Kyubit Business Intelligence – Self-Service BI



# **Kyubit Self-Service BI**

©2018 Kyubit, All rights reserved

www.kyubit.com

### Contents

1.	Kyubi	it Self-Service BI Concepts
	1.1.	Self-Service Data Models
	1.2.	Self-Service Data Analysis & Visualization3
2.	Kyubit S	elf-Service BI Overview
	2.1.	End-user experience
	2.2.	How it works5
	2.3.	Pros
	2.4.	Limitations5
3.	Step	-by-step Self-Service BI6
	3.1.	Create Analytic Model from CSV file6
	3.2.	Create Analytic Model from Query results8
	3.3.	Data Definition
	3.4	Organize Structures Additionally
	3.5.	Processing of Analytic Model
	3.6.	Usage in Analysis and Dashboards

## 1. Kyubit Self-Service BI Concepts

### 1.1. Self-Service Data Models

Kyubit BI software provides features and tools to quickly create data models (Analytic Models) in Kyubit application from the data stored in CSV files or SQL query results, by the regular end-user without involvement of BI professionals or third-party analytic software modules or special databases (OLAP). Such Self-Service Analytic Models can be used to create data analysis, reports, KPIs and dashboards by the same regular end-user with drag-and-drop and other user-friendly actions in the Kyubit application. In other word, Kyubit BI application provides all what it takes for a regular end-user to build data models for analysis and data visualization. Data models (Analytic Models) consist of the Measures, Dimensions, Hierarchies and Details that are used while analyzing prepared model in analysis grid/chart view or preparing insights on the dashboard. While preparing data to create new Analytic Model, source data needs to be organized in rows and columns. Later in the process, user defines Analytic Model structure by defining which column contains values for model structures like measures, dimensions or details to complete the final Analytic Model processing.

### 1.2. Self-Service Data Analysis & Visualization

Once Self-Service data model (Analytic Models) is created in Kyubit BI application, same user as well as other authorized users can quickly create data analysis, charts and reports based on the same 'Analytic Model' with simple and comprehensive approach (**drag-and-drop**) that does not require special skills or training. Furthermore, created analysis/report could be used while creating dashboard charts, tables and KPIs, to **visualize prepared data insights by the regular end-user**. Kyubit BI includes features to quickly design dashboard layout by drag-and-drop various charts, connecting with previously prepared queries or analyses, positioning and resizing dashboard elements, setting display options for individual dashboard element and setting overall dashboard style.

## 2. Kyubit Self-Service BI Overview

Kyubit 'Analytic Model' is a Self-Service BI analytic feature that could be quickly utilized using your data from **CSV files** and **SQL query results**, without creating OLAP cubes. With analytic models, end-user can create pivot tables, analytic reports and dashboards, using measures, dimensions, slicers and many features similar to OLAP analysis.

In many situations you have a set of data you wish to analyze, but you probably will not engage creating OLAP cubes, which almost always requires knowledge, time, tools, etc. With Kyubit Self-Service BI, end-user can quickly import and configure **Analytic Models**, which behaves almost like you have OLAP cubes ready for analysis. Set of values from CSV files or query results is transformed to analytic models and Self-Service BI tools are ready for all Kyubit users to use them in analysis and dashboards, while values from the same data sources could be scheduled to update regularly with new values based on our preference.



### 2.1. End-user experience

After Kyubit Self-Service BI 'Analytic Model' is processed, authorized end-users can start analysis, that will look the same as if they are analyzing OLAP cube structures (very similar). End-users can create analysis, reports and create dashboards based on created analysis the same way they are doing with OLAP based analyses. Most features, like **drill-down**, **drill-through**, **expanding**, **slicing**, **ordering**, **isolating** are included in Analytic model analysis.

### 2.2. How it works

After you import your data from CSV files or SQL query Results and process 'Analytic Model', Kyubit creates special structures in Kyubit internal **"KyubitAnalyticModels" SQL database**, that are suitable for quick analytic SQL queries. While analyzing data Kyubit is creating SQL queries to bring analytic results from Kyubit Analytic Models database. In other words, Kyubit is using SQL technology, combined with **ColumnStore indexes** and some **smart caching** to bring data analysis. Only technology prerequisite is MS SQL Server, which is prerequisite for the whole product anyway.

### 2.3. Pros

- Main reason to use 'Analytic Model' is for regular user to quickly add set of data for analysis, dashboard usage, scheduled subscriptions and sharing with other users.
- CSV data format should be friendly to all users while preparing data to be used. Any set of data could be exported from Excel to CSV file (semicolon (;) delimited).
- Great usage of Date filters (if data contains date values) that are much friendlier to be used than OLAP 'date' structures. Quickly select absolute or relative date filter values in analysis, report or dashboard filters.

### 2.4. Limitations

There are limitations to Kyubit Self-Service BI 'Analytic Model' usage, that should be known before using new Kyubit technology. Kyubit Analytic Model is not created in mind to replace more serious analytic engines, like OLAP technology, but to bring simple solution for smaller data sets that should be analyzed quickly with very little knowledge of data analysis and structures.

- 'Analytic Model' will perform great with hundreds of thousands of rows of data, while we would not
  recommend to be used with millions of rows of data. This question greatly depend on the hardware on
  which SQL server is running, but millions of rows of data should be used with in-any-case more robust and
  scalable OLAP technology.
- There are no limitations to number of category members (rows) in grid analysis and reports, while analytic
  grid and report can contain maximum of 128 series (columns) of values in analysis for each measure in
  analysis.
- On category axis there could be multiple category levels expanding (drill-down) to explore data in more details, while series members cannot be expanded.

## 3. Step-by-step Self-Service BI

### 3.1. Create Analytic Model from CSV file

Data stored in CSV file, delimited by **semicolon** (;), can be quickly uploaded to Kyubit application and immediately is ready for the step of 'Data Definition'.

Numeric and date values in CSV file should respect current Kyubit BI server regional settings format for decimal separator and date format.

• Prepare CSV file based on the columns and rows that contains data for analysis. If data is in Excel file, convert to CSV with semicolon (;) delimiter.

	Α	В	С	D	E	F	G	н	I.	J	К	L
1	id	First Name	Last Name	Purchase Date	Purchase	Tax Amount	Gender	Car Make	Car Model	Color	City	Country
2	1	Ermina	Brickdale	20.1.2019	48683.44	1927.06	Female	Mazda	Tribute	Fuscia	Moguqi	China
3	2	Nickola	Murby	23.2.2019	15564.3	6573.3	Male	Hyundai	Elantra	Purple	Talzemt	Morocco
4	3	Corrinne	Bassindale	26.5.2018	67601.23	5412.56	Female	Dodge	Charger	Aquamari	General L	Argentin
5	4	Glad	Lohrensen	11.1.2019	17574.75	9085.54	Female	Lexus	ES	Orange	Autun	France
6	5	Abrahan	Perrigo	12.10.2017	93206.57	3044.03	Male	Plymouth	Laser	Goldenro	Suwałki	Poland
7	6	Karina	Broomhall	27.1.2018	85168.14	5286.2	Female	Lincoln	Mark VIII	Maroon	Kirzhach	Russia
8	7	Justin	Buntin	1.5.2018	60285.55	2937.16	Male	Volkswag	Scirocco	Indigo	Centralni	Russia
9	8	Brit	Shortcliffe	6.6.2018	10086.66	3320.71	Male	Saab	9-7X	Orange	Skore	Albania
10	9	Ashleigh	Higgan	20.6.2017	57225.54	1341.04	Female	Volkswag	Fox	Pink	Zhengyu	China
11	10	Boote 📋 CSVT	est.csv - Notepad								- 0	×
12	11	Woodn File Edit	Format View H	leln								
13	12	Renaul id Firs	t Name last Na	me·Purchase	Date:Pur	chase Price	·Tax Am	ount Ger	der:Car Make:Car Mo	del·Colo	r.Citv.C	ounti 🛆
14	13	Porter 1;Ermin	a:Brickdale:20	.1.2019:4868	3.44:192	7.06:Female	:Mazda:	Tribute:	Fuscia:Moguqi:China	:2001:eb	rickdale	Oato
15	14	Jeannie 2;Nicko	la;Murby;23.2.	2019;15564.3	;6573.3;	Male;Hyunda	; i;Elant	ra;Purpl	le;Talzemt;Morocco;2	011;nmur	by1@cons	tant
16	15	Leshia 3;Corri	.nne;Bassindale	;26.5.2018;6	7601.23;	5412.56;Fem	ale;Dod	lge;Charg	ger;Aquamarine;Gener	al Laval	le;Argen	tina
17	16	Randy 4;Glad;	Lohrensen;11.1	.2019;17574.	75;9085.	54;Female;L	exus;ES	;Orange;	Autun;France;2009;g	lohrense	n3@buzzf	eed.(
18	17	Riccard 5;Abrah	an;Perrigo;12.	10.2017;9320	6.57;304	H4.03;Male;P	lymouth	;Laser;0	Goldenrod;Suwałki;Po	land;199	0;aperri	go4@c
19	18	Teresa 6;Karin	a;Broomhall;27	.1.2018;8516	8.14;528	36.2;Female;	Lincoln	;Mark VI	<pre>[II;Maroon;Kirzhach;</pre>	Russia;1	995;kbro	omha:
20	19	Felizio 7; Justi	.n;Buntin;1.5.2	018;60285.55	;2937.16	;Male;Volks	wagen;S	cirocco;	Indigo;Centralniy;R	ussia;19	87;jbunt	in6@
21	20	Claibor 0, Achle	Shortcliffe;6.	6.2018;10086	.66;3326	0./1;Male;Sa	ab;9-7X	;Urange;	Skore;Albania;2005;	1002.abi	1tte/@us	atoda
22	21	Timoth 10.Boot	e.D'Antonio:8	12 2017;57225	3 96.528	28 26·Male;	ond.Thu	igen; Fox; indenhind	Pink;Znengyu;China; Puce·Bibinie·Cnoat	1992;ani	bdantoman	0900
23	22	Lonni 11.Wood	man·Mehs·7 8 2	017.90453 63	.7883 14	L·Male·GMC·Y	ukon Gr	een Plea	sant Point:New 7eal	and . 2005	·wmehsa@	fc2 (
24	23	Debor 12;Rena	ult:Awton:24.1	.2019:79521.	5:5063.2	9:Male:Suzu	ki:Gran	nd Vitara	;Khaki;Nanling;Chin	a:1999:r	awtonb@s	ource
25	24	Roland 13; Port	er;Lightwing;4	.5.2019;7370	3.61;702	0.95;Male;T	oyota;S	Sienna;Pu	urple;Villeneuve-d'A	scq;Fran	ce;2012;	pligł
26	25	Aindre 14; Jean	nie;De Courtne	y;8.4.2019;5	3501.39;	4835.19;Fem	ale;GMC	;Yukon X	(L 1500;Maroon;Guayn	abo;Puer	to Rico;	2000
27	26	Florell, 15; Lesh	ia;Clifton;17.	7.2018;25006	.16;3508	3.76;Female;	Mazda;B	Series;	Purple;Tanjungrejo	Lor;Indo	nesia;19	91;10
28	27	Brewer 16;Rand	ly;Halpeine;2.1	0.2018;33424	.96;5442	2.23;Male;Ni	ssan;Qu	iest;Purp	ole;Nanshi;China;199	9;rhalpe	inef@may	oclin
29	28	Keen 17;Ricc	ardo;Djurisic;	2.7.2018;578	12.23;64	177.99;Male;	Mitsubi	lshi;Migh	nty Max Macro;Aquama	rine;Lab	ytnangi;	Russ:
30	29	Feodor 18; Tere	sa;Redparth;22	.3.2018;3561	.7.85;972	23.6/;⊦emale	;Buick;	LaCrosse	;Green;Somié;Camero	on;2005;	tredpart	hh@p(
31	30	Shanne 20, Clad	.zio;Silkston;2	6.3.2018;415	1 12.654	0.53:Male;C	nevrole	t; Iracke	er;Green;Cheremukhov	O;Kussia	;2002;†5	11K51
32	31	Stu 20;Clai	born;Finey;10.	12.2010;9944	84 67.65	12 60.Eomol	ubaru;F	•orester;	Violet;Santo Amaro; Nauv:Mansada:Philinn	inoc 100	;2011;CT Retaloid	ikoir
33	32	Mateld 22.1 on	i·Poste·28 9 2	018.27369 14	·7138 44	l·Female·Ren	tlev.Co	ntinent:	auv,narsaua,rniiipp 1 GT·Purnle·Huangii	ahu Chin	a·2010-1	noati
34	33	Abdel 23:Debo	or:Roz:14.3.201	9:17516.05:8	179.03:F	emale:Satur	n:VUE:T	eal:Port	land:United States:	2009:dro	zm@buz7f	eed.
35	34	Hayley 24;Rola	ind;Readshaw:19	.6.2018;1808	5.04;991	8.43;Male:M	azda;B-	Series F	lus;Violet;Krrabë:A	lbania:1	996;rrea	dshav
36	35	Josie 25;Aind	lrea;Pennaman;6	.4.2018;1897	5.19;734	4.49;Female	;Lambor	ghini;Di	lablo;Mauv;Cikondang	;Indones	ia;1991;	apeni
			ella;Finch;10.	4.2019;49614	.93;7732	.42;Female;	Toyota;	Tacoma;T	eal;Kokologo;Burkin	a Faso;2	005;ffin	chp@
	<	27;Brew	er;McGorman;30	.1.2019;9510	8.95;825	54.29;Male;C	hevrole	t;Tahoe;	Pink;San Nicolás;Ho	nduras;1	995;bmcg	ormai 🗸
		1										<b>&gt;</b>

Ready

• Create new Analytic model, add some name, save it and then upload CSV file. Once uploaded, file is automatically saved to this model

Kyubit BusinessIntelligence	Analytic Model CSV Model			
A Home	General	Data	Structure	
🔛 Analyses 😂	Name	CSV Model		
🕫 Dashboards 🔗 😂	Description			
📄 Data Sources 🛛 😂	Input Type	CSV File	× ×	
AW AWPlay KyubitInternal	CSV File	CSVTest.csv UPLOAD	$\mathbf{P}$	
New OLAP data source New SQL data source New ODBC data source	Status	SAVE MODEL		
New Analytic Model		Find more information and	step-by-step tutorials on how to cre	ate, use and maintain Kyubit Ana

• After upload, select 'Data' tab to inspect sample data from CSV file. Creating analytic model is ready for next step of 'Data Definition' explained below.

	Dat	ta						
al d	12	12	<b>—</b>	al I	al	Ľ	12	Ľ
Measure 🔻	Dimension 🔻	Dimension <b>•</b>	Date 🔻	Measure 🔻	Measure 🔻	Dimension <b>•</b>	Dimension 🔻	Dimension 🔻
id	First Name	Last Name	Purchase Date	Purchase Price	Tax Amount	Gender	Car Make	Car Model
[Format Values]				[Format Values]	[Format Values]			
1	Ermina	Brickdale	20.1.2019	48683.44	1927.06	Female	Mazda	Tribute
2	Nickola	Murby	23.2.2019	15564.3	6573.3	Male	Hyundai	Elantra
3	Corrinne	Bassindale	26.5.2018	67601.23	5412.56	Female	Dodge	Charger
4	Glad	Lohrensen	11.1.2019	17574.75	9085.54	Female	Lexus	ES
5	Abrahan	Perrigo	12.10.2017	93206.57	3044.03	Male	Plymouth	Laser
6	Karina	Broomhall	27.1.2018	85168.14	5286.2	Female	Lincoln	Mark VIII
7	Justin	Buntin	1.5.2018	60285.55	2937.16	Male	Volkswagen	Scirocco
8	Brit	Shortcliffe	6.6.2018	10086.66	3320.71	Male	Saab	9-7X
9	Ashleigh	Higgan	20.6.2017	57225.54	1341.04	Female	Volkswagen	Fox
10	Boote	D'Antonio	8.12.2018	54923.96	5288.26	Male	Ford	Thunderbird
11	Woodman	Mebs	7.8.2017	90453.63	7883.14	Male	GMC	Yukon
12	Renault	Awton	24.1.2019	79521.5	5063.29	Male	Suzuki	Grand Vitara
13	Porter	Lightwing	4.5.2019	73703.61	7020.95	Male	Toyota	Sienna
14	Jeannie	De Courtney	8.4.2019	53501.39	4835.19	Female	GMC	Yukon XL 1500
15	Leshia	Clifton	17.7.2018	25006.16	3508.76	Female	Mazda	B-Series
16	Randy	Halpeine	2.10.2018	33424.96	5442.23	Male	Nissan	Quest
17	Riccardo	Djurisic	2.7.2018	57812.23	6477.99	Male	Mitsubishi	Mighty Max Macro
18	Teresa	Redparth	22.3.2018	35617.85	9723.67	Female	Buick	LaCrosse
19	Felizio	Silkston	26.3.2018	41550.7	2767.68	Male	Chevrolet	Tracker
20	Claiborn	Finey	10.12.2018	99441.13	6519.52	Male	Subaru	Forester
21	Timothea	Aloigi	18.12.2018	22584.67	6512.69	Female	Eagle	Talon
22	Lonni	Poate	28.9.2018	27369.14	7138.44	Female	Bentley	Continental GT
23	Debor	Roz	14.3.2019	17516.05	8179.03	Female	Saturn	VUE
24	Polond	Pondchaw	10 6 1010	10005 04	0010 / 0	Malo	Mazda	D Corios Plus

#### Analytic Model CSV Model

### 3.2. Create Analytic Model from Query results

If the data for analytic model are based on existing data from relational databases, create **SQL query** that will be used to retrieve data for new model. Any valid SQL query could be used to run against **SQL server** or **ODBC data sources** registered in Kyubit application.

• Under 'Data Sources' select New Analytic Model, change input type to 'Query', select data source for query and set query text. This query will be used to get data for this analytic model.



When query is defined, click on 'Run Query' button or 'Data' tab to get query sample results for inspection. • At the same time, analytic model creation is ready for 'Data Definition' step explained below.

General	Data	a Stru	cture					
at	al	al		Ľ,	Ľ,	Ľ,	Ľ.	比
Measure 🔻	Measure 🔻	Measure 🔻	Date 🔻	Dimension <b>T</b>	Dimension <b>T</b>	Dimension <b>T</b>	Dimension <b>v</b>	Dimension 🔻
ExtendedAmount	SalesAmount	ProductStandardCost	OrderDate	year	month	day	ModelName	Size
[Format Values]	[Format Values]	[Format Values]						
3578,2700	3578,2700	2171,2942	29.12.2010 0:00:00	2010	December	29	Road-150	6
3399,9900	3399,9900	1912,1544	29.12.2010 0:00:00	2010	December	29	Mountain-100	4
3399,9900	3399,9900	1912,1544	29.12.2010 0:00:00	2010	December	29	Mountain-100	4
699,0982	699,0982	413,1463	29.12.2010 0:00:00	2010	December	29	Road-650	e
3399,9900	3399,9900	1912,1544	29.12.2010 0:00:00	2010	December	29	Mountain-100	4
3578,2700	3578,2700	2171,2942	30.12.2010 0:00:00	2010	December	30	Road-150	4
3578,2700	3578,2700	2171,2942	30.12.2010 0:00:00	2010	December	30	Road-150	6
3374,9900	3374,9900	1898,0944	30.12.2010 0:00:00	2010	December	30	Mountain-100	4
3399,9900	3399,9900	1912,1544	30.12.2010 0:00:00	2010	December	30	Mountain-100	З
3578,2700	3578,2700	2171,2942	31.12.2010 0:00:00	2010	December	31	Road-150	4
3578,2700	3578,2700	2171,2942	31.12.2010 0:00:00	2010	December	31	Road-150	4
699,0982	699,0982	413,1463	31.12.2010 0:00:00	2010	December	31	Road-650	5
3578,2700	3578,2700	2171,2942	31.12.2010 0:00:00	2010	December	31	Road-150	5
3578,2700	3578,2700	2171,2942	31.12.2010 0:00:00	2010	December	31	Road-150	5
3578,2700	3578,2700	2171,2942	1.1.2011	2011	January	1	Road-150	5

### 3.3. Data Definition

When source for new analytic model is defined (CSV file or query), next step is to define **role** of **each column** in provided data set on the 'Data' tab. Possible definition for the columns are 'Measure', 'Dimension', 'Date' and 'Details'.

#### Measure

Measure is value from our data set that will be used for aggregations while analyzing analytic model. Typically, using Sum, Avg, Count and other aggregations. Measure has to be of **numeric values** in Kyubit Analytic Model.

#### Dimension

Dimension values are used to slice and analyze measure values, used in required context. Analytic results are based on measures and dimension members on categories and series.

#### Date

Date column could be used as filter in analysis. Because analyzing business data mostly include filtering based on certain period, this is extremely useful element for analysis. Date cannot be used on analysis categories and series.

#### Details

Some information from data set are not good analytic material to be used on analysis categories and series, but should only be available when asked for details of aggregated data. For example, information such are 'address' and 'phone number', we are hardly going to use as aggregating data, but still we like to use as 'Details' on aggregated results. Setting such columns as 'Details' ensures more compact analytic model, faster processing and smaller size on the disk.

Example data definitions...

J backlog 🔟 Ad	s 👝 Gibrive 🥤	Kyubit 😈 Pa	W WL W P	O V PER 🔨	Azure 🥁 Hosti	ng 🛶 Translate	Console oo		caj 📋 intell 🎙	Incubator	
nalytic Model Adventure Works	Analytic Mod	el									
General	Data	Str	ucture								
al		Ľ	Ľ	Ľ.	Ľ,	Ľ,	Ľ,	ρ	P	Ľ	
Measure 🔻	Date 🔹	Dimension <b>•</b>	Details 🔹	Details 🔹	Dimension •						
roductStandardCost	OrderDate	year	month	day	ModelName	Size	Color	FirstName	LastName	Gender	
\$#,#.## \$2.171,2	29.12.2010	2010	December	29	Road-150	62	Re	Cole	Watson	ħ	
\$1.912,15	0:00:00 29.12.2010	2010	December	29	Mountain-100	44	Silver	Rachael	Martinez		
\$1.912,15	0:00:00 29.12.2010	2010	December	29	Mountain-100	44	Silver	Sydney	Wright		
\$413,15	29.12.2010	2010	December	29	Road-650	62	Black	Ruben	Prasad	N	
\$1.912,15	29.12.2010	2010	December	29	Mountain-100	44	Silver	Christy	Zhu		
\$2.171,29	30.12.2010	2010	December	30	Road-150	44	Red	Colin	Anand	N	
\$2.171,29	30.12.2010	2010	December	30	Road-150	62	Red	Albert	Alvarez	N	
\$1.898,09	30.12.2010	2010	December	30	Mountain-100	48	Black	Julio	Ruiz	N	
\$1.912,15	30.12.2010 0:00:00	2010	December	30	Mountain-100	38	Silver	Curtis	Lu	1	
\$2.171,29	31.12.2010 0:00:00	2010	December	31	Road-150	48	Red	Edward	Brown	Ν	
\$2.171,29	31.12.2010 0:00:00	2010	December	31	Road-150	48	Red	Emma	Brown		
\$413,15	31.12.2010 0:00:00	2010	December	31	Road-650	52	Red	Brad	Deng	N	
\$2.171,29	31.12.2010 0:00:00	2010	December	31	Road-150	52	Red	Martha	Xu		
\$2.171,29	31.12.2010 0:00:00	2010	December	31	Road-150	56	Red	Katrina	Raji		
\$2.171,29	1.1.2011 0:00:00	2011	January	1	Road-150	56	Red	Courtney	Edwards		
\$2.171,29	1.1.2011 0:00:00	2011	January	1	Road-150	44	Red	Abigail	Henderson		
\$2.171,29	2.1.2011	2011	January	2	Road-150	62	Red	Sydney	Rogers		

Example usage of defined structures later in analysis.

			tic Model				
4 Analyses	T GRID	CHA	RT REPORT				
Adventure Works Analytic Mode	<b>T</b> Size [ 3	8, 40, 42, 44,	46, 48, 50, 52, 54, 56,	58, 60, 62, 70, L, M	, Null, S, X	]	
	T OrderDa	ate [2011-01	1-01 to 2014-01-01 ]				
Measures	Drop Filters	Here					
ExtendedAmount	Deadwet	Chan davel Care					
SalesAmount	Product	standarduos	t				
ProductStandardCost	Drop Measu	ures Here					
- 🖾 Default Dimension				- Gender 🔻			
🗂 OrderDate				F		M	Total
year	• Color 🔻	- ModelNa	ame 🔻	ProductStand	ardCost	ProductStandardCost	ProductStandardCost
month	+ Black			\$2.53	5.545,35	\$2.551.307,66	Σ \$5.086.853,01
day	- Blue		Touring-3000	\$7	1.984,64	\$55.834,24	Σ \$127.818,88
ModelName			Sport-100	\$1	3.825,56	\$12.896,88	Σ\$26.722,44
Size			Touring-1000	\$4	74.217,6	\$465.326,02	Σ \$939.543,62
Color			Classic Vest	Ş	6.124,92	\$6.504,76	Σ\$12.629,68
Condor			Touring-2000		\$151.030	\$129.885,8	Σ \$280.915,8
Gender	A Velleur		Total	Σ \$71	7.182,72	Σ \$670.447,7	Σ \$1.387.630,42
EnglishEducation	+ Silver			\$1.3	2 553 22	\$1.527.047,26	2 \$5.004.529,40
EnglishOccupation	+ Multi			91.40	39,415,1	\$38,880,13	Σ\$78.295.23
	* NA			\$7	6.926,44	\$78.137,2	Σ \$155.063,64
	* Red			\$2.34	8.619,92	\$2.326.646,08	Σ\$4.675.266
	+ White				\$883,68	\$940,8	Σ\$1.824,48
	Total			Σ \$8.68	8.408,63	Σ\$8.539.585,72	Σ\$17.227.994,35

#### **Column Caption and Description**

While defining data for analytic model, optionally click on the column name and set its caption (if should be different from source) and Column Description.

#### **Format Values**

Measure values should be provided as pure numeric value. To configure measure to be presented as formatted numeric value (Currency for example), click on the "Format values" below column name and choose one of the formatting options or write your own.

### 3.4 Organize Structures Additionally

When each column definition is defined, we can immediately proceed to Processing of Analytic Model, but on the third tab 'Structure' there are additional options to **organize analytic model** structures. Instead to leave all dimension levels in 'Default dimension', we can create new dimensions and organize levels appropriately to be **more comprehensive** for end-users.

#### **New Dimension**

Create new dimension based on some topic (for example, 'Customer' or 'Product') and assign appropriate analytic levels to this dimension. This way you group analytic levels to certain topic and makes analysis more comprehensive.

#### New Hierarchy

When analytic levels are related to each other in parent-child relation, it is practical to organize them inside 'Hierarchies'. For example, Year-Month-Day or Continent-Country-City. This way makes analysis easy to drilldown data from higher view to more detailed values for end-user.

#### Default structure.



#### Organized structure.



### 3.5. Processing of Analytic Model

While preparing analytic model, user can save and open same analytic model many times, which is in 'Unprocessed' status. When all data and structures are prepared, click the **Process Analytic Model** button on the 'Structure' tab to actually start processing of analytic model data and make it ready for analysis and visualizations. Process could take from **few seconds to several minutes** (or more) depending on number of rows and columns defined for analytic model. All columns not required to be 'Dimension' set to 'Details' structure type, which will speed processing and save space in the 'models' database.

#### Analytic Model Status

There are 3 analytic model status, **Unprocessed**, **Processing** and **Processed**. While analytic model is processing, it cannot be used by any user. If processing fails for any reason, it reverts to 'Unprocessed' status.

#### Log

After processing of analytic model, **details of processing** could be inspected by clicking on the 'Log' button in 'General' tab. If process of analytic model has failed, this is good place to start troubleshooting for the possible cause of the problem.

#### Schedule model updates

Analytic model could be updated automatically with 'Scheduled Jobs'. Go to Schedule -> Jobs and create new Job 'Process Analytic Model' and time preference for updates to occur. If Analytic model is based on Query, same query will be run against defined data source to bring fresh data into Analytic model. If Analytic model is based on CSV file, schedule job can be created only if CSV file is uploaded from shared folder and path begin with "\\..." (For example, <u>\\SomeMachine\FolderWithData</u>).

Processing of Analytic model could be started manually or with 'Scheduled Jobs'.

orks Analytic Model			E   🛔   🌾
Data	Structure		
ks Analytic Model			
tension			
e			
cation	Process Analytic Model		
	Analytic Model is being pr	Please wait rocessed. No changes to the model are possible at the moment! CLOSE	
NEW HIERARCHY		SAVE MODEL	PROCESS ANALYTIC MODEL

Find useful / troubleshooting information in processing 'Log' form.

Analytic Mode Adventu	el <b>re Worl</b>	ks Analytic Model					E   4
General		Data	Structure				
Name		Adventure Works Analytic	Model			C	LOG   PERMISSIONS   D
Description							
Input Type	Proces	sing - Log					
Data Source	Proce	ess successfully completed.		Nicole Peterson	6.6.2018 12:13:00	*	
Query	Level	foreign keys updated [English	Occupation].	Nicole Peterson	6.6.2018 12:13:00		
	Level	values inserted [EnglishOccu	pation].	Nicole Peterson	6.6.2018 12:13:00		
	Level	table created [EnglishOccupa	tion].	Nicole Peterson	6.6.2018 12:13:00		
	Level	foreign keys updated [English	Education].	Nicole Peterson	6.6.2018 12:13:00		
	Level	values inserted [EnglishEduca	ition].	Nicole Peterson	6.6.2018 12:13:00		
	Level	table created [EnglishEducati	on].	Nicole Peterson	6.6.2018 12:13:00		omer.EnglishOccupation,
	Level	foreign keys updated [Gende	r].	Nicole Peterson	6.6.2018 12:13:00		
	Level	values inserted [Gender].		Nicole Peterson	6.6.2018 12:13:00		
	Level	table created [Gender].		Nicole Peterson	6.6.2018 12:13:00		-1/
	Level	foreign keys updated [Color].		Nicole Peterson	6.6.2018 12:13:00		гкеу
	Level	values inserted [Color].		Nicole Peterson	6.6.2018 12:13:00	•	
						CLOSE	
							RUN C
Status		Processed					
		SAVE MODEL SET OFF	LINE				
		Find more information and	step-by-step tutorials on	n how to create, use and main	tain Kyubit Analytic Mo	odels based	on your data from CSV files or Qu

Schedule Analytic model update from defined model data sources.



### 3.6. Usage in Analysis and Dashboards

After Analytic model is processed, it is ready for **analysis** and **visualizations**. Create analysis and reports in grid/chart view by adding measures and dimensions on categories/series axis or slicer axis. Use ordering, aggregate, isolating and other analytic actions to prepare analytic report of your interest. Once analysis is prepared it could be added to **Dashboard** and be visualized by many charts and visualization widgets, while at the same time data could be further analyzed by the end-user working with the dashboard (Drill-down, drill-thourgh, drill-by, slicing and other useful analytic actions).

Analysis with Analytic models.

yses 🔻 GRID	CHARI RI	EPORI							BACK HOR
Model Country [	Afghanistan, Albania, A	rgentina, A	rmenia, Austria, Azert	iaijan, Bahamas, Banglades	hl ]				
T Purchase I	Date [ 2017-06-01 to 2	018-07-17]							
easures Drop Filters H	ere								
Tax Amount ul Purchase	Price								
fault Dimension	nt								
Drop Measure	s Here								
Porchase bate				10000					
Gender				• Gender *					
Car Make				Female		N	1ale		Total
Car Model . Car Make	F a Car Model ₹↑	Color -		Purchase Price		Tax Amount	Purchase Price	Tax Amount	Purchase Price
Color	- Murtan	-	Goldenrod	52 202	211	COE1 967			\$2 202 21
City	- Iviustan	6	Puca	\$5.592	953	\$755.341			\$8,748,95
Country			Vellow	90.740		\$705.041	\$6.941.075	\$642.845	\$6.941.07
country			Total	∑ \$12 141	164	Σ \$1 717 208	∑ \$6.941.075	7 \$642.845	Σ 519 082 23
Car Model Year	+ F-Series			\$12,913	220	\$1,374,649			\$12,913,22
Credit Card Type	+ Taurus			\$12.190	139	\$734.421	\$9,724,940	\$603.622	\$21.915.07
Currency	+ E150						\$8.053.175	\$1.247.240	\$8.053.17
	+ Escort			\$6.555	.333	\$511.756	\$4.189.326	\$728.290	\$10.744.65
	Total			<b>∑</b> \$43.799	856	Σ\$4.338.034	£ \$28.908.516	Σ\$3.221.997	Σ\$72.708.37
- Toyota	+ MR2			\$4.620	.586	\$1.428.809	-		\$4.620.58
	+ Celica						\$13.491.085	\$1.297.319	\$13.491.08
	- Prius		Teal		-		\$9.348.758	\$742.422	\$9.348.75
			Violet	\$9.522	962	Pafrach	· · · · · · · · · · · · · · · · · · ·		\$9.522.98
		Total  RAV4		Σ \$9.522	962	Refreati	Σ\$		Σ\$18.871.72
	* RAV4					Drillthrough b	y	\$1.120.120	\$9.191.99
	+ Supra	+ Supra			1.00	Set Grid KPI		\$993.285	\$8.994.94
	Total	Total		Σ \$14.143	548	Set Column KS	21	Σ \$4.153.146	Σ \$55.170.32
- Chevrolet	+ SSR			\$493	538	Jet column ke		\$901.958	\$8.504.57
	- Corvetti	ē	Pink		•	Set Cell KPI		\$759.567	\$7.472.83
			Goldenrod	\$4.791	.645	Show All KPIs			\$4.791.64
			Total	Σ \$4.791	.645	Set Grid Form	atting	Σ \$759.567	Σ \$12.264.48
	+ Express	3500			-	Set Gild Form	occing .	\$1.302.377	\$9.663.31
	+ Iracker			C0.400		Set Column Fo	rmatting	\$1.032.187	\$5.594.29
	• Impaia			\$2.465	.5//	Set Cell Forma	itting	\$256.057	\$10.268.06
+ 6140	IOTAI			2 \$7.773	005	Show All Form	attings	2 \$4.252.126	2 \$46.514.73
+ Bodge				\$60.700	261	\$6 927 122	\$62,006,709	55,419,090	\$143.713.37
+ Dodge	Banz			\$40,900	705	55.457.049	\$55,833,E04	\$5.100.190 \$5.85£ 27£	\$124.577.00
* Audi	Dente			542.950	274	\$5.055.726	550 470 081	55.023.526	593 420 85
+ Mitsuhichi				552 698	890	\$5 372 810	543 073 410	\$4 619 740	595 772 30
+ Marda				\$70 642	937	\$5,835,948	\$11,126,865	\$2,651 162	\$81,769.80
+ Levis				\$36 131	440	\$5,008,205	\$22,764,553	\$2.525 157	558,895.90
	Tabl				100	5 6 60 5 60 000	F 6550 040 050		

Reports prepared with Analytic models.

#### Car Sales Analysis

▼Filters: (1) Purchase Date: 2017-06-01 to 2018-07-17

			<ul> <li>Gender</li> </ul>						
				Female	•	Ma	le	Tota	al de la companya de
<ul> <li>Car Make</li> </ul>	Car Model	Color	Purcha	se Price	Tax Amount	Purchase Price	Tax Amount	Purchase Price	Tax Amount
Ford	Mustang	Goldenrod		\$3.392.211	\$951.867			\$3.392.211	\$951.86
		Puce		\$8.748.953	\$765.341			\$8.748.953	\$765.34
		Yellow		-		\$6.941.075	\$642.845	\$6.941.075	\$642.84
		Total		E\$12.141.164	Σ \$1.717.208	Σ \$6.941.075	Σ \$642.845	Σ \$19.082.239	Σ \$2.360.05
	E-Series			-		\$19.273.783	\$1.627.772	\$19.273.783	\$1.627.77
	F-Series			\$12.913.220	\$1.374.649			\$12.913.220	\$1.374.64
	Taurus			\$12.190.139	\$734.421	\$9.724.940	\$603.622	\$21.915.079	\$1.338.04
	E150			-		\$8.053.175	\$1.247.240	\$8.053.175	\$1.247.24
	Total			E \$37.244.523	Σ\$3.826.278	Σ \$43.992.973	Σ \$4.121.479	Σ \$81.237.496	Σ \$7.947.75
Chevrolet	Corvette	Puce		-		\$1.311.782	\$945.136	\$1.311.782	\$945.13
		Pink		-		\$7.472.839	\$759.567	\$7.472.839	\$759.56
		Goldenrod		\$4.791.645	\$551.251	-	-	\$4.791.645	\$551.25
		Purple		\$9.657.927	\$377.213	-	-	\$9.657.927	\$377.21
		Total		E\$14.449.572	Σ \$928.464	Σ\$8.784.621	Σ \$1.704.703	Σ \$23.234.193	Σ \$2.633.16
	510			-		\$12.438.309	\$1.851.364	\$12.438.309	\$1.851.36
	Suburban 2500			-		\$10.084.200	\$1.678.699	\$10.084.200	\$1.678.69
	SSR			\$493.538	\$637.013	\$8.011.041	\$901.958	\$8.504.579	\$1.538.97
	Blazer			\$7.941.808	\$805.417	\$400.034	\$716.637	\$8.341.842	\$1.522.05
	Total			522.884.918	Σ \$2.370.894	Σ \$39.718.205	Σ \$6.853.361	Σ \$62.603.123	Σ \$9.224.25
Toyota	MR2			\$7.765.757	\$1.684.817			\$7.765.757	\$1.684.81
	Camry Solara			-		\$12.478.011	\$1.426.067	\$12.478.011	\$1.426.06
	RAV4			\$207.608	\$181.779	\$9.191.991	\$1.120.120	\$9.399.599	\$1.301.89
	Celica			-		\$13.491.085	\$1.297.319	\$13.491.085	\$1.297.31
	Prius	Teal		-		\$9.348.758	\$742.422	\$9.348.758	\$742.42
		Violet		\$9.522.962	\$540.952	-	•	\$9.522.962	\$540.95
		Total		Σ \$9.522.962	Σ \$540.952	Σ \$9.348.758	Σ \$742.422	Σ \$18.871.720	Σ \$1.283.37
	Total			E\$17.496.327	Σ \$2.407.548	Σ \$44.509.845	Σ \$4.585.928	Σ \$62.005.172	Σ \$6.993.47
GMC				\$95.670.271	\$8.691.333	\$60.939.884	\$6.419.696	\$156.610.155	\$15.111.02
Dodge				\$69.175.892	\$7.924.466	\$72.313.933	\$6.065.491	\$141.489.825	\$13.989.95
Mercedes-Benz				\$42.970.665	\$5.422.972	\$56.640.076	\$6.248.937	\$99.610.741	\$12.671.90
Audi				\$42.950.274	\$6.055.726	\$55.508.426	\$5.898.201	\$98.458.700	\$11.953.92
Mitsubishi				\$52.698.890	\$5.372.810	\$43.073.410	\$4.619.740	\$95.772.300	\$9.992.55
Mazda				\$70.642.937	\$5.835.948	\$12.420.874	\$3.461.070	\$83.063.811	\$9.297.01
Pontiac				\$89.173.942	\$5.318.738	\$51.571.712	\$3.560.301	\$140.745.654	\$8.879.03
Total			Σ	\$676.365.123	£ \$67.400.799	Σ \$667.131.162	2 \$77.663.010	Σ \$1.343.495.285	£ \$145.063.80

Gender Female 📕 Male



Dashboards based on Analytic models.

