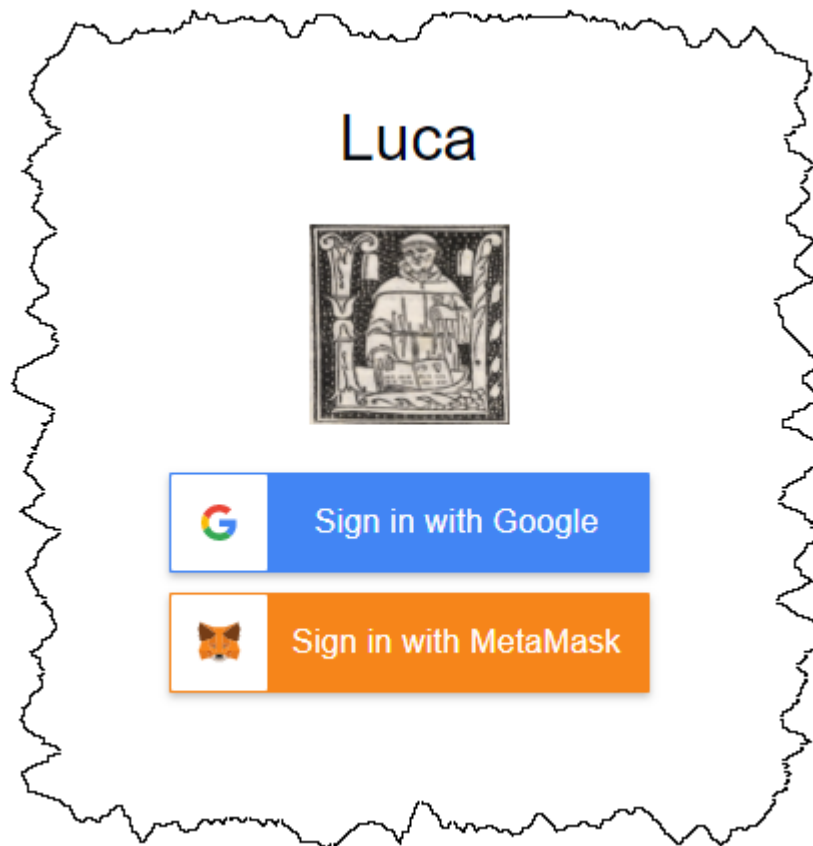
Currently you can sign in using Google sign in or you can use the MetaMask crypto currency wallet. Simply click "Sign in with Google", select the Google account (gmail account) that you want to sign in with, and you will be logged into the application using that Google account. Alternatively, you can sign in using MetaMask by connecting Luca to your MetaMask wallet.

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[1] *Common Elements of Financial Statements*,
http://xbrlsite.azurewebsites.net/2020/intermediate/common/common_ModelStructure.html

If you don't have MetaMask, you can use *How to Install and Use MetaMask*[2] to understand that.

Note that the ***Accounting Equation Tutorial***[3] showed you how to input information into Luca manually. The ***SFAC 6 Tutorial***[4] taught you how to use the Luca import functionality. The ***Common Elements of Financial Statement Tutorial***[5] helped you import something that looked close to a very basic financial report. The ***MINI Financial Reporting Scheme Tutorial***[6] introduces the notion of an XBRL-based financial reporting scheme.

It is highly recommended that you work through all of those tutorials before you undertake this tutorial.

Luca is not just a GUI application. There is also an API interface to Luca. And with Luca, you can generate XBRL-based financial reports or (coming soon) generate a PDF, HTML, Microsoft Word, or Google Documents version of such reports. Fundamentally, Luca is a rules-based expert system API and a GUI for creating financial reports. But, here in this tutorial we focus on the manual creation of XBRL-based financial reports using a GUI.

There are five primary objectives of this tutorial.

- The first objective is to consolidate your understanding of creating an entire XBRL-based financial report by importing information from Excel spreadsheets and then generating XBRL.
- The second objective is to help you consolidate your understanding the logical model of a financial report.
- The third objective is to consolidate your understanding of an XBRL-based financial reporting schemes.
- The fourth objective is to fill in a few gaps in your understanding of the logical model of a financial report, making you aware of a few items that would keep the prior tutorials easier.
- The fifth objective is to solidify your understanding of hypercubes, dimensions, and members and how they are used when creating financial reports.

The next step you will take will be the ***METHOD Tutorial***. That will be another significant leap. To prepare you for that leap, we want to continue setting that rock-solid foundation for you.

Start here:

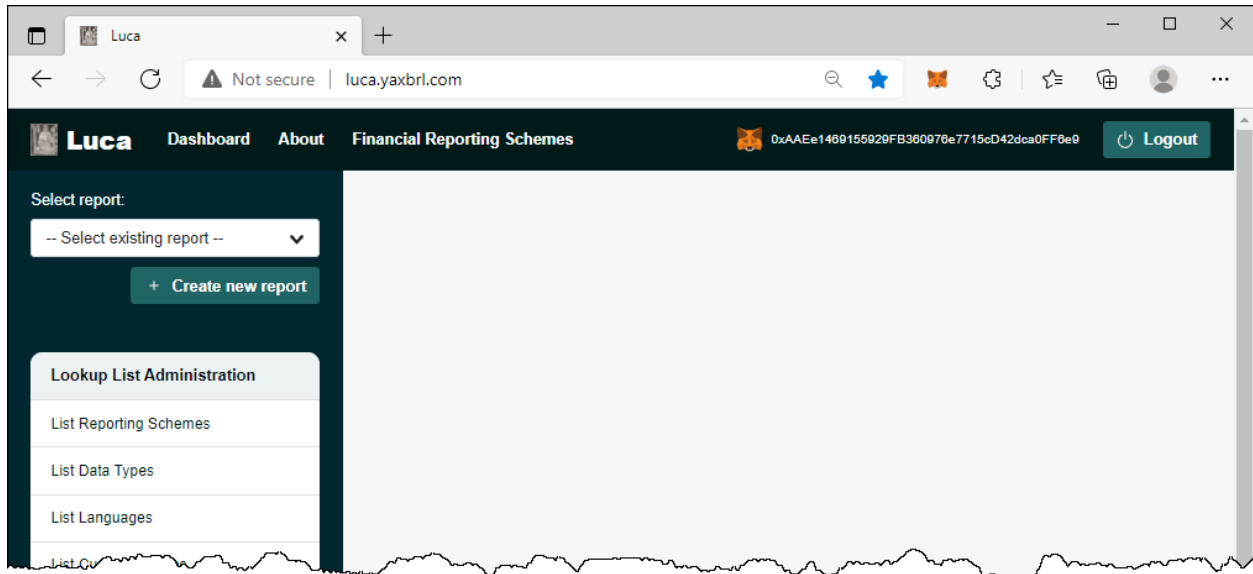After you sign in, in your browser window you will see something similar to the following:

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[2] WeTrust, *How to Install and Use MetaMask*, https://blog.wetrust.io/how-to-install-and-use-metamask-7210720ca047
[3] Accounting Equation Tutorial, http://xbrlsite.azurewebsites.net/2021/luca/AccountingEquation-Tutorial.pdf
[4] SFAC 6 Elements of Financial Statement Tutorial, http://xbrlsite.azurewebsites.net/2021/luca/SFAC6-Tutorial.pdf
[5] Common Elements of Financial Statement Tutorial, http://xbrlsite.azurewebsites.net/2021/luca/common-Tutorial.pdf
[6] MINI Financial Reporting Scheme Tutorial, http://xbrlsite.azurewebsites.net/2021/luca/MINI-Tutorial.pdf

From the left and side of the screen notice the green "Create new report" button. Click that button to create a new report and the following form will be shown:

In the report name field enter the name of the report which you would like to create. We will be creating the PROOF financial report, so enter "PROOF Financial Report" or something like that.

Press the green "Save" button to create the new report.

A shell has been created for your report and your browser application should look something like what you see below. Note your "PROOF Financial Report" report is selected and there is a menu of information which needs to be entered to create the report displayed.
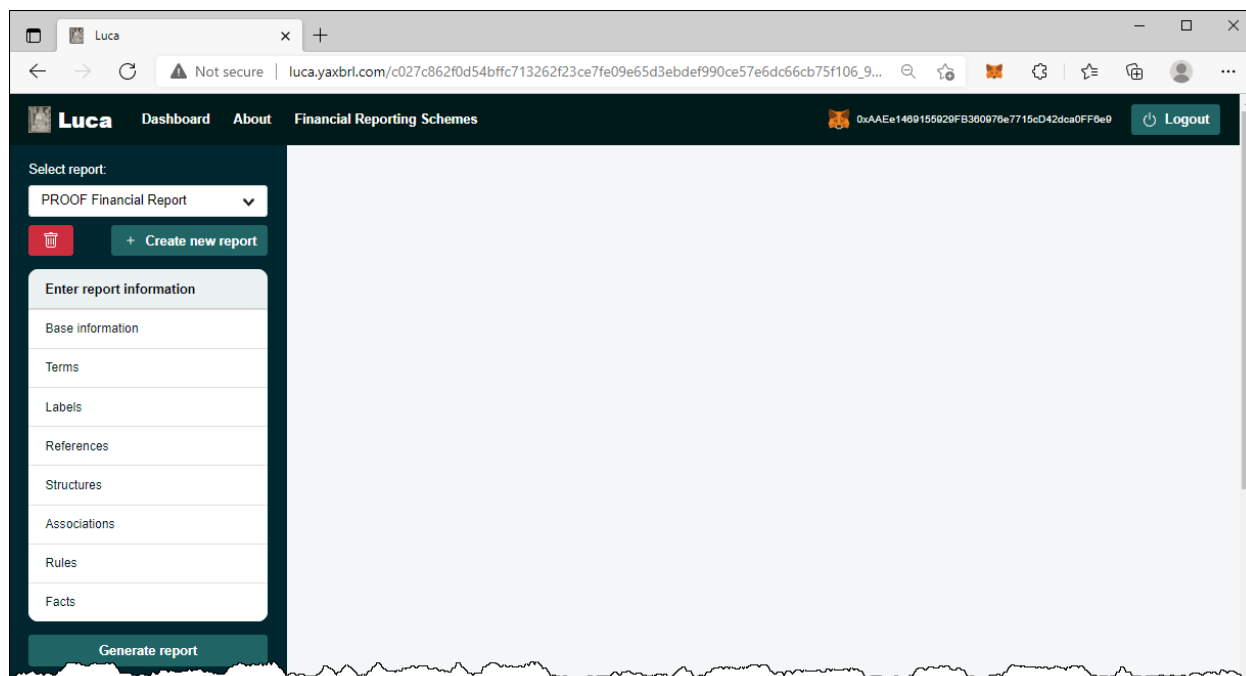
We are trying to keep this tutorial as simple as possible. We encourage you to follow each step exactly in order to get the most out of this tutorial. We will build on this foundation in further tutorials that increase the complexity of the financial report being created. This tutorial will start filling in some missing pieces for you about XBRL-based digital financial reports. Whereas the prior tutorials tended to be mechanical, this tutorial will begin to explain the first layer of details you need to be aware of.

If you are anxious to get into more details, we encourage you to read through the following two documents: (if you don't want details now, don't worry; we will get there)

- *Essence of Accounting*[7]
- *Logical Theory Describing Financial Report*[8]

Also recognize that Luca is a work in progress and incremental improvements will be made to make the application easier to use and increase functionality.

Let's get started.

Step 1: Obtain the import files.

The first thing you need to do for this tutorial is to download the import files that will be used. You can get that ZIP archive here:

http://xbrlsite.azurewebsites.net/2021/luca/proof-import.zip

Download the file, unzip the file into a folder, and your files should look something like this:

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[7] Charles Hoffman, CPA, *Essence of Accounting*,
http://xbrlsite.azurewebsites.net/2020/Library/EssenceOfAccounting.pdf
[8] Charles Hoffman, CPA, *Logical Theory Describing Financial Report*,
http://accounting.auditchain.finance/framework/LogicalTheoryDescribingFinancialReport.pdf

Name	Date modified	Type	Size
proof-associations.xlsx	10/11/2021 2:41 PM	Microsoft Excel Worksheet	15 KB
proof-baseinformation.xlsx	10/11/2021 2:41 PM	Microsoft Excel Worksheet	10 KB
proof-facts.xlsx	10/11/2021 2:41 PM	Microsoft Excel Worksheet	13 KB
proof-facts-dimensions.xlsx	10/1/2021 9:07 AM	Microsoft Excel Worksheet	10 KB
proof-facts-parenthetical.xlsx	10/11/2021 2:41 PM	Microsoft Excel Worksheet	10 KB
proof-labels.xlsx	10/11/2021 2:41 PM	Microsoft Excel Worksheet	11 KB
proof-references.xlsx	10/11/2021 2:41 PM	Microsoft Excel Worksheet	14 KB
proof-rules.xlsx	10/11/2021 2:41 PM	Microsoft Excel Worksheet	10 KB
proof-rules-adjustment.xlsx	10/11/2021 2:41 PM	Microsoft Excel Worksheet	10 KB
proof-rules-consistency.xlsx	10/11/2021 2:41 PM	Microsoft Excel Worksheet	10 KB
proof-rules-memberaggregation.xlsx	10/11/2021 2:41 PM	Microsoft Excel Worksheet	10 KB
proof-rules-nonstandard.xlsx	10/11/2021 2:41 PM	Microsoft Excel Worksheet	11 KB
proof-rules-rollforward.xlsx	10/11/2021 2:41 PM	Microsoft Excel Worksheet	10 KB
proof-rules-variance.xlsx	10/11/2021 2:41 PM	Microsoft Excel Worksheet	10 KB
proof-structures.xlsx	10/11/2021 2:41 PM	Microsoft Excel Worksheet	10 KB
proof-terms.xlsx	10/11/2021 2:41 PM	Microsoft Excel Worksheet	12 KB

We already covered the import steps in detail in several of the other tutorials. If you are not familiar with the import process, please go back and work through those prerequisites. In this tutorial we not going to cover every detail.

If you have worked through the import process already, you will notice some additional files. The import process for each of those files is the same as what we have been doing. But we are importing more information in a few more formats. We will explain each of these new files in due course. Just notice that we have some additional information we are working with.

Step 2: Import Basic information.

Import the base information: (proof-baseinformation.xlsx)

If you open the Excel spreadsheet you will see the information below:

Code	NamespacePrefix	NamespaceIdentifier	SchemaLocation	DefaultLanguage	TaxonomyDescription
Local	report	http://www.xbrlsite.com/report	report.xsd	en	Report Model Created from Proof
Import	proof	http://accounting.auditchain.finance/proof	http://accounting.auditchain.finance/reporting-scheme/proof/base-taxonomy/proof.xsd	en	PROOF (2021-04-19)

We covered the difference between a *Local* taxonomy (your report model) and an *Import* taxonomy (a base taxonomy for a reporting scheme) in prior tutorials. The first row in the Base Information spreadsheet is your report model for the report you are creating and the second row points to a *PROOF Financial Reporting Scheme* which we will be using to create your report model.

There are a few additions that have been made to the PROOF base taxonomy and the other base taxonomies that you have worked with this far including:

- We are introducing dimensions and members.
- We are introducing a few new information patterns including Set, Text Block, Adjustment, Variance, Member Aggregation, and Roll Forward Info. This amends the other information patterns you have seen which included Roll Up and Roll Forward.

5

- In the MINI Financial Reporting Scheme, we have hypercubes in the base taxonomy, but we did not use the hypercubes when creating our report model. In this report we also have hypercubes in the base taxonomy and we will make use of those hypercubes for all the information we represent in this report. The purpose of this is to help you compare and contrast the approaches of using and not using hypercubes in report models.
- We are adding additional rule patterns that go along with the information patterns.
- We are adding the notion of parenthetical explanations (i.e. XBRL footnotes).

If you want background information that helps you understand how the PROOF information patterns were derived, please refer to *Understanding Proof*[9].

We pointed you to a very basic view of a base taxonomy in the *Common Elements of Financial Statements* and *MINI Financial Reporting Scheme* tutorials. We want to show you the similar HTML file for viewing the base taxonomy which you can see here[10]. (If you are curious, here is the XBRL taxonomy schema[11] if you want to explore that.

Notice how all of these XBRL taxonomy base taxonomy models look pretty much the same. The volume and nature of the report elements are different, but all XBRL taxonomies follow the same pattern. The US GAAP XBRL Taxonomy and IFRS XBRL Taxonomy also follow these same patterns.

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[9] Understanding Proof, http://xbrlsite.azurewebsites.net/2020/library/UnderstandingProof.pdf

[10] PROOF Financial Reporting Scheme Base Taxonomy, http://accounting.auditchain.finance/reporting-scheme/proof/base-taxonomy/proof_ModelStructure.html

[11] MINI Financial Reporting Scheme XBRL taxonomy schema, http://accounting.auditchain.finance/reporting-scheme/proof/base-taxonomy/proof.xsd

Another more enhanced view of the PROOF Financial Reporting Scheme base taxonomy and other related information can be found here[12] and looks like what you see in the screenshot below:
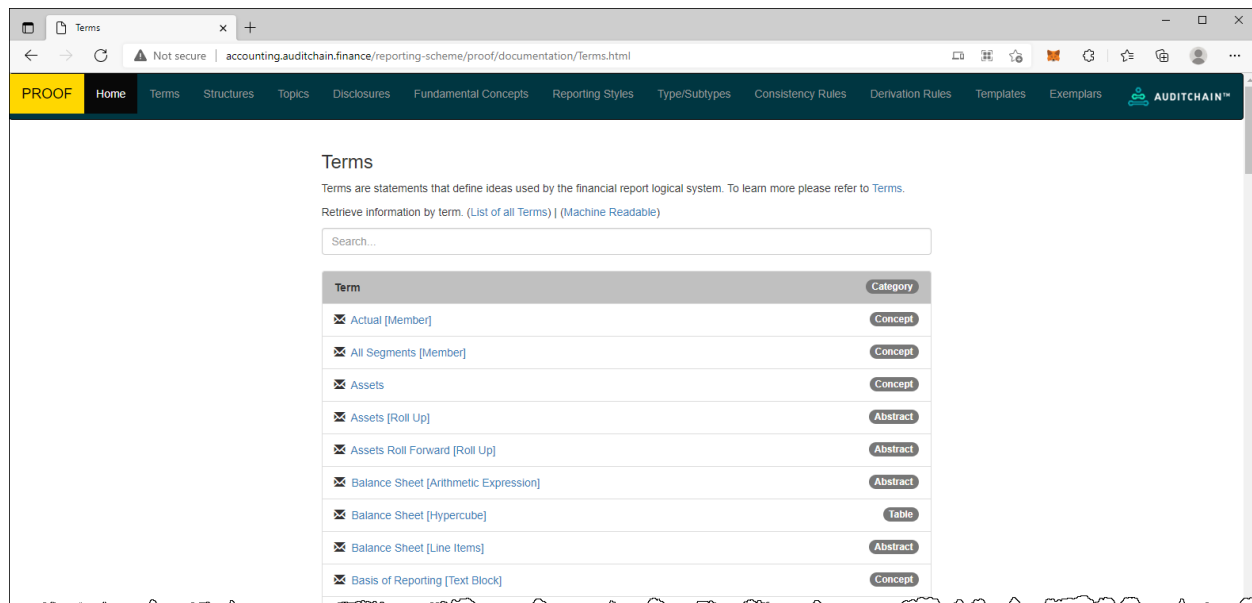
If you look at each of the Excel spreadsheets from the set of files you downloaded for the PROOF Tutorial, you will notice that information in those Excel spreadsheets is the same as what you see in the HTML page that you see above and the enhanced information for the full financial reporting scheme. The report that you will be creating does not define any report element of it's own; all of the report elements are referenced from taxonomy, *PROOF Financial Reporting Scheme*, which is the base XBRL taxonomy of the report we are creating.

So, the PROOF Financial Reporting Scheme is acting similar to the base XBRL taxonomies for US GAAP or IFRS. It is small and contains fewer report elements, labels, references, structures, and associations; but the ideas are exactly the same. We are simply keeping our example small to help you understand the basic ideas of XBRL-based financial reports.

However, we are including every information pattern that you would ever run into when creating any US GAAP or IFRS based financial report. The idea of the PROOF Financial Reporting Scheme is to (a) test every information pattern and (b) test the interaction between each information pattern to make sure the report behaves logically.

Explore the PROOF Financial Reporting Scheme pieces. Consider modifying the Excel import spreadsheets to create a different report. Or, maybe just change the fact value of the report itself.

Notice something as you explore. Notice that the PROOF Financial Reporting Scheme itself does provide hypercubes in the definition of the financial reporting scheme. And the report we are creating does make use of those hypercubes.

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[12] PROOF Financial Reporting Scheme, http://accounting.auditchain.finance/reporting-scheme/proof/documentation/Terms.html

If you are curious and need to explore hypercubes in more detail now, please refer to the document *Representing Structures*[13] in *Mastering XBRL-based Digital Financial Reporting*[14]. That is enough about hypercubes for now, let's move on.

Note that Luca does not currently have an interface for reading base taxonomies or creating things like associations with report elements. That functionality will be added eventually. A lot more functionality will be added[15]. Be patient, we want to get the foundation right.

Don't worry about this any more than we have mentioned right now. We will dive into this in much more detail in another tutorial.

Good job, we imported the base information and you can see what a base taxonomy looks like. Let's import everything else.

Step 3: Import Terms information.

Import the base information: (proof-terms.xlsx)

Category	StandardLabel	Prefix	ReportElementName	DataType	BalanceType	PeriodType
Hypercube	Balance Sheet [Hypercube]	proof	BalanceSheetHypercube			
LineItems	Balance Sheet [Line Items]	proof	BalanceSheetLineItems			
Abstract	Balance Sheet [Arithmetic]	proof	BalanceSheetSet			
Concept	Assets	proof	Assets	Monetary	Debit	Instant
Concept	Liabilities	proof	Liabilities	Monetary	Credit	Instant
Concept	Equity	proof	Equity	Monetary	Credit	Instant
Hypercube	Comprehensive Income	proof	ComprehensiveIncomeStatementHypercube			
LineItems	Comprehensive Income	proof	ComprehensiveIncomeStatementLineItems			
Abstract	Comprehensive Income [Roll Up]	proof	ComprehensiveIncomeRollUp			
Concept	Revenues	proof	Revenues	Monetary	Credit	Duration
Concept	Expenses	proof	Expenses	Monetary	Debit	Duration

The PROOF taxonomy has 57 terms (a.k.a. report elements). Each of those terms will be either a: Hypercube, Dimension, Member, LineItems, Abstract or Concept.

Step 4: Import Labels information.

Import the base information: (proof-labels.xlsx)

Term	Language	LabelRole	Label
proof:Expenses	en	Negated	(Expenses)
proof:Losses	en	Negated	(Losses)
proof:Equity	en	PeriodStart	Equity, Beginning Balance
proof:Equity	en	PeriodEnd	Equity, Ending Balance
proof:DistributionsToOwners	en	Negated	(Distributions to Owners)
proof:Assets	en	Documentation	Assets are probable future economic beneits obtained or controlled by a particular entity as a result of past transactions or events.
proof:Equity	en	Documentation	Equity or net assets is the residual interest in the assets of an entity that remains after deducting its liabilities. In a business enterprise, the equity is the ownership interest.
proof:Liabilities	en	Documentation	Liabilities are probable future sacrifices of economic benefits arising from present obligations of a particular entity to transfer assets or provide services to other entities in the future as a result of past transactions or events.

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[13] *Representing Structures*, http://www.xbrlsite.com/mastering/Part02_Chapter05.H_RepresentingStructuresUsingHypercubes.pdf

[14] *Mastering XBRL-based Digital Financial Reporting*, http://xbrl.squarespace.com/mastering-xbrl/

[15] Recommender Systems, http://xbrl.squarespace.com/journal/2021/9/19/recommender-systems.html

Step 5: Import References information.

Import the base information: (proof-references.xlsx)

ReportElementName	ReferenceRole	Publisher	Name	Number	Paragraph	URI	URIDate	Sequence
proof:ActualMember	Standard	TEST	Test	1	1	http://xbrlsite.azurewebsites.net/2021/library/reference.html	2021-02-14	1
proof:AllSegmentsMember	Standard	TEST	Test	1	1	http://xbrlsite.azurewebsites.net/2021/library/reference.html	2021-02-14	2
proof:Assets	Standard	TEST	Test	1	1	http://xbrlsite.azurewebsites.net/2021/library/reference.html	2021-02-14	3
proof:AssetsRollForward	Standard	TEST	Test	1	1	http://xbrlsite.azurewebsites.net/2021/library/reference.html	2021-02-14	4
proof:AssetsRollUp	Standard	TEST	Test	1	1	http://xbrlsite.azurewebsites.net/2021/library/reference.html	2021-02-14	5
proof:BalanceSheetHypercube	Standard	TEST	Test	1	1	http://xbrlsite.azurewebsites.net/2021/library/reference.html	2021-02-14	6
proof:BalanceSheetLineItems	Standard	TEST	Test	1	1	http://xbrlsite.azurewebsites.net/2021/library/reference.html	2021-02-14	7
proof:BalanceSheetSet	Standard	TEST	Test	1	1	http://xbrlsite.azurewebsites.net/2021/library/reference.html	2021-02-14	8
proof:BasisOfReportingTextBlock	Standard	TEST	Test	1	1	http://xbrlsite.azurewebsites.net/2021/library/reference.html	2021-02-14	9

References are defined for each report element only as a test of references.

Step 6: Import Structures information.

Import the base information: (proof-structures.xlsx)

NetworkIdentifier	NetworkTitle	Sequence
BalanceSheet	01-Balance Sheet	1
ComprehensiveIncome	02-Comprehensive Income	2
ChangesInEquity	03-Changes in Equity	3
PriorPeriodErrors	04-Prior Period Errors	4
VarianceAnalysis	05-Variance Analysis	5
StockPlanActivity	06-Stock Plan Activity	6
FinancialHighlights	07-Financial Highlights	7
Policies	08-Policies	8
SegmentRevenues	09-Segment Revenues	9

Step 7: Import Associations information.

Import the base information: (proof-associations.xlsx)

StructureType	NetworkIdentifier	AssociationFromName	AssociationRole	AssociationToName	CalculationPolarity	PreferredLabelRole	Sequence
Presentation	BalanceSheet	proof:BalanceSheetHypercube	Parent-Child	proof:BalanceSheetLineItems			1
Presentation	BalanceSheet	proof:BalanceSheetLineItems	Parent-Child	proof:BalanceSheetSet			2
Presentation	BalanceSheet	proof:BalanceSheetSet	Parent-Child	proof:Assets			3
Presentation	BalanceSheet	proof:BalanceSheetSet	Parent-Child	proof:Liabilities			4
Presentation	BalanceSheet	proof:BalanceSheetSet	Parent-Child	proof:Equity			5
Definition	BalanceSheet	proof:BalanceSheetLineItems	RootMember-Member	proof:Assets			1
Definition	BalanceSheet	proof:BalanceSheetLineItems	Member-Member	proof:Liabilities			2
Definition	BalanceSheet	proof:BalanceSheetLineItems	Member-Member	proof:Equity			3
Definition	BalanceSheet	proof:BalanceSheetLineItems	LineItems-Hypercube	proof:BalanceSheetHypercube			4
Presentation	ComprehensiveIncome	proof:ComprehensiveIncomeStatementHypercube	Parent-Child	proof:ComprehensiveIncomeStatementLineItems			11
Presentation	ComprehensiveIncome	proof:ComprehensiveIncomeStatementLineItems	Parent-Child	proof:ComprehensiveIncomeRollUp			12

Step 8: Import Rules information.

Import the base information: (proof-rules.xlsx)

Consistency (a.k.a. Arithmetic) and Roll Forward rules:

RuleType	RuleCode	Rule	Structure	Concept	Sequence	Commentary
ConsistencyRule	BS01	$Assets = ($Liabilities + $Equity)	BalanceSheet	proof:Assets	1	
ConsistencyRule	IS01	$ComprehensiveIncome = ($Revenues - $Expenses + $Gains - $Losses)	ComprehensiveIncome	proof:ComprehensiveIncome	2	
RollForwardRule	SHE01	$Equity_BalanceStart + $ComprehensiveIncome + $InvestmentsByOwners - $DistributionsToOwners = $Equity_BalanceEnd	ChangesInEquity	proof:Equity	3	

Member aggregation rules:

RuleType	RuleCode	Rule	Structure	Concept	Dimension	Sequence	Commentary
MemberAggregationRule	MA1	$Total eq sum($Each)	SegmentRevenues	proof:Revenues	proof:SegmentsAxis	1	

Variance rules:

RuleType	RuleCode	Rule	Structure	Concept	Dimension	MemberActual	MemberBudget	MemberVariance	Sequence	Commentary
VarianceRule	VAR01_Revenues	$Actual = ($Budget + $Variance)	VarianceAnalysis	proof:Revenues	proof:ScenarioAxis	proof:ActualMember	proof:BudgetedMember	proof:VarianceMember	1	
VarianceRule	VAR02_Expenses	$Actual = ($Budget + $Variance)	VarianceAnalysis	proof:Expenses	proof:ScenarioAxis	proof:ActualMember	proof:BudgetedMember	proof:VarianceMember	2	
VarianceRule	VAR03_Gains	$Actual = ($Budget + $Variance)	VarianceAnalysis	proof:Gains	proof:ScenarioAxis	proof:ActualMember	proof:BudgetedMember	proof:VarianceMember	3	
VarianceRule	VAR04_Losses	$Actual = ($Budget + $Variance)	VarianceAnalysis	proof:Losses	proof:ScenarioAxis	proof:ActualMember	proof:BudgetedMember	proof:VarianceMember	4	
VarianceRule	VAR05_ComprehensiveIncome	$Actual = ($Budget + $Variance)	VarianceAnalysis	proof:ComprehensiveIncome	proof:ScenarioAxis	proof:ActualMember	proof:BudgetedMember	proof:VarianceMember	5	

Adjustment rules:

RuleType	RuleCode	Rule	Structure	Concept	Dimension	MemberPrior	MemberCurrent	Sequence	Commentary
AdjustmentRule	ADJ01	$Restated = ($OrigionallyStated + $CorrectionOfAnError + $ChangesInAccountingPolicy)	PriorPeriodErrors	proof:Equity	proof:ReportDateAxis	proof:PriorReportMember	proof:CurrentReportMember	1	

Nonstandard rules:

RuleType	RuleCode	Rule	Sequence	Commentary

NonstandardRule	NA01	`<generic:link xlink:type='extended' xlink:role='http://www.xbrlsite.com/sfac6/role/NetAssets'>`
		  `<va:valueAssertion xlink:type='resource' xlink:label='ASSERTION'`
		   `id='Arithmetic_NA01'`
		   `aspectModel='dimensional'`
		   `implicitFiltering='true'`
		   `test='$NetAssets = ($Assets - $Liabilities)' />`
		  `<generic:arc xlink:type='arc' xlink:arcrole='http://xbrl.org/arcrole/2008/element-label'`
		   `xlink:from='ASSERTION'`
			1	

NonstandardRule	IS01	`<generic:link xlink:type='extended' xlink:role='http://www.xbrl.org/2003/role/link'>`
		  `<va:valueAssertion xlink:type='resource' xlink:label='LABEL_ASSERTION'`
		   `id='IS01'`
		   `aspectModel='dimensional'`
		   `implicitFiltering='true'`
		   `test='0= (($Equity_BalanceStart + (($Revenues - $Expenses) + ($Gains - $Losses)) + ($InvestmentsByOwners -`
		`$DistributionsToOwners)) + ($Liabilities_BalanceEnd - $Assets_BalanceEnd))' />`
		  `<generic:arc xlink:type='arc' xlink:arcrole='http://xbrl.org/arcrole/2008/element-label'`
			2	

Notice that currently only two types of rules are supported for import: ConsistencyRules and RollForwardRules. Importing the other categories of rules is a work in progress.

Step 9: Import Facts information.

Import the base information: (proof-facts.xlsx)

ReportingEntityAspect	CalendarPeriodAspect	ConceptAspect	FactValue	Units	Rounding	FactID	Sequence
GH259400TOMPUOLS65II | http://standards.iso.org/iso/17442	2020-12-31	proof:Assets	3500	iso4217:USD	INF	FACT01	1
GH259400TOMPUOLS65II | http://standards.iso.org/iso/17442	2020-12-31	proof:Liabilities	0	iso4217:USD	INF		2
GH259400TOMPUOLS65II | http://standards.iso.org/iso/17442	2020-12-31	proof:Equity	3500	iso4217:USD	INF		3
GH259400TOMPUOLS65II | http://standards.iso.org/iso/17442	2020-01-01 | 2020-12-31	proof:Revenues	7000	iso4217:USD	INF		4
GH259400TOMPUOLS65II | http://standards.iso.org/iso/17442	2020-01-01 | 2020-12-31	proof:Gains	1000	iso4217:USD	INF		5
GH259400TOMPUOLS65II | http://standards.iso.org/iso/17442	2020-01-01 | 2020-12-31	proof:Expenses	3000	iso4217:USD	INF		6
GH259400TOMPUOLS65II | http://standards.iso.org/iso/17442	2020-01-01 | 2020-12-31	proof:Losses	2000	iso4217:USD	INF		7
GH259400TOMPUOLS65II | http://standards.iso.org/iso/17442	2020-01-01 | 2020-12-31	proof:ComprehensiveIncome	3000	iso4217:USD	INF		8
GH259400TOMPUOLS65II | http://standards.iso.org/iso/17442	2019-12-31	proof:Assets	0	iso4217:USD	INF		9

Import the dimensions for facts: (proof-dimensions.xlsx)

FactID	Dimension	Member	Sequence
FACT14	proof:ScenarioAxis	proof:BudgetedMember	1
FACT15	proof:ScenarioAxis	proof:BudgetedMember	2
FACT16	proof:ScenarioAxis	proof:BudgetedMember	3
FACT17	proof:ScenarioAxis	proof:BudgetedMember	4
FACT18	proof:ScenarioAxis	proof:BudgetedMember	5
FACT19	proof:ScenarioAxis	proof:VarianceMember	6
FACT20	proof:ScenarioAxis	proof:VarianceMember	7
FACT21	proof:ScenarioAxis	proof:VarianceMember	8
FACT22	proof:ScenarioAxis	proof:VarianceMember	9
FACT23	proof:ScenarioAxis	proof:VarianceMember	10
FACT29	proof:SegmentsAxis	proof:SegmentAlphaMember	11
FACT30	proof:SegmentsAxis	proof:SegmentBravoMember	12
FACT31	proof:SegmentsAxis	proof:SegmentCharlieMember	13
FACT32	proof:PriorReportMember	proof:PriorReportMember	14

Import the parenthetical information for facts: (proof-parenthetical.xlsx)

FactID	FootnoteID	Parenthetical	Sequence
FACT01	FOOTNOTE01	This is footnote #1 that goes with fact #1	1
FACT01	FOOTNOTE02	This is footnote #2 that goes with fact #1	2
FACT01	FOOTNOTE03	This is footnote #3 that goes with fact #1	3

NOTE that currently fact dimensions and fact parenthetical explanations import or manual entry are not supported.

Step 10: Generate Report (your XBRL taxonomy schema, XBRL linkbases, and XBRL instance)

You have successfully imported everything. Now, we will generate the report model and the report.

To do that, from the main form press the green "Generate report" button on the left side and you will see:

You could download each individual file by pressing the appropriate button on the left side for the file, then the "Download file" button in the lower right hand corner.

Alternatively, press the "Download All" button at the bottom LEFT of the form to download a ZIP archive that contains all XBRL files generated. Alternatively on the RIGHT you can download each file individually.

Step 10: Verify the information output into that XBRL format.

Several XBRL files will be generated that contain the information that you entered into the Luca application. You can open these files using any XBRL tool.

For this example, I will show taking the ZIP archive of files downloaded, upload the files to verify the report and report model XBRL files created by Luca using XBRL Cloud's *CleanScore*[16] browser-based tool which generates an *Evidence Package* for humans to review such reports.

I have an account with XBRL Cloud, so I simply log into my account, create a subdirectory, and then upload the ZIP file that I received from Luca into that subdirectory:

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[16] XBRL Cloud, *CleanScore*, https://www.xbrlcloud.com/evidence-package.html

Here I have chosen the file to upload:

Here, the files have been uploaded:

I can do a quick check to see a summary report that lets me know if any issues were found with the XBRL-based report model or report:

XBRL Cloud Validation Report

Validation Summary

Severity		Signal	Count
	ERROR		0
	WARNING		0
	REVIEW		0
	INCONSISTENCY		0
	BEST_PRACTICE		0
	INFORMATION		0
	Total		0

No Validation Errors!

Or, I can get an Evidence Package that provides a human-readable view of the report: (I have provided a copy of this so you can download[17] the Evidence Package or view it online[18])

| Component Perspective | Overview Perspective |

Rendering

All Components (9)

01-Balance Sheet | Balance Sheet [Hypercube] ✓
Rendering | Model Structure | Fact Table
Business Rules | Combined

02-Comprehensive Income | Comprehensive Income Statement [Hypercube] ✓
Rendering | Model Structure | Fact Table
Business Rules | Combined

03-Changes in Equity | Changes in Equity [Hypercube] ✓
Rendering | Model Structure | Fact Table
Business Rules | Combined

04-Prior Period Errors | Prior Period Errors [Hypercube] ✓
Rendering | Model Structure | Fact Table
Business Rules | Combined

05-Variance Analysis | Variance Analysis [Hypercube] ✓
Rendering | Model Structure | Fact Table
Business Rules | Combined

06-Stock Plan Activity | Weighted Average Grant Date Fair Value [Hypercube] ✓
Rendering | Model Structure | Fact Table
Business Rules | Combined

07-Financial Highlights | Financial Highlights [Hypercube] ✓
Rendering | Model Structure | Fact Table
Business Rules | Combined

08-Policies | Policies [Hypercube] ✓
Rendering | Model Structure | Fact Table
Business Rules | Combined

09-Segment Revenues | Segment Revenues [Hypercube] ✓
Rendering | Model Structure | Fact Table
Business Rules | Combined

Component: (Network and Table)

Network	01-Balance Sheet (http://www.xbrlsite.com/role/BalanceSheet)
Table	Balance Sheet [Hypercube]

Slicers (applies to each fact value in each table cell)

| Reporting Entity [Axis]	GH259400TOMPUOLS65II (http://standards.iso.org/iso/17442)

Balance Sheet [Line Items]	Period [Axis] 2020-12-31	2019-12-31
Balance Sheet [Arithmetic Expression]		
Assets	3,500 [1]	0 [1]
Liabilities	0	0
Equity	3,500	0

1: This is a test parenthetical explanation.

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[17] XBRL Cloud Evidence Package Download, http://xbrlsite.azurewebsites.net/2021/Luca/proof/evidence-package.zip

[18] XBRL Cloud Evidence Package available online, http://xbrlsite.azurewebsites.net/2021/Luca/proof/evidence-package

Alternatively, you can download the open source XBRL processor GUI Arelle[19] and use that to verify the XBRL-based financial report you created using Luca:
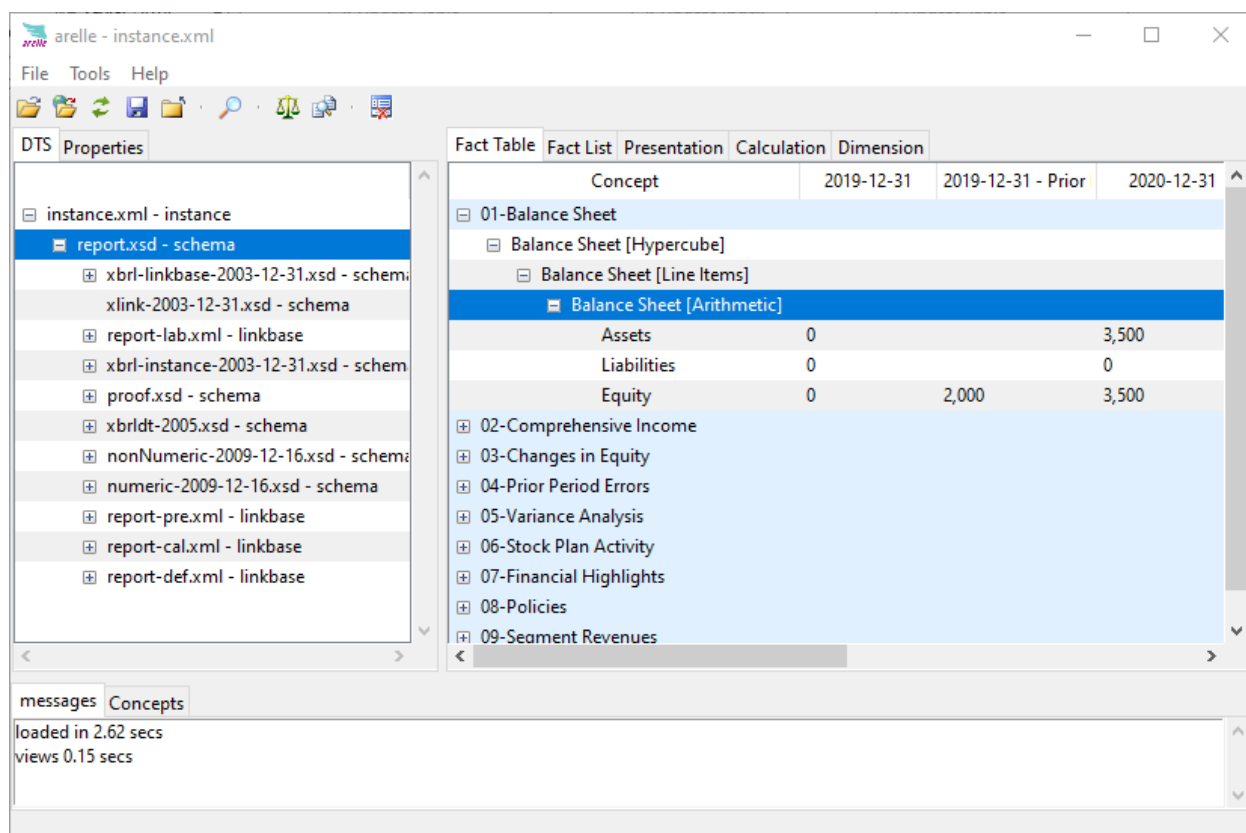
Arelle is a bit technical oriented…ok, well; it is quite technical oriented. It does most of what you need, but you have to invest in learning how to use the tool effectively. The price is good (i.e. free).

Step 11: Viewing Report and Report Model.

Next, you can view the report model and report you created using the free working proof of concept Pesseract[20]. You can download and use Pesseract free for non-commercial purposes. Contact me (Charles.Hoffman@me.com) and ask me for a license and I will send you a license. This application does require Windows 7 or 10. Pesseract does some XBRL syntax verification, but it is not yet a fully conformant XBRL processor.

Here is what the report and the report model look like in Pesseract:

---

[19] Arelle Download, https://arelle.org/arelle/pub/
[20] Pesseract, http://pesseract.azurewebsites.net/

Report:

Report model:

Information Blocks

Every report is comprised of "blocks" of information. An information block is a set of facts that go together for some logical purpose. The PROOF has 11 information blocks. Each information block is either a disclosure or a fragment of a disclosure. For example, the "Comprehensive Income [Roll Up]" is an information block that represents a roll up of comprehensive income:

Every piece of an XBRL-based digital financial report can be explained this way.

Pacioli Power User Tool Verification

We created our report, every validator said the report looks good (i.e. there are no inconsistencies that are being pointed out by XBRL Cloud, Arelle, or Pesseract. But let's run the report through the Pacioli Power User Tool verification process and see what happens. In order to run Pacioli at this time, I need to upload the files that were created using Luca to my website, which I did. Here is the XBRL instance[21].

I go to the Pacioli Power User Tool[22], and I paste in the following verification script:

% PROOF Financial Report %
checkReport3("http://xbrlsite.azurewebsites.net/2021/Luca/proof/instance.xml",
[], [extendedJSON, cacheValidity(3600)], Result).

I execute that script in Pacioli, and I see the following:

Power User Tool

To submit a report to Pacioli and obtain its analysis use `checkReport3(ReportURL,ExtraResources,Options,ResultLink)`:

```
≡ ?-  % PROOF Financial Report %
      checkReport3("http://xbrlsite.azurewebsites.net/2021/Luca/proof/instance.xml",
      [], [extendedJSON, cacheValidity(0)], Result).
```

```
Setting module 3a506dcc-ea1d-4b83-a932-0aec9a68dce0
Preliminaries... (10%)
Loading report... (15%)
Deriving facts... (40%)
Detecting and verifying disclosures... (45%)
Checking value assertions... (50%)
Checking calculations... (60%)
Rendering... (70%)
Result =
                              Go to report analysis :-)
                                                            0.956 seconds cpu time
```

You can see by the smiley face and the GREEN bar on the left side that the report is consistent with all expectations. I click on "Go to report analysis" and I see the following: (Note that the URL below will work until November 10, 2021)

https://pacioli.auditchain.finance/reportAnalysis/0b5c9ba2aac51f7571a5e6644f416bb3947a893b.report/index.html

Table of Contents

		TERMS		
		Mappings		
		All FACTS (technical listing)		
		Type-subtype graph		
		Type-subtype table		
1	01-Balance Sheet	Structures	Facts	Pivots
2	02-Comprehensive Income	Structures	Facts	Pivots
3	03-Changes in Equity	Structures	Facts	Pivots
4	04-Prior Period Errors	Structures	Facts	Pivots
5	05-Variance Analysis	Structures	Facts	Pivots
6	06-Stock Plan Activity	Structures	Facts	Pivots
7	07-Financial Highlights	Structures	Facts	Pivots
8	08-Policies	Structures	Facts	Pivots
9	09-Segment Revenues	Structures	Facts	Pivots
		Graph of reasoning		
		Blocks		
		Blocks Graph		
	All Rules	Calculations		
		Messages		

Messages

NONE.

Method

But how to we know if we have created a complete XBRL-based digital financial report? If we leave out one or more verification rules, the fact that the rules are missing means that (a) the rule cannot be used to automatically check the report and report model and (b) if there is some sort of inconsistency or contradiction; our processes will not detect and report the mistake.

That is what my *Method*[23] is all about. What other things should you be looking for? That is the subject for another tutorial…so keep going.

Some Final Thoughts

As professional accountants, we are responsible for creating true and fair representations of financial information, be that information in human readable form or machine readable form. When you have a report in machine readable form, if you have machine readable rules you can check the report to be sure it is a properly functioning logical system.

Your next step is to try the **METHOD Tutorial**.

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[23] Method, http://accounting.auditchain.finance/framework/MethodOverview.pdf