



XQ Property Valuation

User Guide

Version 1.0.6 for Windows

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Data organization

■ Database and users

Single-user database

After the first installation, the application runs in single-user database mode by default. A single-user database means that the database files, which contain all of the application working data (i.e. dictionaries, projects and analyses, users, report templates) are located on the user's workstation under the user's account and are not accessible to other users under the application.

You may switch the connection to single-user database mode at any time, if you're working in the multi-user database (see connection settings). Also, the application will start in the single-user database mode when the multi-user database is not available.

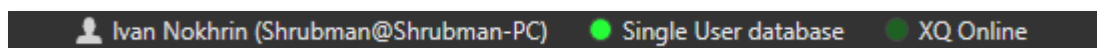
In the single-user database running mode, the user permissions and global roles do not apply, any user may create new projects, analyses, edit and delete data in the database and extract any reports from the application without limitations.

In the future versions of the application it will be possible to export the full analysis in the proprietary XQ format and import it to another database. However, the projects in the corporate database will be protected and will require a special permission by the supervisor to export the full analysis.

“

How to tell in which database mode the application is running?

When the application is running you can check the right bottom corner of the application window to see the connection information, which contains your user name and the database connection mode. The green indicator shows if the connection is active (bright green) or inactive (dim green). The user is identified as the current Windows Session user, i.e. 'UserName@ComputerName', or, when the user is logged in to the domain, 'UserName@Domain'.



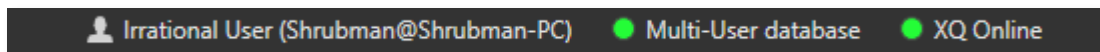
You may switch the connection to multi-user database mode at any time, if you're working in the single-user database mode (see [Connection settings](#)). Also, the application will start in the single-user database mode when the multi-user database is not available.

Multi-user database

When the application is running in single-user database mode, the user may switch to a multi-user database in order to be able to collaborate with your team. In the multi-user environment any changes that you make to the data will be visible


and accessible to editing by other users, subject to permission settings ([see Project members](#)) and your user type ([see User types](#)).

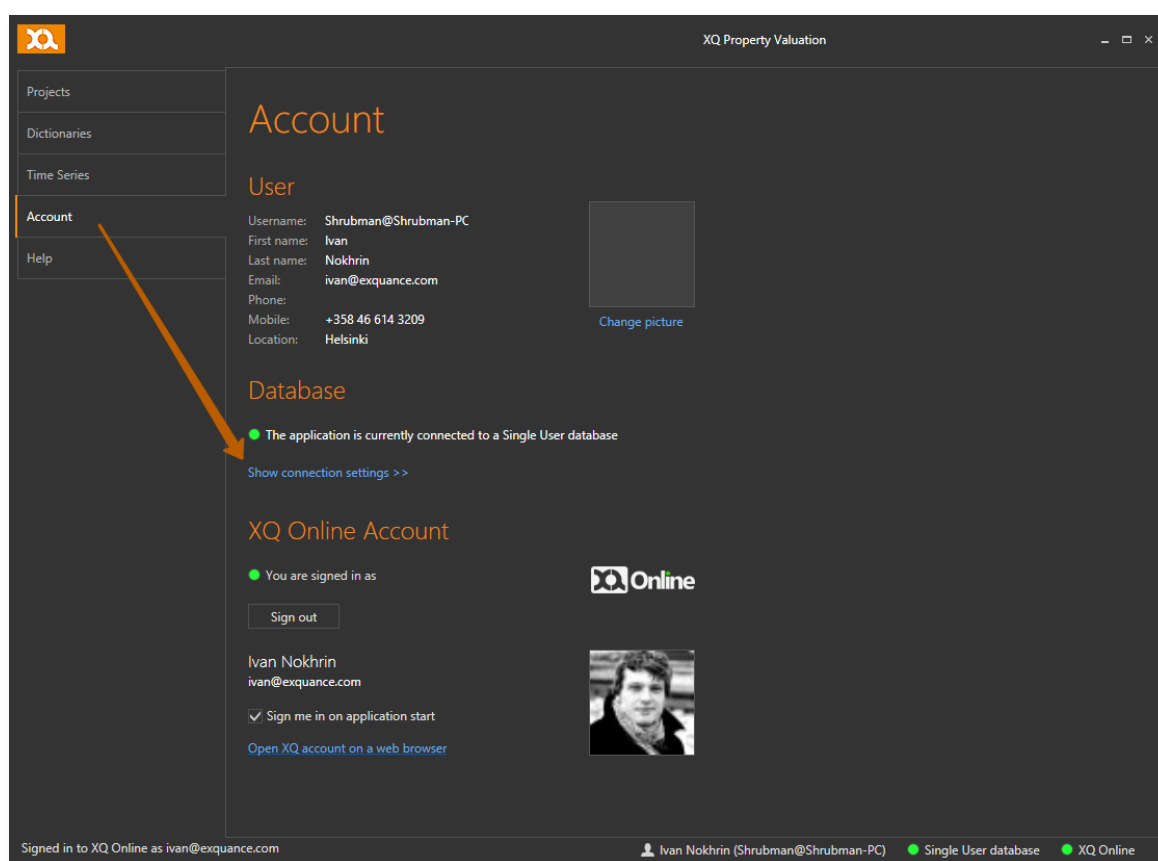
The status bar in the right bottom corner of the application window will reflect an active connection to a multi-user database and will show your user name as it is specified in your network. The user is identified by the full username, i.e. `UserName@Domain`.



You may switch the connection to single-user database mode at any time, if you're working in the multi-user database ([see Connection settings](#)). You can connect to multiple multi-user databases (one at a time) by changing the connection settings (subject to SQL Server logon settings).

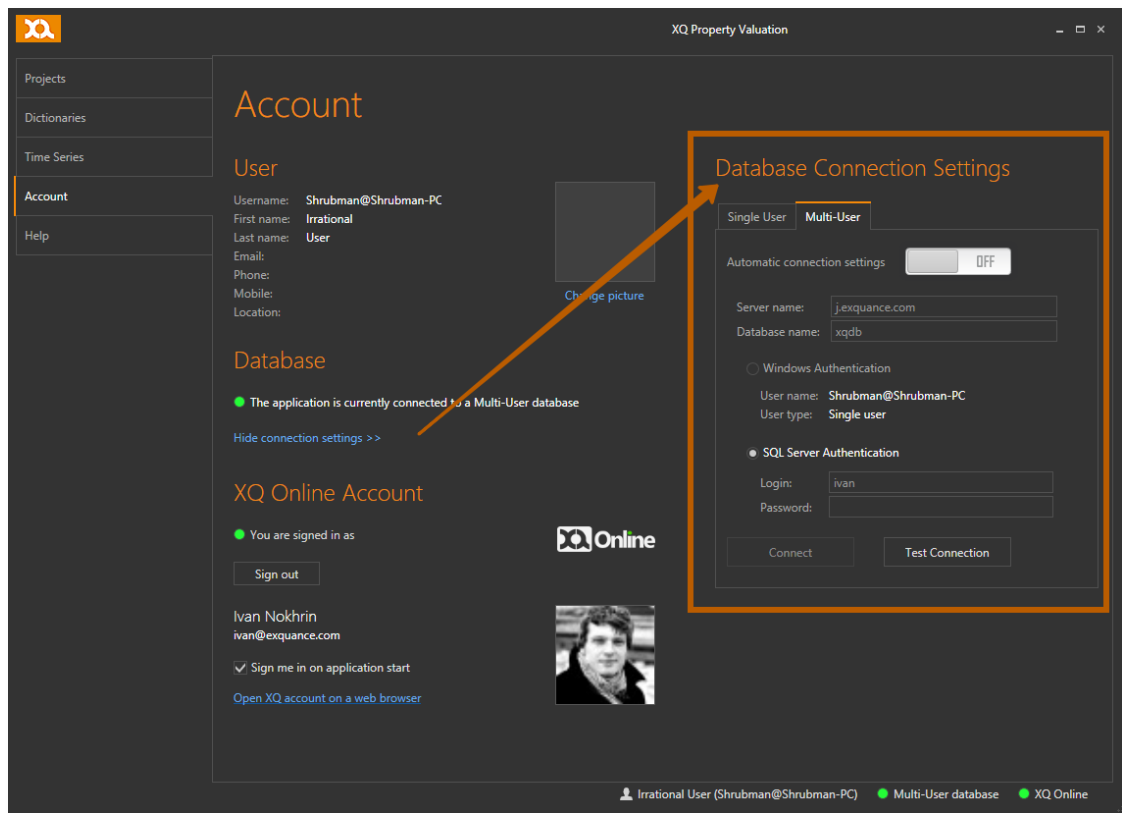
Connection settings

To change the database connection settings, press the home menu button  and select 'Account'.



Then on the account page, press 'Show connection settings' option to view the database connection options and settings. The 'Database Connection Settings' page will automatically display the tab corresponding to your current database mode.

If you're connected to a single-user database, and you wish to switch to the multi-user mode, click on the 'Multi-User' tab.



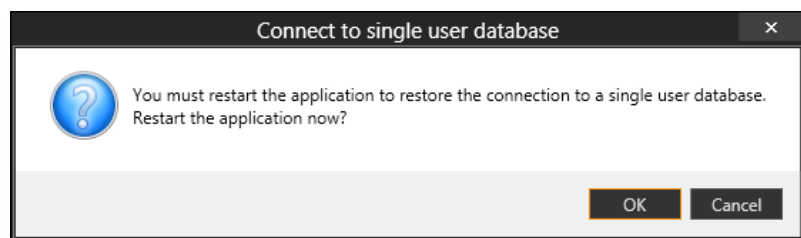
You can slide the `Automatic connection settings` switch to `On` position to attempt to read connection settings set up by your IT administrator.

“

Where can I see which database I'm currently connected to?

In the `Multi-User` tab you need to make sure that the `Automatic connection settings` is switched to `Off` position in order to see the connection details of the database to which you are currently connected.

If you would like to connect to another multi-user database, you need to input the connection details (server name, database name, and credentials) and press the `Test Connection` button. If the connection is successful, the `Connect` button will become enabled.



When you press the `Connect` button, the application will prompt you for a permission to restart. All your current work will be saved automatically before restarting.

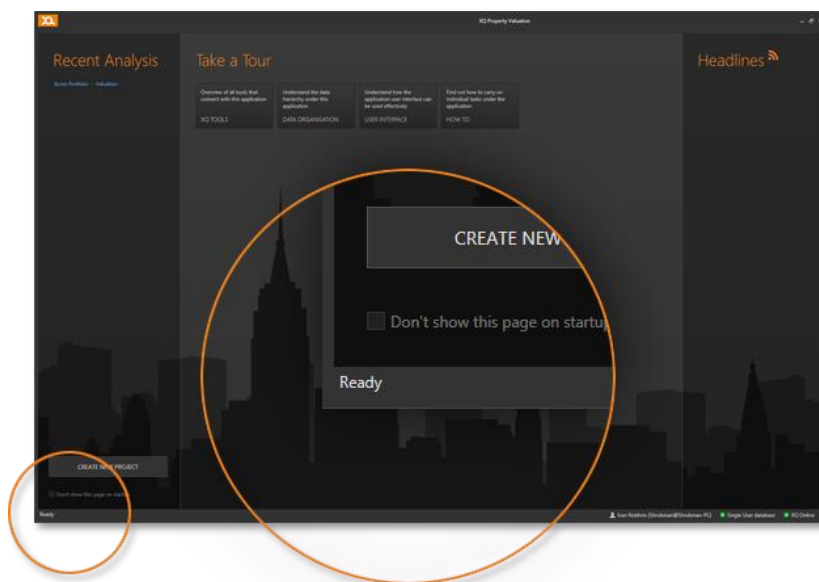
In the future versions of the application changing the database connection will be possible in runtime, without restarting.

Saving and synchronization

In a multi-user environment, all users who are simultaneously logged in to the database may see and/or edit each other's input, subject to project membership and permission settings ([see Project members](#)).

At any time, while working in the application may press `F5` (or `Ctrl+S`) to apply his own latest changes and pull all the recent changes from the shared database. If the user doesn't have a permission to change the analysis data, he can still make changes, but those changes will be visible only to him and will not be saved to the shared database.

Depending on the volume of your recent changes, it may take a few moments for the data to be synchronized. You can see the status bar in the bottom left corner of the application screen for messages `Synchronizing...` when the data saving and reading is in progress and `Ready` when it's done.



It is recommended that the user synchronizes often to make sure the current working context is up-to-date, especially when there are many users working on the same analysis. It is important to remember that any latest changes of the same input data will prevail.

In the future versions of the application it will be possible to set up auto-sync function which will be saving the user's changes at a given time interval, or, alternatively, synchronize every time anybody (including the user himself) saves changes to the shared database.

User types

User types or global roles are defined by the system administrator. Based on the global role, the user will have certain privileges in the application which allow to read data, edit data, and sign off (and lock for changes) complete analyses. These privileges cannot be changed from within the application and they are different from permissions which are set by project owners and project managers on project level ([see Project members](#)).

Valuator

The **valuator** user type suggests that the application be used by a valuation department specialist who is typically involved in a broad range of business activities such as providing an insight on property market segmentation and trends, assessing present market value of existing and to-be-developed individual properties and portfolios as well as participating in creating appropriate acquisition and exit strategies for end clients. It is expected that the valuator has an in-depth understanding of the valuation standards and techniques, property financial information, such as financial statements, property segment and market sector data. It is also expected that the valuator should have full understanding of wider real estate business information such as relevant economic data and political events.

In the application, users with valuator privileges have full edit rights and can create and alter projects, analyses, property data, market and property assumptions, etc. A valuator may be assigned a 'supervisor' role by a supervisor user for a particular project ([see Project members](#)), then the valuator can sign off (and lock for editing) completed analyses and extract reports from the application application. A valuator without a 'supervisor' role can extract reports only for previously signed off analyses ([see Supervisor](#)).

Valuators are skilled to examine and interpret data from different sources to understand the impact of internal and external factors on property market value. The valuator is expected to research primary property data and relative market data, and create a valuation model to make a comprehensive valuation report compliant with industry general standards and local valuation standards to the end clients.

Researcher

The **researcher** user type suggests that the application be used by a specialist in the research department or by a specialist responsible for collecting aggregated data for statistical and other purposes, including publishing such data to third parties. Researcher shall have restricted access to aggregated property information, imagery, key assumptions, averages and ratios, interactive maps with geolocation data, and will be able to upload market assumptions based on the research data (subject to approval by a supervisor).

A researcher cannot be granted permissions to add new projects or analyses or edit the data in the application.

Supervisor

The **supervisor** user type suggests that the application be used by a valuations director or by an executive-level personnel who is responsible for overseeing the appraisal assignment, communicating and defending the valuation results to the end clients.

In the application, the supervisor has a right to delegate supervision (on a project-by-project basis) to other users ([see Project members](#)), and to sign off completed analyses. Signing off is a special built-in function allowing to lock the analysis (financial model input) for further editing and hence enable its extraction (into a report file or an online interactive report). The extraction of interim reports and ad hoc export are accessible to valuers at any time, however, the reports will have a non-removable watermark indicating that the extracted report had not been approved by a supervisor ([see Report builder](#)).

“

Are these global roles mutually exclusive? Can a researcher be a supervisor at the same time?

The global user roles are not mutually exclusive as far as 'supervisor' user type is concerned. Primarily there are two main global roles: Valuator (data editor and writer) and Researcher (data reader). Supervisor is the additional role to

those, however a user can be assigned only to the supervisor role and have read-only access to the data. Thus the mostly privileged user would have both valuator and supervisor roles.

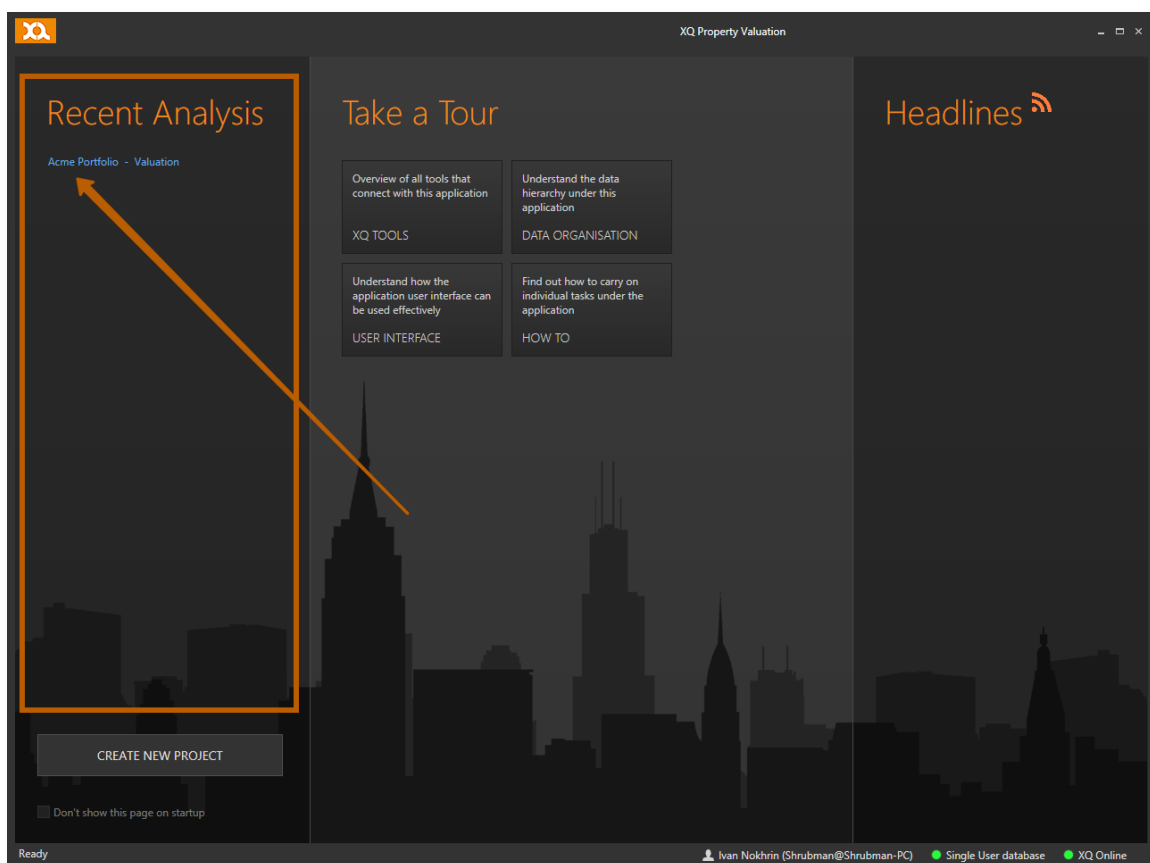
■ Data structure


Project

All the data in the application is organized in projects and analyses (valuations). One project contains one or more analyses. A project is an umbrella term for a series of valuations of the same portfolio of assets. It is possible that the composition of assets inside analyses may change over time (when assets are acquired or sold). Nonetheless, the project contains a set of assumptions which will be used for the valuation (e.g. growth rates, currency pairs etc.)

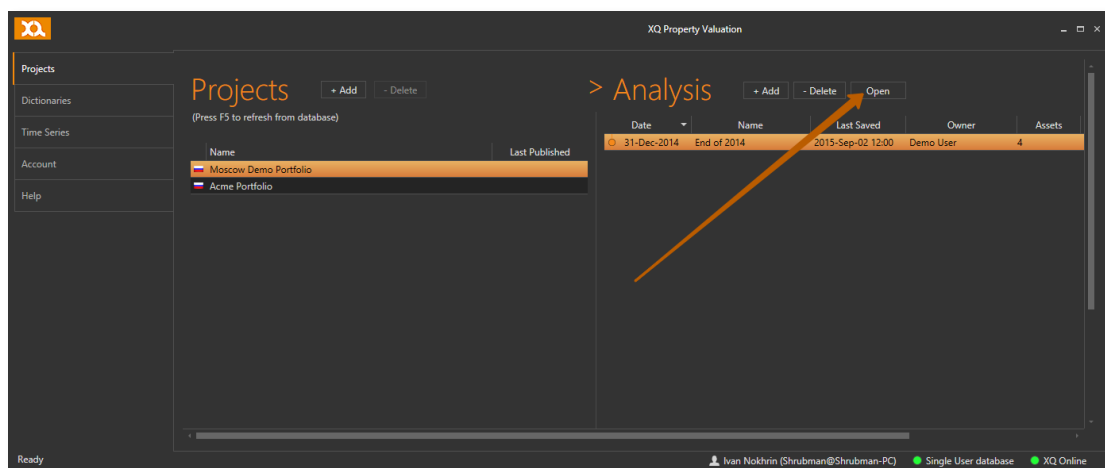
The set of assumptions used for valuation is defined on the project level and is accessible from each analysis under this project. The forecast values for each assumption are set on the analysis level. E.g. an assumption for growth rate may be called "CPI forecast" and it will be available as an indexation in each of the analyses inside the project, but the annual growth values will be set as of each analysis date separately ([see Analysis](#)).

To open the project, you need to open one of the analyses contained therein. You may single-click the recent analysis name from the 'Recent' section of the start page.



Or you can press the home menu button  and select 'Projects'. In the 'Projects' section you will see the list of projects accessible to you subject to your permission and project membership ([see Project members](#)). Single-clicking the project name will allow you to rename it, and double-click will open the most recent analysis in this project. When you

select a project, you will see the tree of analyses contained therein ([see Analysis tree](#)). After you select the analysis to open, press 'Open' button in the 'Analysis' section, or double-click on the analysis name.



To start a new project, you can press the 'Start new project' button on the start screen when the application opens, or press the '+ Add' button in the 'Projects' section of the home menu to bring up the 'Create New Project' dialogue window.

You will be prompted to enter the project name and project country. Set the country where your project's assets are located. If you have a multi-country project, you can add other countries later from the 'Countries' dictionary ([see Dictionaries - Location](#)).

Once you select a country from the list, a default country's standard will be chosen automatically ([see Standards and consistency](#)). The standard defines which collection of cash flow templates will be used for your project ([see Cash flow template](#)).

Analysis type determines whether the financial model you're about to create will contain only forecasted cash flows ([see Cash flow forecast](#)) and asset-related input (Valuation type) ([see Assets](#)), or it will have historic cash flows and legal structure with company-related input (Investment Analysis type).

Project Name: Acme Portfolio

Country: Russia

Standard: Default

Analysis Name: Ad hoc valuation

Analysis Type: Valuation

Analysis Date: 30.06.2015 Forecast starts: 01.07.2015

Analysis Currency: USD

Create

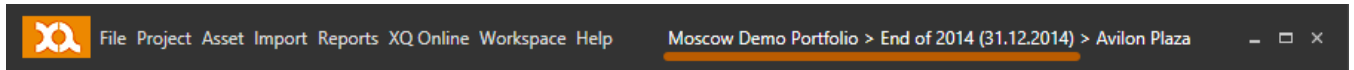
The 'Investment analysis' type is not accessible in XQ Property Valuation application.

Analysis date means that all the assumptions you make under this analysis will be valid as of this date, so as the cash flows will be forecasted from the following date forward (the date mentioned under 'Forecast starts') ([see Analysis](#)).

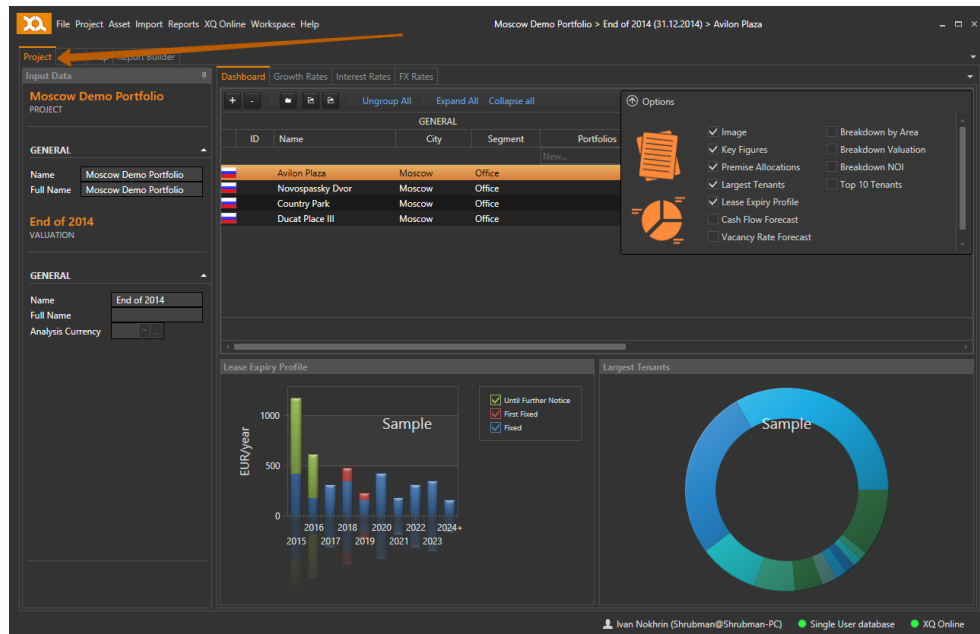
Analysis currency means the currency which will be automatically set as default input currency and valuation display currency. The currency will be automatically selected based on the country you chose, however if you set a different currency here, the country's default currency will be nonetheless added to the project and you can use it as input currency, but you will need to provide FX rates forecast for conversion ([see FX rates](#)).

When you press the Create button, your new analysis within the new project will be created and automatically open for further editing assets and assumptions. If you wish to immediately share the newly created project with your colleagues, press the Home Menu button and navigate to Members section for the project to add new project members ([see Project members](#)).

When the analysis is open, you will see the project's name and the analysis name in the window title of the application.



Navigate to the 'Project' tab in the main application window. The 'Project' tab contains the sub-tabs for assumptions and the 'Project dashboard' for aggregate output ([see Project dashboard](#)).



The 'Project' tab also has the 'Input Data' window which holds general data about the project and the analysis which you have opened.

Input data

The screenshot shows the 'Input Data' window with two main sections: 'PROJECT' and 'VALUATION'.

PROJECT Section:

- GENERAL:**
 - Name: Moscow Demo Portfolio
 - Full Name: Moscow Demo Portfolio
 - Default Country: Russia
 - Default Valuation Standard: Default
 - Owner: Demo
 - Published to XQ Online: No
- End of 2014:**

VALUATION Section:

- GENERAL:**
 - Name: End of 2014
 - Full Name:
 - Analysis Currency: USD
 - Analysis Date: 31-Dec-2014
 - Created By: Demo
 - Market Value: USD 821,000,000
 - Vacancy Rate (Tech): 8.5 %
 - Vacancy Rate (Econ): 16.6 %
 - Weighted Lease Length: 3.7 years
 - Number of Assets: 4

Name:
Display name of the project.

When you have opened a project, in the 'Input data' window you will see and will be able to edit (subject to your permission and role) the project's title (Name and full name) and the same of the currently open analysis.

In the 'General' section of the project's input data it's possible to select a default country and define a default valuation standard to be applied for newly created assets inside this analysis. After you select a country, the default standard for its country will be selected. It's possible to edit the standard's cash flow template(s) or define a new standard ([see Dictionaries - Valuation](#)). Below you can see the current project owner and the link to an interactive report published on XQ Online ([see Interactive reports online](#)).

In the general section for the analysis you can also set the 'Analysis Currency' which will be set as the display currency for values in the 'Valuation model' ([see Valuation model](#)). The analysis currency will be suggested as the valuation currency for each newly added asset (and will be selected as the default currency for further input of monetary values for the asset). The selection of the Analysis Currency will also affect the display aggregate figures on the consolidated level.

“

Can I select a different currency? How many different currencies?

It is possible to select only one currency at a time as Analysis Currency, however, you may add any number of currencies to the project by selecting a new currency from the currencies dictionary ([see Dictionaries - Market](#)). In order to see the effect immediately, edit the FX rate assumptions for the currency pairs, which will be automatically added when you select a new currency ([see FX rates](#)).

Changing the project's title will affect all of the analyses and will be used in the reports ([see Report builder](#)).

Project members

For each user the list of projects is populated with projects where the current user is an owner or a member. The user automatically becomes a project member when he creates a new project.

Current project owner (author) as well as project members (those users who will see the project on their application's project list and hence will be able to open analysis for reading and/or editing) are visible under the project list on the 'Members' section. The 'Members' section is only visible in a multi-user database mode.

Each project must have an owner and every project member can have the following privileges:

'Manager' - means the project member can add, remove, and change permission settings of other project members (except for the project owner, his permission settings cannot be changed and he cannot be removed from project members, unless the ownership is delegated to another project member). The 'Manager' privileges can be changed by clicking the checkbox in the column 'Manager' on the members list in the 'Members' section.

'Supervisor' - means the project member has privileges to sign off completed analyses and lock them for further editing. A user must have a global supervisor role ([see User types](#)) in order to assign another project member to be a supervisor for a particular project. By default, when a user with the global supervisor role is added as a member to a project, he is granted the supervisor privileges for the particular project, however the supervisor may assign one (or more) other project member(s) to be supervisors within one project.

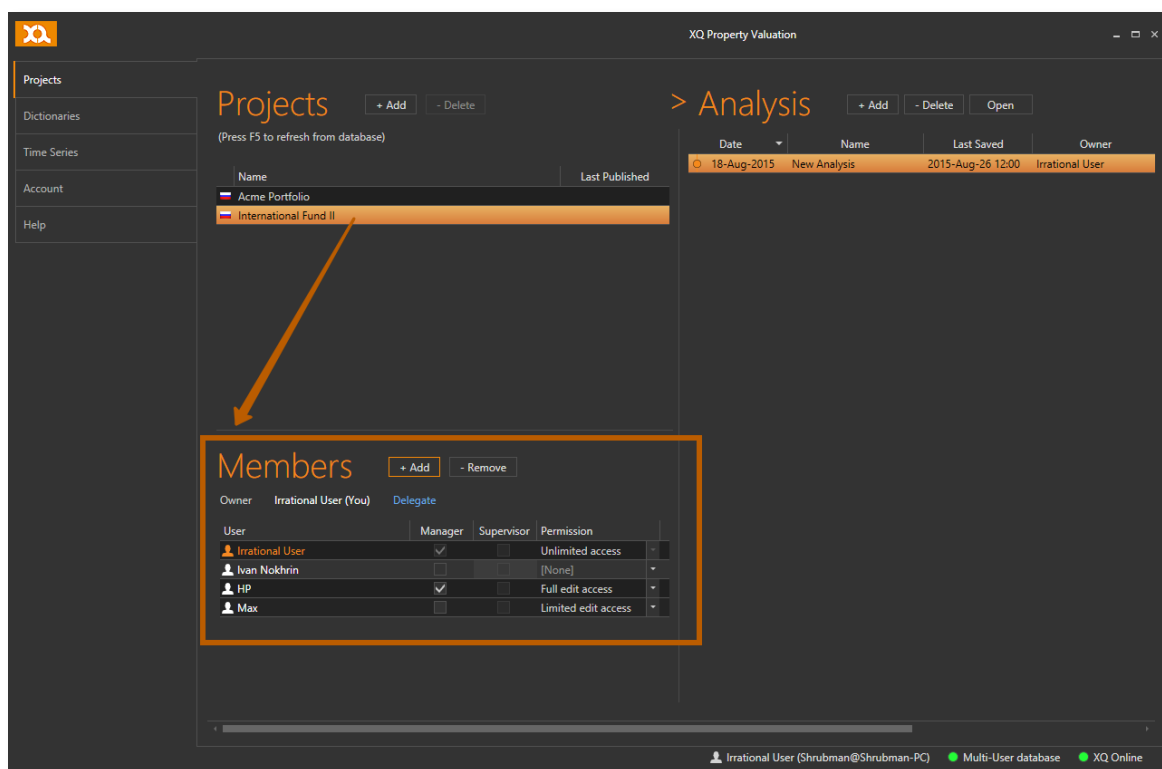
'Permissions' - means a set of permissions allowing users to edit and manipulate the data inside the analysis. Only the project managers with the privilege to 'Set permissions for project members' can change the permissions set for project members other than themselves. When the user is a project member with 'Permissions' set to '(none)', such user will see the project on his project list and can open any analysis inside that project, but will not be able to save any changes to the existing data inside the analysis, nor to add new objects (assets, properties, etc.) in that analysis. A user with no permissions will not be able to extract any report or export any data from the application. The permission sets (Unlimited access, Full edit access, and Limited edit access) grant the following privileges to project members:

Permission	Permission sets		
	Unlimited access	Full edit access	Limited edit access
Create a new analysis	ALLOWED	ALLOWED	ALLOWED
Delete an existing analysis created by another user	ALLOWED	ALLOWED	RESTRICTED
Alter input data in an existing analysis created by another user	ALLOWED	ALLOWED	ALLOWED
Export analysis data into a file*	ALLOWED	RESTRICTED	RESTRICTED
Unlock a previously signed off analysis	ALLOWED	ALLOWED	RESTRICTED
Unlock a previously signed off asset	ALLOWED	ALLOWED	RESTRICTED
Push data to the server and/or mobile device(s)	ALLOWED	RESTRICTED	RESTRICTED
Pull data from the server and/or mobile device(s)	ALLOWED	ALLOWED	RESTRICTED
Publish an interactive report on XQ Online*	ALLOWED	RESTRICTED	RESTRICTED
Remove a previously published interactive report from XQ Online	ALLOWED	RESTRICTED	RESTRICTED
Set permissions for project members	ALLOWED	RESTRICTED	RESTRICTED

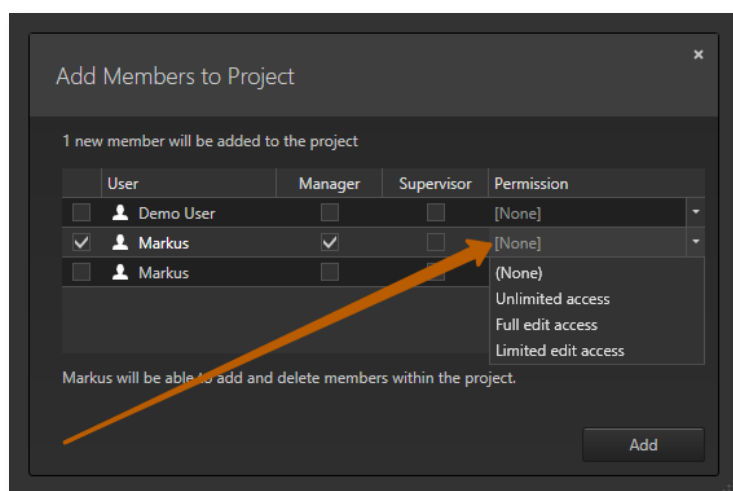
* extracting final reports is only possible for signed off analyses

In the future versions of the application it will be possible to add custom permission sets with various combinations of the listed permissions.

To view the project members, press the home menu button  and select 'Projects'. Then single-click the name of the project you're interested in. The 'Members' section will appear below the project list.



The project ownership delegation will be available in the future versions of the application.



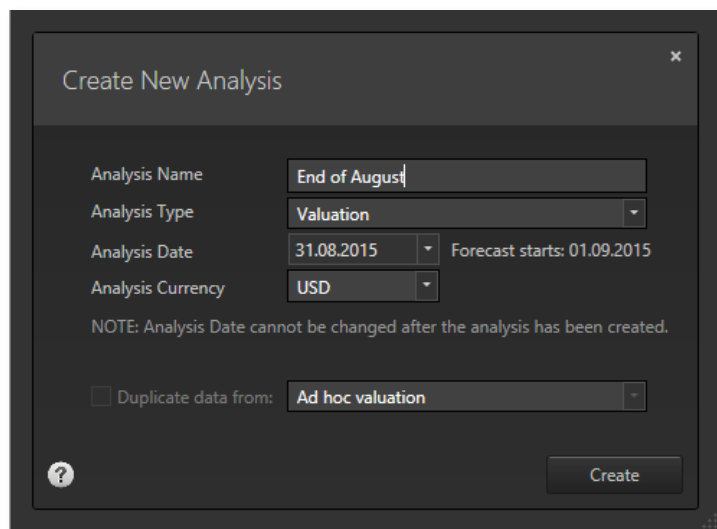
The project members will be listed sorted by user name. The privileges of each project member can be changed directly in the list (subject to your own privileges in a particular project). A project manager can add new members and remove existing members from the project.

To add a new project member, press '+ Add' button in the 'Members' section. In the appeared dialogue window you will see all the users who are logged in to the same database as you and who are not yet the project members of the current project.

You can set the privileges (define project manager(s) and supervisor(s) and select the data edit permission set) for the newly added members directly in the 'Add new members' dialogue. After you press 'Add' the selected users will be granted access to the current project and will see it on their projects list.

Analysis

`Analysis` is a point-in-time snapshot of the project. Each analysis has its analysis date (valuation date) as of which all the values contained within this analysis are valid. All forecasts and extrapolations will follow the analysis date, the annual periods in the forecasts are calculated as 12 months, starting from the analysis date ([see Forecast calculation principles](#)).



When creating a new analysis, you are prompted to input the basic data for analysis (same as when creating a project *with* the analysis).

Analysis date means that all the assumptions you make under this analysis will be valid as of this date, so as the cash flows will be forecasted from the following date forward (the date mentioned under 'Forecast starts') ([see Analysis](#)).

Analysis currency means the currency which will be automatically set as default input currency and valuation display currency. The currency will be automatically selected based on the country you chose, however if you set a different currency here, the country's default currency will be nonetheless

added to the project and you can use it as input currency, but you will need to provide FX rates forecast for conversion ([see FX rates](#)).

In this version of the application, it is not possible to change the valuation date after the analysis has been created.

Each analysis can be given a title (name and the full name) to differentiate it easier in the list of analyses. You can enter the analysis title when starting a new analysis (or project) and edit the analysis name at any moment in the 'Input data' window under the 'Project' tab ([see Project – Input data](#)).

Input data

The analysis general data is accessible for editing (subject to your role and permission settings) in the 'Project' tab's 'Input Data' window. Here you can change the analysis title and select the 'Analysis Currency'.

The screenshot shows the 'Moscow Demo Portfolio' project in the XQ Online software. The 'End of 2014' valuation is selected, and an orange arrow points to the 'Analysis Currency' field, which is set to USD. The 'Analysis Date' is 31-Dec-2014. The 'Market Value' is USD 821,000,000. The 'Vacancy Rate (Tech)' is 8.5%, and the 'Vacancy Rate (Econ)' is 16.6%. The 'Weighted Lease Length' is 3.7 years, and the 'Number of Assets' is 4.

ID	Name	City	Segment	Portfolios	Analysis Date	Method	Value (Asset Currency)	Value/sqm	Supervisory	GBA	GLA	Vacancy Rate-% (technical)	Vacancy Rate-% (economical)
1	Avilon Plaza	Moscow	Office		2014-12-31	MULTIPLE	USD 185,000,000	USD 3,313	PENDING	34920	24604	2.6%	5.9%
2	Novospassky Dvor	Moscow	Office		2014-12-31	MULTIPLE	USD 122,000,000	USD 4,980	PENDING	24497	24275	14.7%	59.7%
3	Country Park	Moscow	Office		2014-12-31	MULTIPLE	USD 282,000,000	USD 5,095	PENDING	59347	54758	7.3%	12.3%
4	Ducat Place III	Moscow	Office		2014-12-31	MULTIPLE	USD 232,000,000	USD 7,108	PENDING	32640	32430	12.4%	15.3%

You can add a new currency to the project by selecting it from the 'Currencies' dictionary ([see FX rates](#)).

Each analysis holds the forecasted time-series values for the assumptions like Growth rates and FX rates. You may edit these values in the corresponding sub-tab under the 'Project' tab. If you add a new assumption (a new growth rate or currency pair), it will appear on all the analyses under this project.

The screenshot shows the 'Moscow Demo Portfolio' project in the XQ Online software. The 'Growth Rates' tab is selected, and an orange arrow points to the 'Year 1' column of the growth rate table. The table shows growth rates for PPI and CPI over 10 years and a terminal value.

Series	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Terminal
PPI	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%
CPI	11.50%	11.50%	11.50%	11.50%	11.50%	11.50%	11.50%	11.50%	11.50%	11.50%	11.50%

Analysis tree

As point-in-time snapshots of the collection of assets, analyses form a tree, which can be viewed in the 'Analysis' section of the 'Projects' in the home menu. The data used for a single valuation is stored under an Analysis. Each Analysis has a name, date, and currency. All information about assets, properties, assumptions, valuation settings etc. contained in the analysis is considered valid as of the analysis date (or valuation date).

Analysis			
<div> + Add - Delete Open </div>			
Date	Name	Last Saved	Created By
30-Jun-2015	Ad hoc valuation	08-Sep-2015 02:57	Shrubman
31-Mar-2015	Q1 2015	08-Sep-2015 00:00	Shrubman
31-Dec-2014	End of 2014	08-Sep-2015 00:00	Shrubman
30-Sep-2014	Q3 2014	08-Sep-2015 00:00	Shrubman
31-Mar-2014	Q1 2014	08-Sep-2015 00:00	Shrubman
31-Dec-2013	End of 2013	08-Sep-2015 00:00	Shrubman

If you think of projects and analyses as folders and files, any `analysis` is always a part of a `project`. Every project must hold at least one analysis, but may hold an unlimited number of them. A set of properties subject to valuation may be constant throughout every analysis or varying. Same assets valued time and time again can be later compared like-for-like.

You may wish to organize valuation data in such manner that the name of the project is the name of a property portfolio or a name of your end client. Therefore every analysis made under that project will be stored chronologically and it will be easy to navigate between them or use their data to cross-compare assumptions or assets' appraised values over time.

In the future versions of the application, it will be possible to 'branch' an analysis by copying its assumptions. You would be able to create any number of copies of the same analysis (at the same date or at a different date). Therefore it will be possible to make several 'scenarios' of the same asset composition but using different assumptions, or compare earlier analyses with today, etc.

Dictionaries

Dictionaries are reference tables which contain items with description of objects, classifications, formats, and other definitions used in the application. When you make changes to a dictionary, the units you modify / add will be accessible to all the other users connected to the same database. Renaming an item which is already used in some valuation will change its appearance everywhere. Any user, regardless of role and permission setting can make changes in the dictionaries. (see [Forecast calculation principles](#)).

In the future versions of the application it will be possible to protect a dictionary item from changes as well as change an individual user's permission to restrict editing dictionaries.

It is impossible to delete an entry from the dictionary when it's used in an analysis or in another dictionary. To delete such an item, you should delete first the item referring to it.

In the future versions of the application it will be possible to mark an item for deletion, so that when it becomes free of referring items, it will be removed automatically. Alternatively, there will be added a reference finder, helping users to find which items refer to this item.

Dictionaries are divided into major groups: location, market, real estate, rent roll, valuation, and document.

Location

This group of dictionaries contains definitions of the physical assets' and companies' locations such as countries, regions, cities, and microlocations (or submarkets).

`Countries` is a list of countries with ISO 3166-1 country codes (alpha-2 and alpha-3). Countries have default currencies, standards, languages, etc.

Countries are attributed to projects, analyses and assets.

Each country has a default geolocation (geographical center of the country or, the capital city) and a map layer shape to visualize country-specific indicators.

Dictionary Editor: Countries

AddDelete

Item name	Currency	Default Standard	ISO 2	ISO 3	Latitude	Longit...	Language	Currency symbol
ruerto rico	US Dollar	Default	PS	PSE	32	35.25	English	
Palestine		Default	PT	PRT	39.5	-8	Portuguese	
Portugal	Euro	Default	PW	PLW	7.5	134.5	English	
Palau	US Dollar	Default	PY	PRY	-23	-58	Spanish	
Paraguay	Guarani	Default	QA	QAT	25.5	51.25	Arabic	
Qatar	Qatari Rial	Default	RO	ROU	46	25	Romanian	
Romania	New Romanian Leu	Default	RS	SRB	44	21	Serbian	Before amount
Serbia	Serbian Dinar	Default	RU	RUS	55.75217...	37.615...	Russian	After amount
I. Russia	Russian Ruble	Default	RW	RWA	-2	30	Kinyarwanda	
Rwanda	Rwanda Franc	Default	SA	SAU	25	45	Arabic	
Saudi Arabia	Saudi Riyal	Default	SB	SLB	-8	159	English	
Solomon Islands	Solomon Islands Dollar	Default	SC	SYC	-4.5833	55.6667	English	
Seychelles	Seychelles Rupee	Default	SD	SDN	15	30	Arabic	
Sudan	Sudanese Pound	Default	SE	SWE	62	15	Swedish	
Sweden	Swedish Krona	Default	SG	SGP	1.3667	103.8	English	
Singapore	Singapore Dollar	Default	SH	SHN	-15.9333	-5.7	English	
Saint Helena, Ascension and	Saint Helena Pound	Default						

Ok

Default standard defines which Cash flow template will be selected by default when a new asset is added in that country (see [Cash flow template](#)). The selected country for a particular project becomes the default country for newly added assets and growth assumptions. Currency of the asset's country is used as a base (payment) currency for calculation purposes (see [Project](#)).

`Regions` are territorial subdivisions within each country. They can be administrative or geographic areas.
They can be used for expanded analytical purposes by geographic location rather than submarket.

Cities

Microlocations

Market

Each analysis can be given a title (name and the full name) to differentiate it easier in the list of analyses. You can enter the analysis title when starting a new analysis (or project) and edit the analysis name at any moment in the `Input data` window under the `Project` tab ([see Project](#)).

Currencies

Exchange rates

Growth rates

Real estate

Each analysis can be given a title (name and the full name) to differentiate it easier in the list of analyses. You can enter the analysis title when starting a new analysis (or project) and edit the analysis name at any moment in the `Input data` window under the `Project` tab ([see Project](#)).

Segments

Property types

Property categories

Property classes

Use types

Property use types

Rent roll

Each analysis can be given a title (name and the full name) to differentiate it easier in the list of analyses. You can enter the analysis title when starting a new analysis (or project) and edit the analysis name at any moment in the `Input data` window under the `Project` tab ([see Project](#)).

Tenants

Tenant classifiers

Tenant classification

Valuation

Each analysis can be given a title (name and the full name) to differentiate it easier in the list of analyses. You can enter the analysis title when starting a new analysis (or project) and edit the analysis name at any moment in the `Input data` window under the `Project` tab ([see Project](#)).

Standards

Cash flow templates

Document

The analysis general data is accessible for editing (subject to your role and permission settings) in the `Project` tab's `Input

Document types

Publishers

Business process

■ Input data

Assets

Asset is the target for valuation, so in an analysis assets have the market value (not individual buildings inside each asset). Therefore if you wish to determine a value of a group of buildings which share the operating expenses (and it is impossible to split them), you can combine these buildings as properties inside an asset.

All the input and calculation data for asset is accessible under the `Asset` tab in the application window. Under the `Asset` tab you will see the functional sub-tabs (e.g. Layouts, Rent Roll etc.) and the `Input Data` window which will contain input data for the selected object. Also the functional tabs can change their contents depending on the selected object (e.g. Layouts tab will show floor plan if a floor is selected, or stacking plan of the building if the building is selected, Rent roll will be filtered by the selected property or floor).

The tree of objects under the asset is visible in the `Navigator` window. You can select an object by single-clicking its name in the `Navigator`.

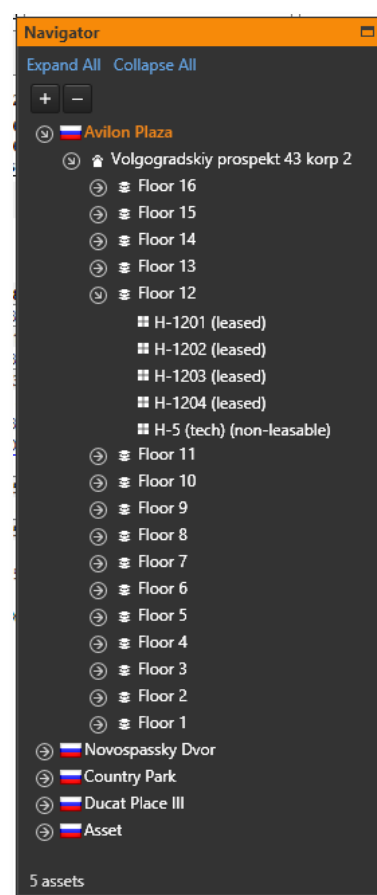
The senior branch of the tree is asset, the navigator displays the basic input data for the asset in the tree (Country and Name).

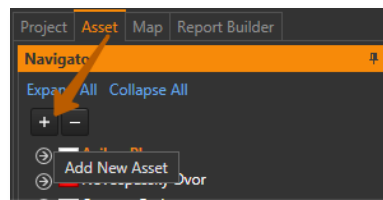
In the future versions of the application the Navigator window will be able to display a thumbnail of the asset's picture as well as other asset's details (e.g. city, segment, etc.).

The next branch shows the properties contained inside this asset. The icon before the property's name will indicate the type of the property, e.g. 🏠 means that the property is a building ([see Properties](#)).

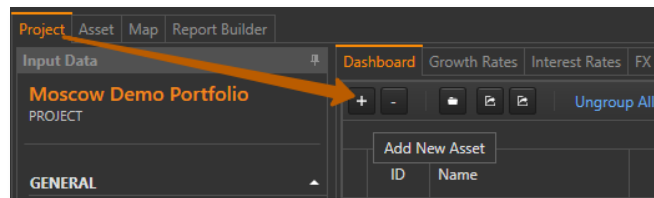
The next level of the asset tree shows the floors marked by the icon 🏢. The floors in turn contain premises marked by the icon 🏠. The premises can be added directly to a property without specifying any floor (then <no floor> will be displayed instead of the floor name).

To create a new asset, press + in the `Navigator` window.

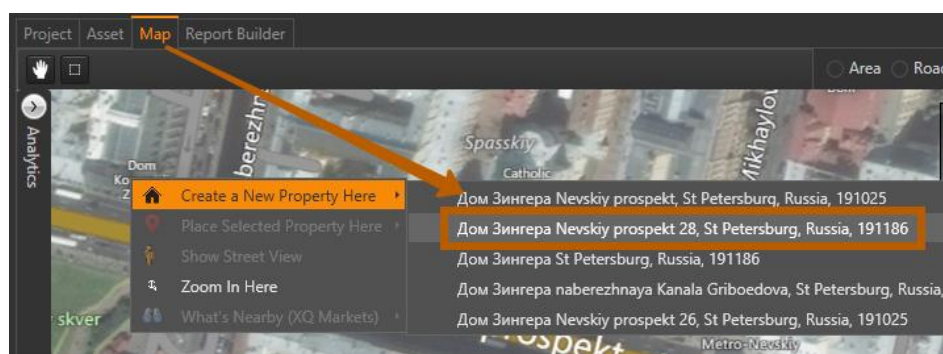




Alternatively you can press the similar  button in the project dashboard.



Or you can create a new asset from the geolocation on the map. Switch to the 'Map' tab and right click on the selected location.



Then navigate to the 'Create a New Property Here' context menu item. If the location is recognized by the map engine, you will be given a choice of addresses, and in some cases the asset's names.

Create New Asset	
General	Name: <input type="text" value="Dom Zingera"/> * Required
Property	Country: <input type="text" value="Russia"/> * Required
Valuation	ID: <input type="text"/>
Investment Structure	Segment: <input type="text" value="Retail"/>
	Address: <input type="text" value="naberezhnaya Kanala Griboedova 21"/>
	Zip: <input type="text" value="191186"/>
	City: <input type="text" value="St Petersburg"/>
	Submarket: <input type="text" value="<Select>"/>
	Location: <input type="text" value="30.325822"/> <input type="text" value="59.935813"/>
<input type="button" value="Create"/>	

Select the one that suits your asset and the new asset dialogue window will appear, containing the asset's name, geolocation, and address.

Asset's country defines which currency will be used for conversion of the cash flows generated by this asset. (e.g. in Russia it will be RUB, considering that no matter in which currency income or expense is nominated, the payments are always carried out in RUB).

'ID' is an optional unique identifier of the asset outside of the application (e.g. for synchronization with CRM system).

'Segment' means the primary market segment to which the asset is attributed (e.g. Retail, Office, etc.). 'Submarket' is an optional geographical micro location definition for the area where the asset is located.

“

Are all these fields required? Can this data be changed/input later?

The only required fields are Name and Country, because based on the country, all the principle assumptions (growth rates, FX rates, etc.) and the cash flow template (based on the country's default standard) will be determined. It is advised (but not required) that you scan through all the fields before pressing 'Create'. You can change almost any of this input data at any time by editing the input data ([see Assets – Input data](#)).

An asset cannot be created without a property, so it is required that a property be created when you're creating a new asset. By default, your latest selection will be automatically chosen when you navigate to 'Property' section of the dialogue.

There you can select the kind of the property that will be created for your new asset. The choice that you have is building, land, or utility.

You may select a type and a category for the selected property kind. You may define your own classification at any time ([see Properties – Input data](#)).

When selecting the property type, you are prompted to enter the dimensions for the property (GBA – gross building area and/or Quantity for 'Building', Area for 'Land', and Quantity for 'Utility').

Note that the idea of defining a property as a part of the asset implies that the property is used for generation of continuous rental income. However, if you wish to add full details to an asset and enumerate, e.g. parts of property, plant & equipment which have their own value, but don't generate any rental income, it's still advised that you insert information on them separately (as separate properties inside the same asset).

The screenshot shows the 'Create New Asset' dialog box with the 'Property' section selected. The 'General' tab is active, showing radio buttons for 'Building' (selected), 'Land', and 'Utility'. Below these are input fields for 'Name' (naberezhnaya Kanala Griboedova 21), 'Full Name' (empty), 'Address' (naberezhnaya Kanala Griboedova 21), 'Type' (Building), and 'Category' (Office complex). There are also input fields for 'GBA (sqm)' and 'Quantity (pcs)'. A message at the bottom states 'One building (property) will be added to the asset'. A 'Create' button is at the bottom right.

The screenshot shows the 'Create New Asset' dialog box with the 'Valuation' section selected. The 'Valuation Standard' is set to 'Default', the 'Cash Flow Template' is set to 'General' (marked as required), and the 'Valuation Currency' is set to 'USD'. A 'Create' button is at the bottom right.

In the 'Valuation' section of the dialogue you will be prompted to select a standard and the cash flow template to be used for this asset. You can skip this setting, because the values will be inherited from the analysis settings, however, you may wish to select a different cash flow template or define a new standard as well as alter the Valuation Currency.

In the case when you select a cash flow template different from the default one selected for the analysis, such asset will be excluded from the consolidation until the mapping of concrete cash flow items is done ([see Cash flow template](#)).

After this is checked, you can press the 'Create' button to create the asset record in the database and populate its cash flow items to create the valuation model.

Input data

Input Data

Ducat Place III
ASSET

GENERAL

Name: Ducat Place III
Full Name: Ducat Place III
ID:
Segment: Office
Description: Ducat Place III is one of the top class office complexes in Moscow. This modern 14-storey building offers highly efficient office space that addresses the needs of international business elite. Designed by Skidmore, Owings & Merrill architectural bureau, it serves as the prominent

LOCATION

Address: ulitsa Gasheka 6
Zip: 125047
City: Moscow
Region: Moscow City
Submarket: Z1 NW
Longitude: 37.590260
Latitude: 55.768470

PORTFOLIOS

New...

ATTACHMENTS

Drag and drop file(s) here

The 'Input Data' for asset has different views: General data, Valuation ([see Valuation model](#)), and Indexations.

To switch to General data view, press the icon. This view contains the following sections: General, Location, Portfolios, Attachments.

GENERAL

- Name – the name of the asset as it will be displayed in the application
- Full Name – the full name of the asset for use in the reports (optional)
- ID – external identifier of the asset, which corresponds to a unique asset ID outside the application (e.g. in CRM system)
- Segment – primary market segment to which the asset is attributed (e.g. Retail, Office, etc.)
- Description – verbal description of the asset's market characteristics (can be inserted into reports etc.)

LOCATION

- Address – street address of the asset (primary address in the case when asset contains several properties)
- Zip – postal code
- City – where the asset is located. Cities are selected from the dictionary 'Cities' by country. A new city will be automatically added to the dictionary if it doesn't exist, if asset is created from the map
- Region – administrative division of the country (optional)

- Submarket – a geographical micro location where the asset is located. Submarkets are defined for each country (optional)
- Longitude/Latitude – geo coordinates of the asset's location

PORTFOLIOS

Each asset can be a part of a group of assets in the project, which is called 'Portfolio' in the context of the application. A portfolio is simply a virtual tag attached to each asset, so that the user may quickly filter assets in a large project.

ATTACHMENTS

It is possible to attach any kind of file(s), whether it be scanned titles, agreements, images, or Excel models, to any asset. You can select a document type for each file for easy sorting and searching among multiple documents.

To switch to Indexations view, click the icon. You can select a growth profile (or indexation forecast) for Market Rent Growth and Market Value Growth from the list of 'Growth Rates' which you set up for the project ([see Growth rates](#)).

Input Data

Ducat Place III
ASSET

INDEXATIONS

Market Rent Growth: CPI Russia
Market Value Growth: CPI Russia

Properties

After the first installation, the application runs in single-user database mode by default. A single-user database means that the database files, which contain all of the application working data (i.e. dictionaries, projects and analyses, users, report templates) are located on the user's workstation under the user's account and are not

Input data

After the first installation, the application runs in single-user database mode by default. A single-user database means that the database files, which contain all of the application working data (i.e. dictionaries, projects and analyses, users, report templates) are located on the user's workstation under the user's account and are not

Floors and layouts

After the first installation, the application runs in single-user database mode by default. A single-user database means that the database files, which contain all of the application working data (i.e. dictionaries, projects and analyses, users, report templates) are located on the user's workstation under the user's account and are not

Premises and rent roll

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Input data

After the first installation, the application runs in single-user database mode by default. A single-user database means that the database files, which contain all of the application working data (i.e. dictionaries, projects and analyses, users, report templates) are located on the user's workstation under the user's account and are not

Market assumptions

After the first installation, the application runs in single-user database mode by default. A single-user database means that the database files, which contain all of the application working data (i.e. dictionaries, projects and analyses, users, report templates) are located on the user's workstation under the user's account and are not

Rent roll

After the first installation, the application runs in single-user database mode by default. A single-user database means that the database files, which contain all of the application working data (i.e. dictionaries, projects and analyses, users, report templates) are located on the user's workstation under the user's account and are not

Operating expenses

After the first installation, the application runs in single-user database mode by default. A single-user database means that the database files, which contain all of the application working data (i.e. dictionaries, projects and analyses, users, report templates) are located on the user's workstation under the user's account and are not

Capital expenditures

After the first installation, the application runs in single-user database mode by default. A single-user database means that the database files, which contain all of the application working data (i.e. dictionaries, projects and analyses, users, report templates) are located on the user's workstation under the user's account and are not

Comparable assets

After the first installation, the application runs in single-user database mode by default. A single-user database means that the database files, which contain all of the application working data (i.e. dictionaries, projects and analyses, users, report templates) are located on the user's workstation under the user's account and are not

Assumptions

After the first installation, the application runs in single-user database mode by default. A single-user database means that the database files, which contain all of the application working data (i.e. dictionaries, projects and analyses, users, report templates) are located on the user's workstation under the user's account and are not accessible to other users under the application.

Growth rates

After the first installation, the application runs in single-user database mode by default. A single-user database means that the database files, which contain all of the application working data (i.e. dictionaries, projects and analyses, users, report templates) are located on the user's workstation under the user's account and are not.

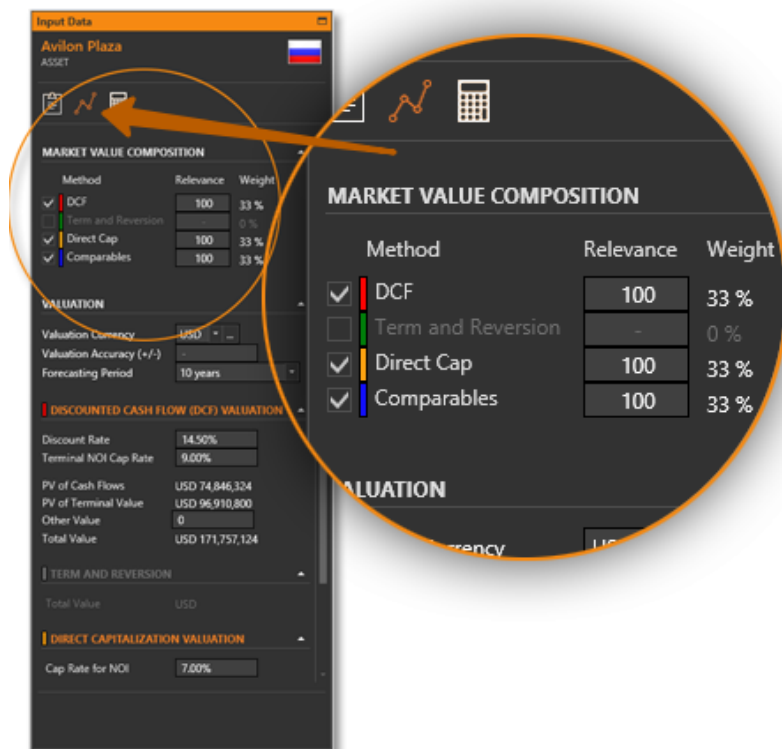
FX rates

After the first installation, the application runs in single-user database mode by default. A single-user database means that the database files, which contain all of the application working data (i.e. dictionaries, projects and analyses, users, report templates) are located on the user's workstation under the user's account and are not

■ Calculation engine

Valuation methods

The calculation engine of the application is designed to run the modeled calculations in real time. This means, as in any spreadsheet-like environment, any change you make to the input data will immediately have an effect on the resulting and related values.



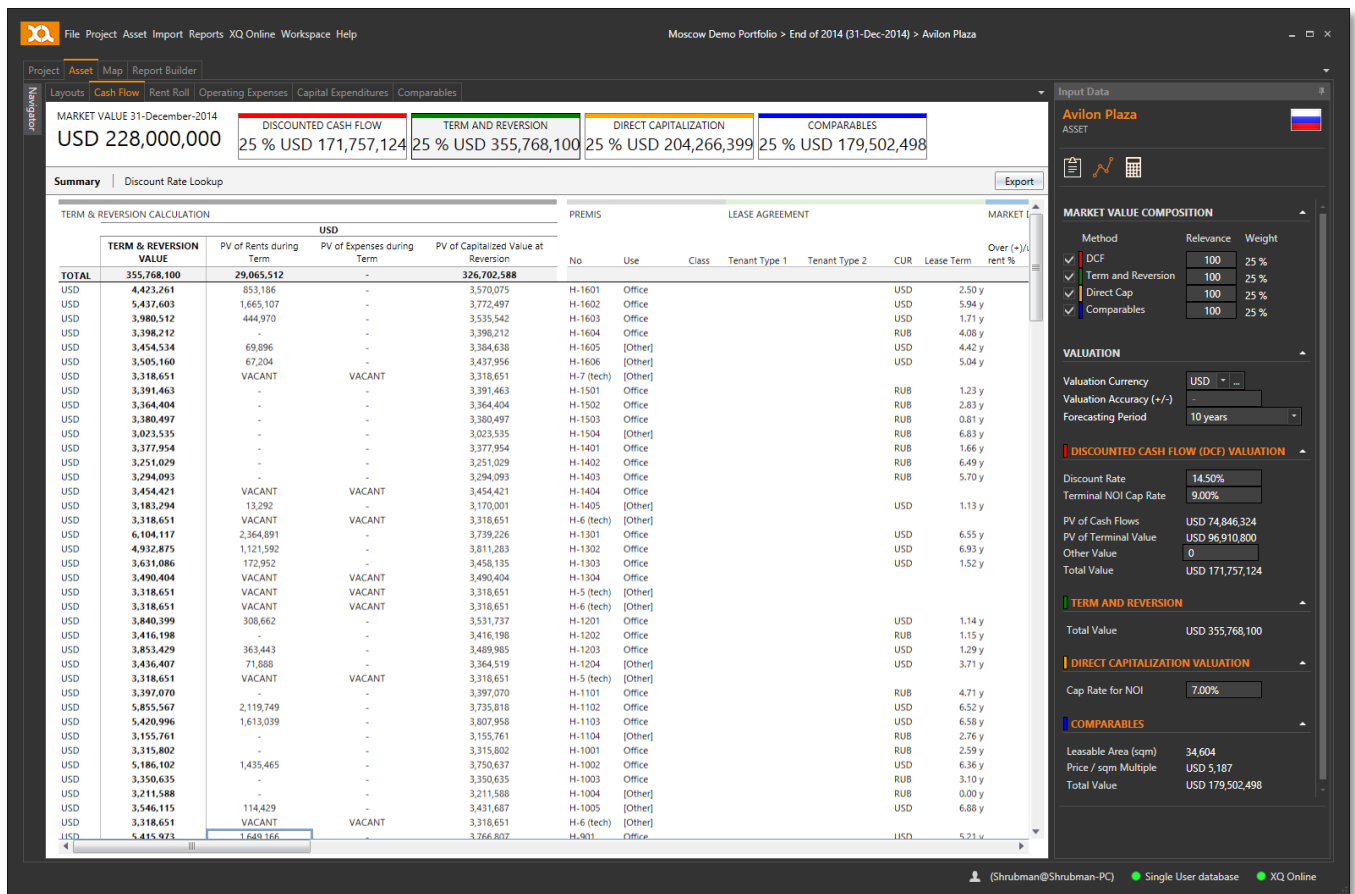
The market value for each asset in an analysis will be recalculated automatically as you insert the input data.

In order to view the current calculated market value of any asset, you need to select an asset (by single-clicking on its name in the Navigator), go to its 'Input data' window and press the valuation icon to select the 'Market value composition'.

Discounted cash flows

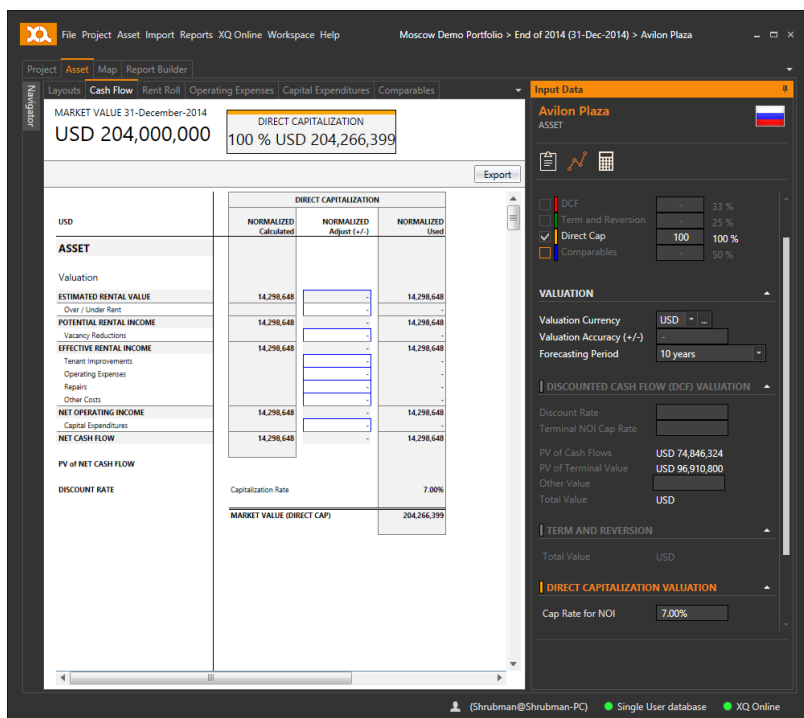
After the first installation, the application runs in single-user database mode by default. A single-user database means that the database files, which contain all of the

application working data (i.e. dictionaries, projects and analyses, users, report templates) are located on the user's workstation under the user's account and are not.



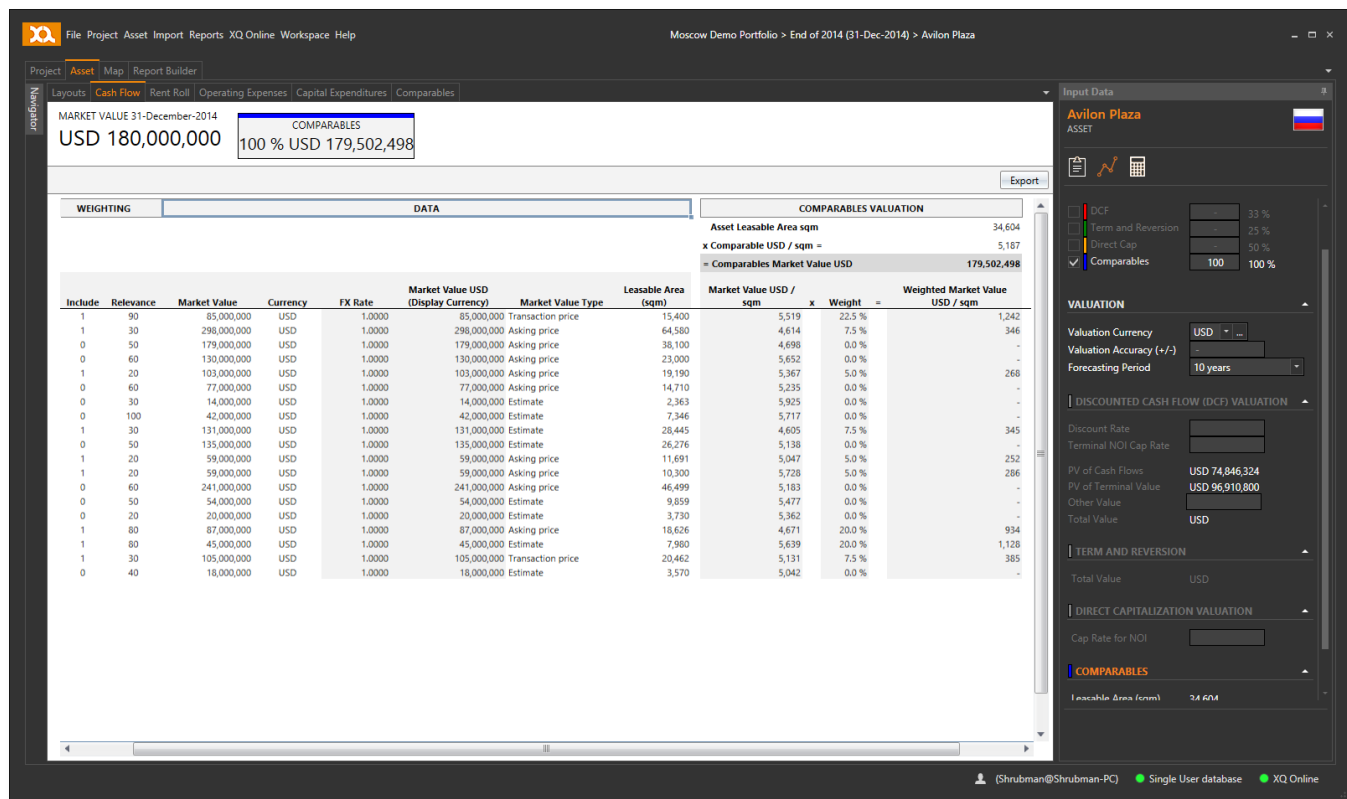
Direct capitalization

After the first installation, the application runs in single-user database mode by default. A single-user database means that the database files, which contain all of the application working data (i.e. dictionaries, projects and analyses, users, report templates) are located on the user's workstation under the user's account and are not.



Comparable assets

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Cash flow forecast

After the first installation, the application runs in single-user database mode by default. A single-user database means that the database files, which contain all of the application working data (i.e. dictionaries, projects and analyses, users, report templates) are located on the user’s workstation under the user’s account and are not accessible to other users under the application.

USD	YEAR 1											
	1-Jan-15 31-Jan-15 Forecast	1-Feb-15 28-Feb-15 Forecast	1-Mar-15 31-Mar-15 Forecast	1-Apr-15 30-Apr-15 Forecast	1-May-15 31-May-15 Forecast	1-Jun-15 30-Jun-15 Forecast	1-Jul-15 31-Jul-15 Forecast	1-Aug-15 31-Aug-15 Forecast	1-Sep-15 30-Sep-15 Forecast	1-Oct-15 31-Oct-15 Forecast	1-Nov-15 30-Nov-15 Forecast	1-Dec-15 31-Dec-15 Forecast
ESTIMATED RENTAL VALUE	1,191,554	1,202,412	1,213,369	1,224,426	1,235,583	1,246,842	1,258,204	1,269,670	1,281,239	1,292,915	1,304,696	1,316,585
Over / Under Rent	(584,098)	(594,602)	(605,202)	(615,898)	(626,692)	(637,584)	(620,822)	(631,914)	(642,298)	(651,525)	(659,350)	(670,793)
POTENTIAL RENTAL INCOME	607,456	607,810	608,167	608,528	608,892	609,259	637,382	637,756	638,941	641,390	645,346	645,793
Vacancy Reductions	(38,853)	(39,207)	(33,670)	(29,349)	(5,001)	(1,685)	(1,701)	(1,716)	(2,540)	(4,624)	(3,415)	(3,446)
EFFECTIVE RENTAL INCOME	568,603	568,603	574,498	579,179	603,890	607,574	635,681	636,040	636,401	636,766	641,931	642,346
Tenant Improvements	-	-	-	-	-	-	-	-	-	-	-	-
Operating Expenses	(179,570)	(181,206)	(182,858)	(184,524)	(186,205)	(187,902)	(189,614)	(191,342)	(193,086)	(194,845)	(196,621)	(198,413)
Repairs	(7,058)	(7,123)	(7,188)	(7,253)	(7,319)	(7,386)	(7,453)	(7,521)	(7,590)	(7,659)	(7,729)	(7,799)
Other Costs												
NET OPERATING INCOME	381,975	380,274	384,453	387,402	410,366	412,286	438,614	437,177	435,726	434,262	437,582	436,135
Capital Expenditures	-	-	-	-	-	-	-	-	-	-	-	-
NET CASH FLOW	381,975	380,274	384,453	387,402	410,366	412,286	438,614	437,177	435,726	434,262	437,582	436,135

Cash flow template

After the first installation, the application runs in single-user database mode by default. A single-user database means that the database files, which contain all of the application working data (i.e. dictionaries, projects and analyses, users, report templates) are located on the user's workstation under the user's account and are not.

Standards and consistency

After the first installation, the application runs in single-user database mode by default. A single-user database means that the database files, which contain all of the application working data (i.e. dictionaries, projects and analyses, users, report templates) are located on the user's workstation under the user's account and are not.

Cash flow items

After the first installation, the application runs in single-user database mode by default. A single-user database means that the database files, which contain all of the application working data (i.e. dictionaries, projects and analyses, users, report templates) are located on the user's workstation under the user's account and are not.

Cash Flow Template Editor

Template Name:
General

Standard:
Default standard

Cash Flow Items

Expense Items

AddBreakDeleteUpDown

No	Item name	Row Logic	DCF Terminal...	Key Figure	Valuation...	Comment
0	ESTIMATED RENTAL VALUE	Auto - Estimated Rental Value	None	<input type="checkbox"/>	<input type="radio"/>	
1	Over - Under Rent	Auto - Over/Under Rent	Ratio to	<input type="checkbox"/>	<input type="radio"/>	
2	POTENTIAL RENTAL INCOME	Sum of (ESTIMATED RENTAL VALUE)	Post-growth	<input type="checkbox"/>	<input type="radio"/>	
3	Vacancy Reductions	Auto - Vacancy Reduction		<input type="checkbox"/>	<input type="radio"/>	
4	EFFECTIVE RENTAL INCOME	Sum of (POTENTIAL RENTAL INCOME, Vacancy Reductions)	Post-growth	<input type="checkbox"/>	<input type="radio"/>	
7	Tenant Improvements	Auto - Tenant Improvement Costs	Ratio to	<input type="checkbox"/>	<input type="radio"/>	
5	Operating Expenses	Auto - Operating Expenses	Average	<input type="checkbox"/>	<input type="radio"/>	
6	Repairs	Auto - Operating Expenses	Average	<input type="checkbox"/>	<input type="radio"/>	
8	Other Costs	Cell formula	Ratio to	<input type="checkbox"/>	<input type="radio"/>	
9	NET OPERATING INCOME	Sum of (EFFECTIVE RENTAL INCOME, Tenant Improvements, Operating Expenses)	Post-growth	<input type="checkbox"/>	<input type="radio"/>	
10	Capital Expenditures	Auto - Capital Expenditures	Ratio to	<input type="checkbox"/>	<input type="radio"/>	
11	NET CASH FLOW	Sum of (NET OPERATING INCOME, Capital Expenditures)	Post-growth	<input type="checkbox"/>	<input checked="" type="radio"/>	

OkCancelApply

Cell Formula

Spreadsheet

Sum of

Auto

Mapping

GLA

Estimated Rental Value

Over/Under Rent

Potential Rental Income

☒

Vacancy Reduction

Base Rent Income

Operating Expenses Reimbursables

Utilities Reimbursables

Total Rental Income

Operating Expenses

Tenant Improvement Costs

Leasing (Brokerage) Costs

Capital Expenditures

Asset Market Value (Index to Calculated Value)

Asset Market Value (Index to Given Value)

Asset Market Value (Direct Cap)

Asset Sales Proceeds (Index to Calculated Value)

Asset Sales Proceeds (Index to Given Value)

Asset Sales Proceeds (Direct Cap)

DCF Terminal...	Key Figure	Valuation...	Comment
None	<input type="checkbox"/>	<input type="radio"/>	
Ratio to	<input type="checkbox"/>	<input type="radio"/>	
Post-gr...	<input checked="" type="checkbox"/>	<input type="radio"/>	
	Post-Growth		
	None	<input type="radio"/>	
Post-growth	Ratio to	<input checked="" type="radio"/>	ESTIMATED RENTAL VALUE
	Average		
Ratio to	<input type="checkbox"/>		Over - Under Rent
Average	<input type="checkbox"/>		Vacancy Reductions
Average	<input type="checkbox"/>		EFFECTIVE RENTAL INCOME
Ratio to	<input type="checkbox"/>		Tenant Improvements
Post-growth	<input type="checkbox"/>		Operating Expenses
Ratio to	<input type="checkbox"/>		Repairs
Post-growth	<input type="checkbox"/>		Other Costs
			NET OPERATING INCOME
			Capital Expenditures
			NET CASH FLOW

Expense items

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Cash Flow Template Editor

Template Name:GeneralStandard:Default standard

Cash Flow Items

Expense Items

AddDeleteUngroup

No	Item name	Cash Flow Item	Method	Multiplier	Payment Recurrence
Item Group: General and administrative					
5	Payroll	Operating Expenses	Single value		Every Month
7	Marketing & PR	Operating Expenses	Single value		Every Month
8	Professional services	Operating Expenses	Single value		Every Month
9	Other G&A	Operating Expenses	Single value		Every Month
Item Group: Property management					
2	Facility Manager	Operating Expenses	Multiple	GLA	Every Month
3	Property Manager	Operating Expenses	Single value		Every Month
4	Maintenance	Operating Expenses	Single value		Every Month
6	Management fees	Operating Expenses	Single value		Every Month
Item Group: Replacement cost					
10	Repairs	Repairs	Single value		Every Month
Item Group: Utilities					
1	Utilities	Operating Expenses	Single value		Every Month

OkCancelApply

Select All

☐ January

☐ February

☒ March

☐ April

☐ May

☒ Jun

☐ July

☐ August

☒ September

☐ October

☐ November

☒ December

Forecast calculation principles

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Forecast periodicity

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Value validity span

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Indexed values

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Row formulae

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Custom array

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Valuation model

Asset cash flows

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DCF valuation

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Direct capitalization valuation

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Term and reversion valuation

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Premises cash flows

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Auxiliary time series

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Output and reporting

Dashboards

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Project dashboard

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Asset dashboard

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Layouts

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Property layout

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Floor playout

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Export to Excel

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Table export

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Valuation model export

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Report builder

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Composite reports

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Report template design

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Analysis-to-analysis comparison

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Interactive reports online

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Terms

 Glossary

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