Thesis Property Suite

CGSoft Ltd specializes for over a decade in the creation of desktop, web and mobile applications regarding the property management, using only the latest technology, high expertise and applied experience of over thirty years in the design, development and support of business software.

Thesis Property Suite offers a plethora of state-of-the-art applications that are fully adjustable to a business's tailored needs, with practically endless and easily applicable possibilities of managing any size of property portfolios.

In this way, CGSoft Ltd establishes a dominant role in the challenging, international stage and is ready to make any necessary adjustments keeping up to date with the ever-changing market. Our products are based on universally accepted technologies that are installed in an extensive network of users (Microsoft servers, SQL, Bootstrap, CSS, Java, etc.), thus ensuring the capability of timely and recurrent updates as well as the longevity of your investment in the future.

The dominant position of the company in this market and especially in particularly demanding sectors such as banking, REICs and RE Servicers amongst others, proves our ability to deliver high quality projects and be trusted.

We are convinced that all your current and future demands can be met by our wholesome and cohesive *Thesis Property Suite* and we invite you familiarize yourself with and utilize it.

Basic Applications of Thesis Property Suite

Thesis Property Management

The fully developed application for the complete and immediate management of large property portfolios, with integrated business intelligence and contact and activity management subsystems. Thesis Property Management is a powerful management and Business Information tool that covers every activity related to property management, perfectly adapted to the specific needs and requirements of the real estate market. The potential for a dynamic, multidimensional combination of information highlights every aspect of the property portfolio of each business and ensures excellent traceability. It offers unlimited combinations, informing regarding a specific time period and critical business indicators. The latter could be adjusted from the level of the entire portfolio and move down to the level of property category, area or individual owner or property. Thesis Property Management ensures direct access to any relevant information employing a variety of ways, basing the filtering strictly on operational data and concepts (e.g. property, premises, owners, tenants, managers, etc.) without any prerequisite for technical knowledge of its operation. At the same time our product consists of an automatic alert system (alerts), task assignments, automated support of multiple chart types, KPIs, safety pertaining to access rights, etc.

Basic subsystems of the application are those of the central management of real estate and/or under acquisition of real estate, even at the level of premises, the management of leases, the management of insurance contracts, the facility management of both real estate and facilities and their E/M equipment, the management related to real estate legal cases, the management of users and roles etc.

Thesis Real Estate

Offers fully developed solutions for the management of requests for the purchase and selling or renting properties, related actions, as well as extensive surveillance of procedures pertaining to participation in property auctions etc. The application offers the possibility of automated interface and communication with a website or portal on the internet, aiming at the optimal promotion of the included property portfolio, raising the standard to those of European enterprises. The portal revises the database using the data provided by visitors and users, utilizing such information for more targeted marketing campaigns.

Thesis Outsourced Property Management

A package of specialized web applications that distributes responsibilities and tasks to external partners, fully organizes your role as a property manager, reduces internal operating costs and offers a strong lead over the competition, utilizing with absolute safety, the specialization of your selected partners. The complete and functional solution to every one of your business' requirements, regardless of size, organisation, delegation, management, control, record keeping and appraisal, for a series of actions that modern property managers choose to outsource to external individuals or specialized enterprises in the respective sector, to ensure the optimal performance/cost ratio, and to minimize the risks of failure/failure etc.

With a modern and easy-to-use interface, integrated systems for connection to related applications, unlimited possibilities for customization, expansion in other areas**,** but also reporting, Thesis Property Mgmt. ensures coverage of your business' specific functional, offering integrated interface of all stakeholders, functions and information related to real estate, in a homogeneous and unified working environment. The ever-expanding package already currently supports areas such as appraisals and technical checks, evictions, brokerage and sales, other property maintenance operations etc.

Thesis BPM

In an unstable economic environment, with increasing competition and new technologies, companies are turning to Business Process Management Systems. Thesis BPM is a next generation efficient and scalable software based on processes aiming at increasing efficiency. Utilizing BPM Thesis, the management team understands exactly the operation of the basic business processes and identifies the points of improvement and automation.

Thesis BPM up values complex processes (real estate control, maturation etc.), which include multiple modes of communication and extend to multiple systems, as it is a powerful platform with a wide range of tools available for designing, operating and monitoring processes, that allows you to add, configure and capture graphical Workflows, to fully and securely meet your specific needs and requirements. The built-in process (workflows) designer ensures organization, irrespective of the underlying complexity, data structure, rules and flows. By adapting tasks, times and resources to the workflow model, analysts are able to suggest appropriate improvements to increase efficiency, reduce costs, improve productivity, etc., as

they effortlessly and in real time compare costs and performance, in order to confirm or even reform processes where anomalies/irregularities/inconsistencies are detected.

Thesis BI

Thesis BI is a query, reporting and designing powerful financial analysis & business information tool that covers every business activity. On-line and reliable detection of business info leads to accurate and timely business decisions.

The potential for a dynamic and multidimensional combination of information highlights every aspect of the business and ensures excellent traceability.

Thesis BI includes an automatic alert system, automatic generation of multiple chart types, Index / indicator system (KPIs) in GIS, safety pertaining to access rights, etc. Each report produced with the app can be the starting point for a series of prints, as one can, depending on the type of print, add or remove fields, group, put sets, swap columns and rows, generate automatically connected graphs, dashboards, etc.

Thesis GDPR

The European General Data Protection Regulation, which concerns all enterprises as well as state authorities that manage personal data, has been implemented since 2018 and provides for the formation of a uniform legal framework for the processing of personal data in all EU member states. It imposes a number of restrictions and obligations, related to the processing of personal data throughout their life cycle, the possibility of their transfer to other countries, the protection of the rights of data objects, the security (confidentiality, integrity, availability) of personal data and disclosure actions in the event of a violation. Thesis GDPR employs all available technologies that contribute to the compliance of a business with GDPR and is installed on every product of the CGSoft Thesis family alongside its partners, such as the Thesis Property & Real Estate Mgmt., Thesis BPM, Thesis BI etc., without affecting their functionality.

A detailed presentation of the characteristics of all the applications above follows.
For more information, please contact us directly (Tel: +30 210 7488 500 int. 111, Email: info@cgsoft.gr).

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Thesis
Property Management

A fully featured application for comprehensive and immediate management of large property portfolios, with integrated BI subsystems and management of contacts and activities. Learn instantly and effortlessly all the answers/ solutions for your properties. Without special training, draw any information, move from the aggregate data of accounts and movements to analytical, and vice versa, identify market trends / real estate categories, area etc. Access your detailed leases, archive every document, plan and photo, assign actions, set deadlines and predict results.

Thesis Property Management is a powerful management and Business Information tool that covers every activity related to property management, perfectly adapted to the specific needs and requirements of the real estate market. The potential for a dynamic and multidimensional combination of information showcases every aspect of the property portfolio of each business and ensures excellent traceability.

Thesis Property Management includes automatic alerts, task assignments, automated support of multiple chart types, KPIs, safety pertaining to access rights, etc.

Thesis Property Management uses the latest technologies to support the prompt and accurate decisions of Management, which will be based on documented business information drawn from the real estate data of each business or organization. The system offers ready-made business information in real time, without the need for user's technical knowledge to calculate it and depicts it in a plethora of ways (tables, graphs, etc.).

Thesis Property Management offers information in practically unlimited ways and combinations, apprising of a specific time period and critical business indicators, starting from the level of the entire portfolio and narrowing it down to the level of a property category, area or individual owner.

Thesis Property Management ensures alternative ways to gain direct access to information, based strictly on operational data and concepts (e.g. property, premises, owners, tenants, managers, etc.) without any requirement for special expertise.

Thesis Property Management is a fully open system that interacts and exchanges information with third-party programs, leverages data from third-party databases (Land Registry**)**, ensuring maximum productivity and free choice of tools, while minimizing the required time for recording data.

Thesis Property Management modules

Asset Management: complete and direct recording of all the data of each property, even the properties under acquisition, but also distinct areas belonging to them, from the absolutely **basic** such as code, description, Cadastral data, previous property from which it originated, address (the application has built-in automatic addressing), the regional organization for the convenience of users, up to a number of specific or non-specific information depending on the requirements of each user, such as the following: **Geographical location in** many coordinate systemς (e.g. WGS 84) and presentation of the property on the geographical background of your choice (Bing maps, Google maps etc.), **Categorization** according to the type of real estate (residential, commercial, land, etc.), to the permitted land use and any other characteristic the user wishes, **Contracts** and / or administrative acts, partial or total, transfer / change of the area of the property or the right holders on it, **Legal data** on the property, **Data on its area**, real, under contracts, under license etc., **Active contracts** (lease or lease), and **Contracts / transfers:** all contracts, administrative or judicial acts and other legal

or non-legal documents that are directly related to the property are monitored with full details of the author, dates and details of each act, changes that it brings (e.g. on the surface of the property and automatic recalculation of them) while auxiliary tables can be used for support, **Licenses**: the entire data set contained in a variety of licenses and certificates related to each property is recorded and the possibility of attaching relevant documents, photographs, drawings etc. is offered. The information entered in the license form is the file number, property to which each license corresponds to, the type of license, the area to which it refers to, whether it is active or not, its topic, the licensing authority, dates of issue and expiration, protocol details of both the original application and the License, in addition to the related manager, representative and further comments. Depending on the type of license, additional data are filled in the corresponding data Group (tab). Similarly, in a special Data Group entitled "Renewal", corresponding information is included (Application Date, protocol number, etc.),

Asset Management manage also **Financial data** (purchase or sale data, amortised value, estimated market and commercial value, replacement value, coke.) and use them in several prints and reports for a specific period per property, owner, area etc. Also, creation of automatic notifications in cases of deviation, production of property indicators (performance, LTV and so on. etc.), automatic creation of tax forms and changes etc., **Income-expenses** (rent, insurance premiums, bills, etc.): Automatic creation of records of future income-expenses/property on the basis of applicable contracts, including projected and actual payments, the ability to record multiple meters for the same property, ability to connect with other third-party applications (e.g. ERP) recording of any new or unanticipated sum, automatic warnings for delays in payments, sharing of income and expenses, based on co-ownership rates, ability to calculate communal maintenance charges, automatic generation of tax forms etc., **Operating income / expenses**, maintenance, extraordinary etc. each property/site, **Bills** and counters by class (e.g. water supply, telephony, electricity) and beneficiary, **Technical and construction elements**, active insurance policies per insured risk, additional transactions and corresponding loss notices, **Other data** that the user may want and **Comments**, concerning either the specific property, adjacent properties or even the wider area.

At the level of detail, the Asset Management subsystem manages with full historicity **Owners** and all those who have or have had in the past a lien on the property, **Problems** and **Actions** related to each property by category and type of energy, operator or external partner etc.

with the possibility of setting a reminder or next action, introducing mandatory prior approval procedure etc., **Property spaces** per level, use or any other feature desired by the user, **Managers** stakeholders-managers, internal/external partners, technicians, facility managers, public, private **Documents** with a protocol number, connected or not with specific actions, problems etc. Technical **Drawings and Studies** by type and the ability to attach them (common feature of all applications) or import them as files of any format (e.g. doc, pdf, jpeg, cad, dwg, kml), either directly from the scanner and their printed form if they do not exist in electronic.

Also offered search functionality based on the content of attached files (e.g. a word), **Notes** (rough markings of users for the property) etc., **Valuations**: the information entered in the Real Estate valuations form is the file number, estimated property and / or place, the purpose of the appraisal, the contractor and the date of evaluation, the appraiser and the estimate date, the methods and range of assessment, the cost, the date of receipt, check boxes if the International Valuation Standards have been followed, as well as if subsequent actions are required and the values listed in each estimate (e.g. commercial, lease, fair sale, replacement) and **Technical checks**: all the details of scheduled or extraordinary technical inspection and autopsy related to each property are recorded as is the possibility of attaching the relevant documents, vouchers, photographs, drawings etc. Information such as the file number, property and/or place inspected, the purpose of the audit, the contractor and the date of the designation, the auditor and the date of the audit, the extent and result of the audit, the cost, the receiving date, the date of the planned re-audit (if applicable), as well as if subsequent actions are required and the detailed costs listed in each audit/autopsy of the property.

Insurance contracts: active or inactive contracts per property and/or space, with full recording of all the terms of each insurance policy, the ability to automatically import and export data from and to Excel files, record and monitor possible additions, appendices, announcement of losses and monitoring of partial or total coverage of these etc.

Lease/Lease/sublease contracts etc.: Covers active or non-active contracts of individual or Group properties with full recording of all the data of each contract, the parties, the terms and guarantees thereof with the possibility of supporting complex agreements(e.g. based on the index of consumer prices and business turnover) and/or restrictions, detailed recording of regular or exceptional adjustments, creation of a plan of receipts/payments, monitoring the execution of the aforementioned and automatic notification process if there are deviations,

recording with full action history related to the specific contract, processing of what-if scenarios (e.g. rent adjustments on the projected average CPI for the following year) etc.

Facility Management: calculates and manages entirely and safely all the communal maintenance charges per property, space, owner, tenant, outlet category etc, as well as the regular or unanticipated maintenance of both the buildings and the equipment connected to any of them –and / or space thereof (e.g. air conditioning units, elevators and so on.), monitors the relevant payments and receipts, creates automatic notifications in case of deviations, etc.

Contacts / Activities / Calendar: the product includes a built-in data recording subsystem of all contacts and relationships with their respective features, a personal calendar (daily, weekly, etc) as well as full documentation of task assignment and its accomplishment per user, cost, follow up etc. Finally, Thesis Property Management includes the ability to connect with IP call centres and utilize their capabilities to offer faster user service and **Legislation**: the product includes a subsystem of recording and searching with a variety of ways: related to real estate, land utilization, urban planning regime, protection of the built and natural environment, national and European legislation and case law, further categorized by type, content, year etc.

Legal cases: this subsystem considers the history pertaining to all legal cases concerning a particular property as well as owner (current and/or former). Indicatively: eviction of a former owner or tenant, acquisition of a property, etc. Simultaneously, it manages all relevant documents and actions, with built-in capabilities for creating personalized documents (extrajudicial)**,** automated or manual reminders, follow up, etc.

Business Alerts: Thesis Property Management supports a system of automatic alerts. In addition, task assignment to specific users or groups of users is possible. The aforementioned actions can be activated automatically when given business conditions occur. Notifications are sent automatically to selected recipients using electronic messages (emails, SMS) and with a full analysis of the operational conditions that caused them. This ensures that appropriate recipients are immediately and effectively informed of operational events that may occur and either additional handling is required to address them, or they are undesirable events and should be dealt with immediately.

Business Intelligence: built-in Thesis BI searches, correlates and distributes business information, based on business entities (e.g. owner, property category, income etc). The operator can be informed of each associated concept using just one business entity to start with. This business intelligence tool is fully integrated with office automation tools and enables the construction of specific reports. It notifies the business strategy makers and financial managers, with critical quantitative data, measuring the performance of each property and the fluctuations of the critical indicators of the real estate market over time, offering essential information on the trends of these indicators and their changes.
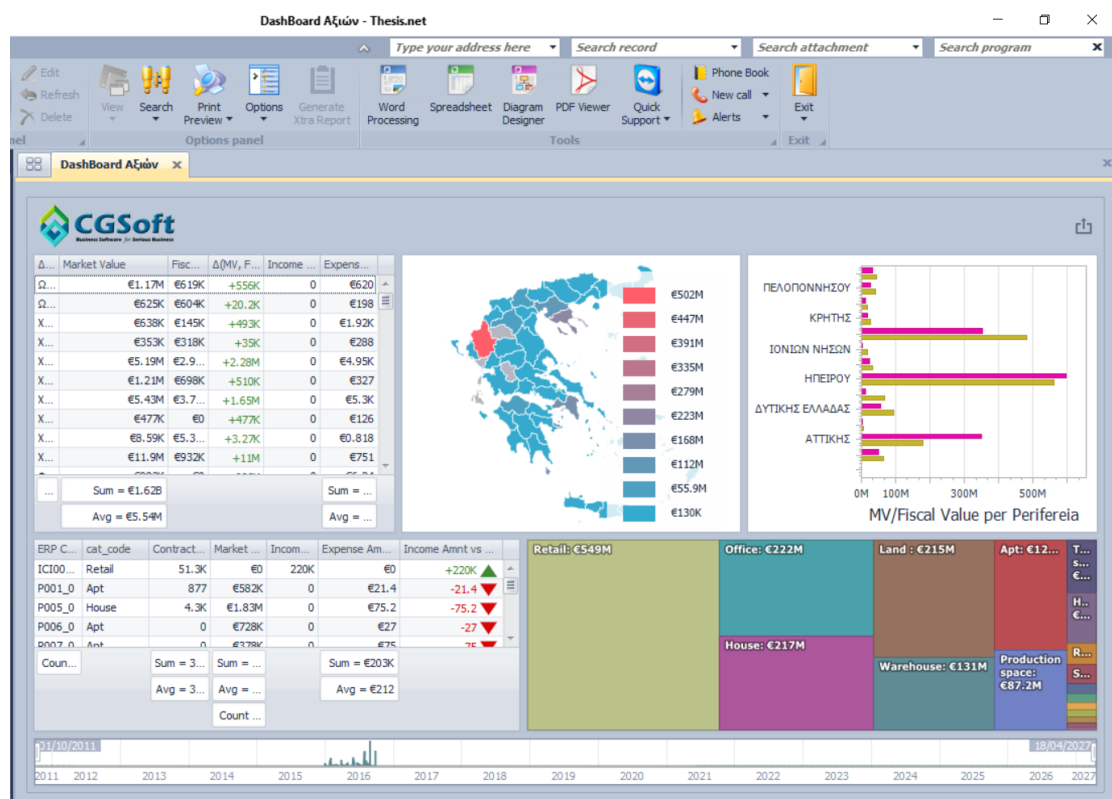
The application offers numerous prints and reports as well as the possibility of developing new ones based on the needs of each business. Indicatively, we mention the following: projected and actual income expenses per property per month, vacant properties per area, category, owner, type, etc., lease adjustments, assignments of technical checks, budget, property data, feasibility approval table of actions, damage record sheet, event announcement, estimates and/or technical checks per property, appraiser, folder, geographical display of specific properties depending on the type, situation, category etc, What-if reports of projected income and expenses according to an estimate of the course of inflation (CPI) etc.

## Integrated purchase and lease management solutions

Thesis
Real Estate

The proposed solution for Integrated Management, Promotion and real estate trading with incorporated business intelligence subsystems is comprised of the following modules:

- Creation of a, independent or linked to the Thesis Property Mgmt., database with full details of properties to be disposed of or searched (commercial, legal, technical). Also included are related actions, with the possibility of automatic interconnection with cartographic backgrounds (Google maps), notifications in case of failures or need of interventions and monitoring through integrated computerized tools producing indicators and reports.

- Creation of a comprehensive and fully operational database featuring customer data, prospective buyers/employees, interested investment companies and a variety of stakeholders. This provides the user with the ability to create and monitor purchasing / hiring or investment criteria of each interested party, targeted promotions (campaigns), recording actions, accounting assessment of each of the above etc. The above section is covered with Thesis Real Estate products as well as Thesis CRM.

- Interface and communication with a website or portal on the internet aiming at the optimal promotion of the company's property portfolio, achieving the standards of similar European enterprises. The portal will be run by the databases of the first two modules, but also revise it using the data provided by visitors and users, utilizing such information for more targeted marketing campaigns.

- Day-to-day management and organization of the Q & A system with the use of Case Management as well as organized and regular promotion of real estate.

Thesis Real Estate Basic Characteristics

Demand requests: the application manages any demand request comprehensively and in its entirety, referring to any purpose (purchase, lease, etc.), with any feature (e.g. orientation, transport access, location, floor, heating infrastructure, communication, security, structural elements and materials used, number and specific characteristics of internal and external spaces per category of use etc.).

For each request, all relevant actions (electronic, telephone, written, direct meetings, ads etc.) are monitored with detailed recording of the costs, operators, external partners, etc.
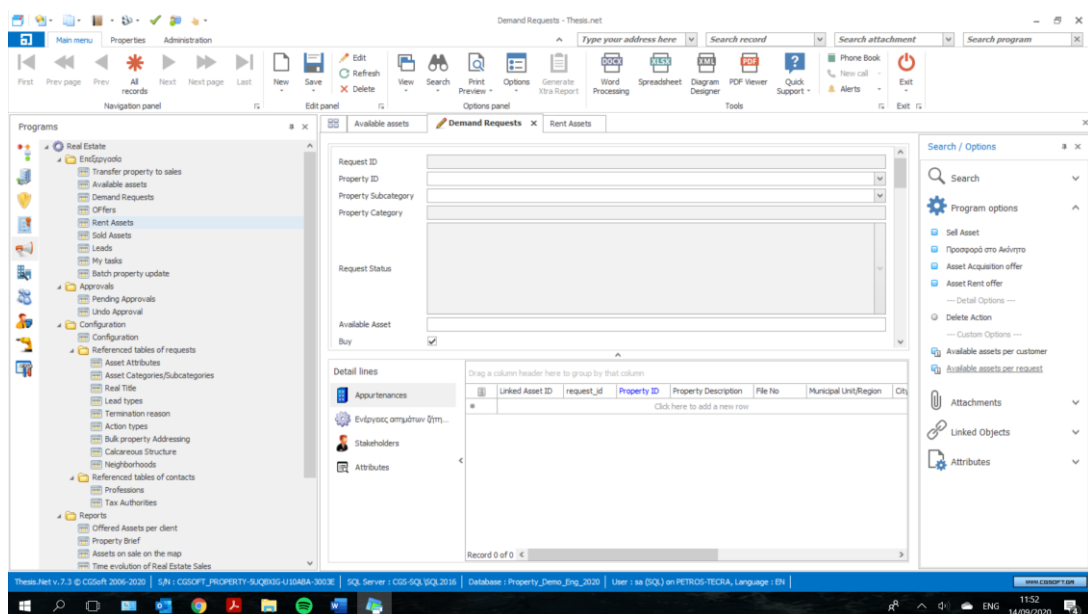
The ability to attach an unlimited number of files (texts, photos, illustrations, emails etc.) for each action is also provided. Similarly, involved persons (potential bidders, brokers, owners, craftsmen, appraisers, competent operators, etc.), their activities, etc. are monitored, while a detailed and individualized calendar of activities is kept in the system.

Irrespectively of the requests received by us, the application manages requests collected from third party ads on specific websites or publications, while simultaneously examines our own publications in the above information points (printed or electronic) and their respective costs.

Bid requests: the application manages any bid request comprehensively and in its entirety, referring to any purpose (sale, lease, etc.), with any features (e.g. geographical position in any recognised system of geocoordinates, cartographic, topographic and photographic mapping, orientation, transport access, location, floor, heating infrastructure, communication, security,

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structural elements and materials used, specific characteristics of Interior and exterior spaces per category of use, etc.). For each request, all relevant actions (electronic, telephone, written, direct meetings, ads etc.) are monitored with detailed recording of the costs, operators, external partners, etc.

The ability to attach an unlimited number of files (texts, photos, illustrations, emails etc.) for each action is also provided. Similarly, involved persons (potential buyers or tenants, brokers, co-owners, craftsmen, appraisers, competent operators, etc.), their activities, etc. are monitored, while a detailed and individualized calendar of activities is kept in the system.

Irrespectively of the requests received by us, the application manages requests collected from third party ads on specific websites or publications, while simultaneously examines our own publications in the above information points (printed or electronic) and their respective costs.

Contacts: the application fully and directly manages all the details (professional, financial, etc.) of the individuals involved with the managed properties and/or with the company itself that uses the system.

Analytics: the ability to define and monitor (in run time) critical business indicators (KPIs) is included in the Thesis Real Estate. By utilizing the built-in BI tools of the Thesis Framework such as: Graph designer, Report designer, Pivot Technology, Dashboard Designer, etc. special indicators are produced and displayed (on demand).
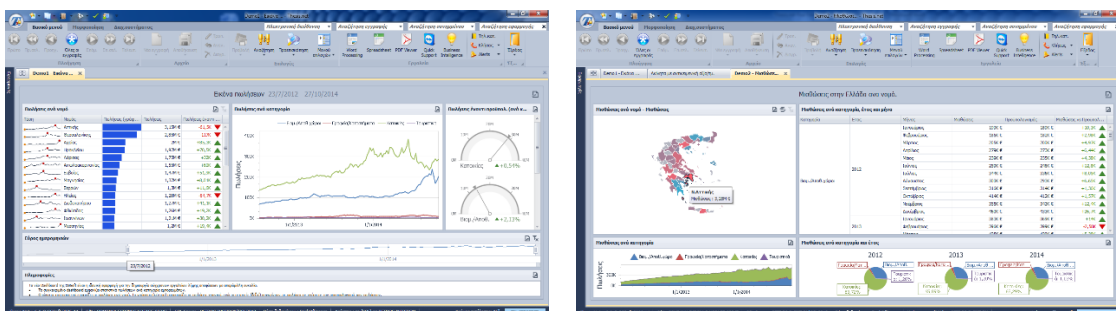
In addition, reliable tools are used for the detection (drill down**)** of business information. Notifications can be sent automatically to selected recipients via email. This ensures immediate and effective update of appropriate recipients.

Thesis Outsourced

Property Management

Ensure maximum performance with minimum resources via internet

A package of specialized web applications that distributes responsibilities and tasks to external partners, fully organizes your role as a property manager, reduces internal operating costs and offers a strong lead over the competition, utilizing with absolute safety, the specialization of your selected partners.

CGSoft, with decades-long experience in designing, implementing and supporting real estate portfolio management applications, offers the package of web applications Thesis Outsourced Property Management, for full and functional coverage of every business need, regardless of size, organization, assignment, management, control, recording and appraisal. It covers a series of actions, which modern property managers choose to outsource to individual partners or specialized businesses in order to ensure the optimal performance and cost ratio, but also to minimize the risks of failure.

With a modern and user friendly interface, built-in connection systems with all related applications (Thesis property Mgmt. & Thesis Real Estate, Thesis BPM etc.), unlimited possibilities of adaptation and continuous expansion in new areas, CGSoft ensures the ability to meet the specific operational needs of each business, offering integrated interconnection of all stakeholders, functions and information relating to one or more properties in a homogeneous and unified working environment.

Thesis Outsourced Property Management Key areas

Brokerage. The cooperating brokers are assigned a list of properties by the responsible asset manager, after entering the respective application. By selecting one, the operators are redirected to the specific form, including all of the relevant property data as well as attached documents regarding the transmitting of the property and the detailed records of all relevant work carried out, such as Promotional activities, expressions of interest from prospective buyers, offers etc. For all actions performed on the desktop application, the corresponding executives are automatically updated online.

Sales. The application follows all successive steps from the moment of offer approval until the contract signing of the sale. The properties that are in this process are monitored with three different markings, depending on the degree of maturity or failure of the process: for sale, sales, withdrawal**.** Provisions have been prepared regarding approval procedures, monitoring of the collection and transfer of necessary documents, as well as all actions and persons involved (notary, lawyers etc.), for the drafting and signing of the relevant contract. At any time during the said process, a withdrawal option is available for both parties involved in the transaction, with immediate notification of the supervising account officer.

Technical checks / Appraisals. The process begins with the registration of the required valuation on the property and selection of an external partner. An entry is automatically generated in the Valuations/Technical checks form of the Thesis Property Mgmt. If necessary, specific space, purpose and type of control can also be stated. Actions related to termination are overseen in a similar way, enriched nonetheless with the corresponding data. Upon completion of the stated procedure, the external partner ceases to view the Technical Report, and an update is received by the internal operator of the technical inspection, who can then approve the data, if desired. In case a settlement is required, then it will automatically inherit the settlement amount from the technical report, as well as the external partner. In the end, the external partner is informed to proceed with its completion automatically.

Other Work. Thorough management of a series of tasks, which relate to specific properties, such as photographing, network reconnection, repairs, cleaning, demolition (partial or total) of properties, etc. Tasks aimed at external partners can be assigned through the process of "mass creation of actions "by adding the field of the selected external partner, who can update the status of the action, fill in comments, as well as upload photos and files related to the action. When an action is created, the external partner is informed by email and when its status is changed by the external partner, the internal operator.

Thesis BPM

Integrated Business Process Management Solution

In an unstable economic environment, with increasing competition and new technologies, companies are turning to Business Process Management Systems. Thesis BPM is a next generation efficient and scalable software based on processes aiming at increasing efficiency. Utilizing BPM Thesis, he management team understands exactly the operation of the core business processes and identifies the points of improvement and automation.

Thesis BPM upvalues complex processes (real estate control, real estate maturation etc.), which include multiple modes of communication and extend to multiple systems, as it is a powerful platform with a wide range of tools available for designing, operating and monitoring processes that allows you to add, configure and capture graphical Workflows, to fully and securely meet your specific needs and requirements. The built-in process designer (workflows) ensures organization, irrespective of the underlying complexity, data structure, rules and flows.

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The BPM Thesis concisely:

- Process driven system
- Cohesive environment
- Integrated control system
- Desktop & WEB environment
- Process designer
- Notification management (emails, SMS)
- Performance Indicators

Thesis BPM manages continuous changes in business processes flawlessly. Its flexible, tailored approach contributes to Business Excellence and high productivity.

Monitoring & analysis:

Variety of monitoring and analysis reports are included in the system such as:
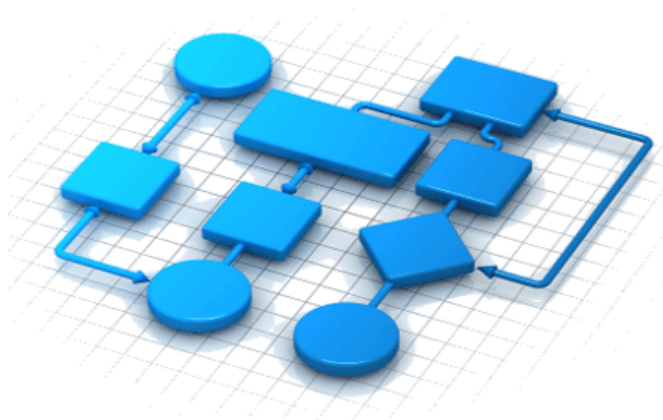
- Workflow chart
- Task tree per process
- Process & Task table
- Unfinished tasks
- Tasks by date & type (pivot)
- Process completion times
- Task completion times
- Task delays per user

The Thesis BPM environment provides first-class information (Dashboards, Key Performance Indicators, KPIs) in real time. At the same time the notification system creates and sends notifications to users.

Reduced costs: by utilizing the built-in controls and process designer, the company automates its operations directly and efficiently. Rules regarding procedures and data, conditional flows, automatic calculations, etc. can be adapted to your business' actual needs.
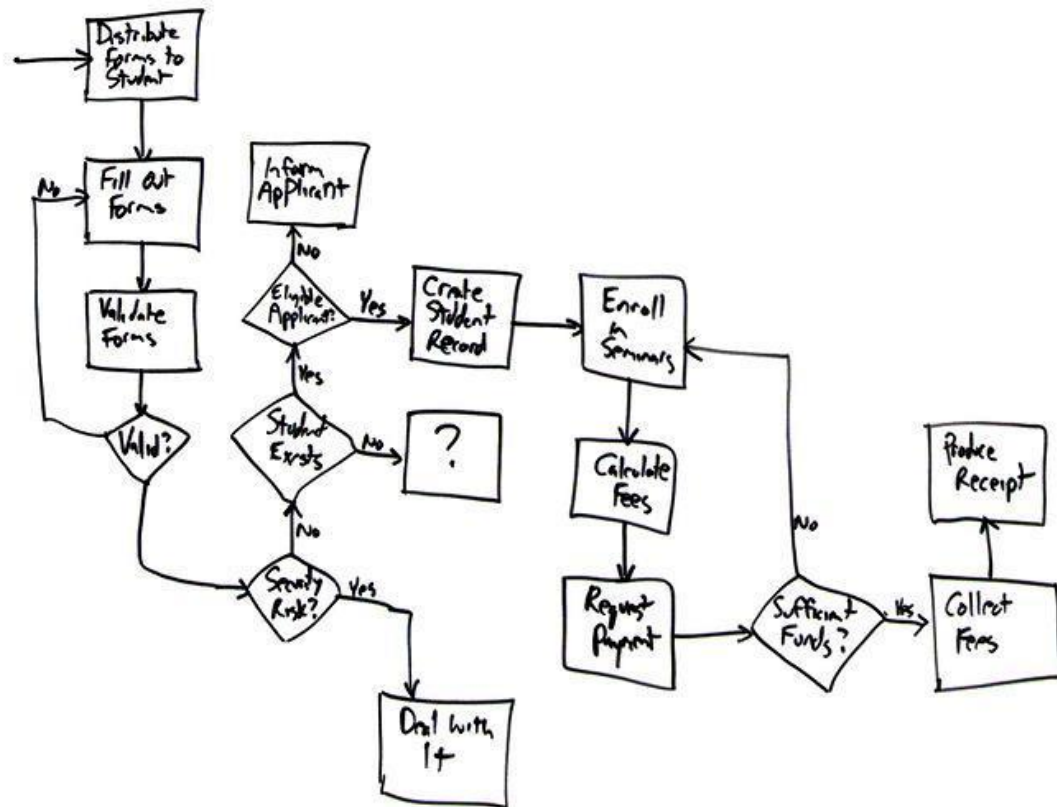
Increased efficiency (in process flow): Thesis BMP monitors, tests and ultimately improves business processes. By adapting tasks, times and resources, to the workflow model, analysts are able to suggest appropriate improvements in order to improve efficiency, reduce costs and enhance productivity, as they effortlessly and in real time compare costs and performance, in order to confirm or even reform processes, at the points where anomalies/irregularities/inconsistencies are detected. Thesis BPM integrates a tool enabling process and user review. Managers and analysts identify bottlenecks and points of low efficiency, therefore reforming processes and mechanisms to enhance efficiency.

Increased speed: Thesis BPM reduces delays, user errors and response and task completion time. The integrated process designer accelerates the implementation of the processes thus greatly improving the full implementation cycle.

Thesis BI
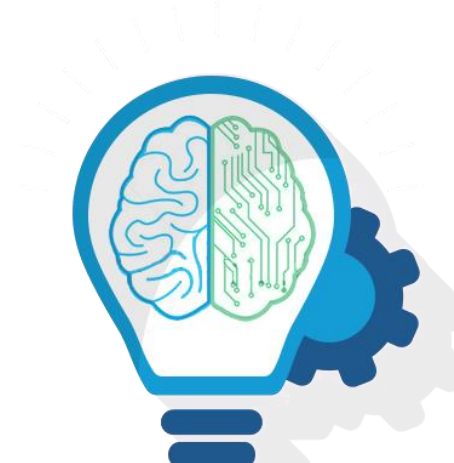
## Operational information and management Center

Thesis BI a powerful financial analysis and Business Information tool that covers every business activity. On-line and reliable detection of business info leads to accurate and timely business decisions. The potential for a dynamic and multidimensional combination of information, highlights every aspect of the business and ensures excellent traceability.

Thesis BI includes an automatic alert system, automatic generation of multiple chart types, Index / indicator system (KPIs) in GIS, safety pertaining to access rights, etc.

Thesis BI offers business information in limitless ways and combinations, apprising of critical business indicators, starting from the level of the entire company and narrowing it down to the level of an individual costumer, product or service. It ensures alternative ways of accessing information based strictly on operational data and concepts.

Thesis BI is a fully open system that interacts and exchanges information with all known office automation programs, ensuring maximum productivity and free choice of tools.

Report types

Graph types

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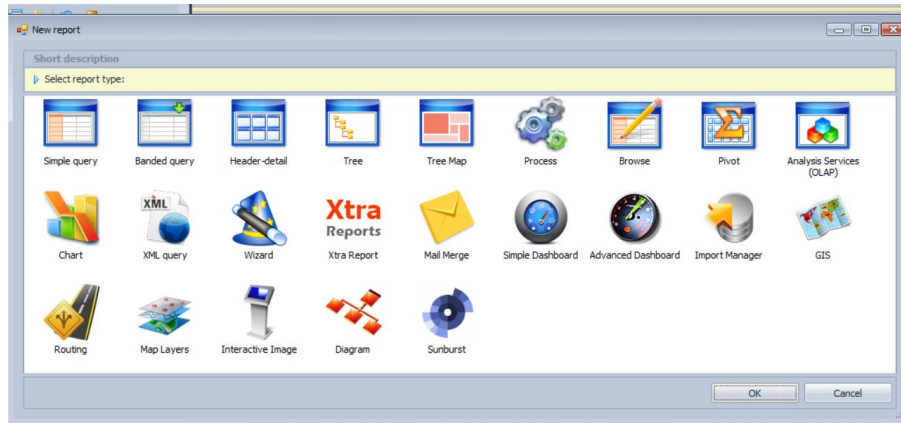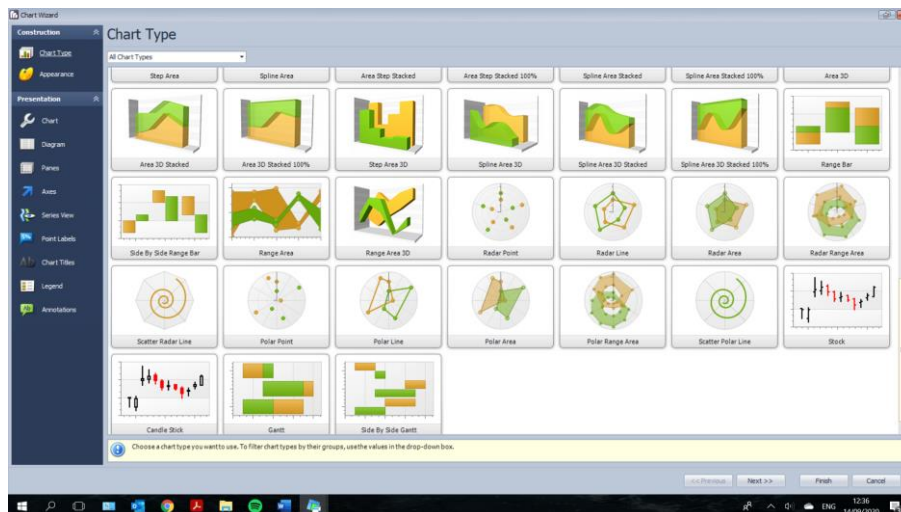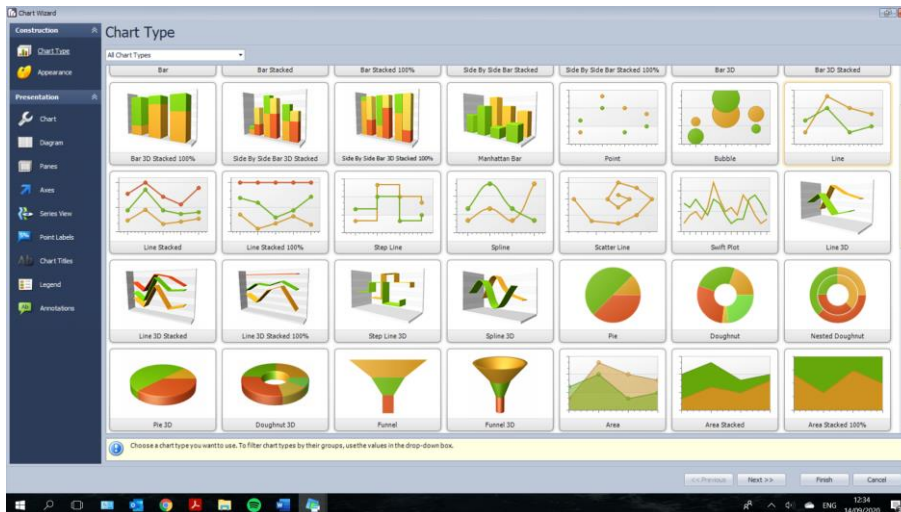
Types of queries and reports

Thesis BI is, amongst other, a query and report designer & execution tool. Each report produced with the application can be the starting point for a series of prints, as one can, depending on the type of report, add or remove fields, group, put sets, swap columns and rows, generate automatically connected graphs, dashboards, etc.

The options given for creating your own reports are the following:

Simple printing. The results of this printing are always displayed in a grid format. Configuring of any kind is possible, such as adding/removing fields, grouping, sorting, adding sets, composite filters, etc.

Simple report (with zones). Like the above, with additional features concerning printing presentation, such as: creating zones, breaking the analytical line into two or more, horizontal and vertical sets etc.

Print header-detail. You can create header-detail reports, with multiple layers, both horizontally and vertically. In order to be able to customize a report of this type, you should enter the basic query, then fill in the detail queries and how they are associated with the basic query or to each other.

Hierarchical printing. Displays the results of printing in tree view format. For the print to work, the query should contain an additional two columns, so that the program can "hang" the entries children, under the entries parents.

Process. It displays results on the screen but also performs certain functions/tasks. Select the process when you want to ensure that the query is executed within a transaction, without the fear of the update being incomplete.

Report with the ability to update. Printing that simultaneously offers the ability to update tables (entry, modification, deletion, mass modification and deletion). This type of report is used in case of changes to the data of an application table. It also offers the possibility of coping part of the report to the clipboard, transferring and modifying it to Excel and pasting it back.

Analysis services (OLAP). Connection to OLAP cubes (Online Analytical Processing). OLAP cubes contain dimensions and numerical sizes, structured hierarchically, to offer rapid answers to multidimensional questions. The program allows you to connect to either the standard cubes of the application or the cubes that you create.

Chart. Ability to create a graph from a large library of chart types. There is also the ability to automatically create a graph from either simple report or pivot. For details regarding the automatic graph guide, see the corresponding chapter.

XML.**Report** It offers the possibility to create XQueries. XQuery is an SQL query (script) that allows one to search data in XML format.

Pivot Ability to create multidimensional printing (pivot table) from any query or from existing simple printing. Pivot tables allows you to "mix" the dimensions and the numerical sizes in real time, thus creating an infinite number of reports. There is the ability to drill down from any aggregate size to the analytical lines as well as the ability to automatically create a graph from the data.

Wizard. It offers the ability to create programs in the form of an automatic driver. Using the guide, one can completely escape the limitations of reports and create a personalized program with one's own interface.

In order to compose your own automatic wizard, the only thing you need to keep in mind is that after each step, the data of the table that appears on the screen is entered into an intermediate table in SQL server named #wizard, so that the routine that will be performed in the next step can find them.

Xtra Report. Tool for the creation of report forms with built-in designer. The possibility of adding rich text, images, graphs, pivots, barcodes is provided. Sub-reports, multi-column reports, labels etc. are supported. In addition, a built-in wizard is integrated for easy creation of reports and preview conveniences.

Mail merge. It offers the possibility for mass creation of letters, reports, etc., merging data from the base with high quality texts. The generated documents can be modified by the user before they are finally printed or stored in files or sent to their respective recipients by email. Mail merge also supports image type columns (e.g. photos) which will be integrated into the generated documents in the corresponding position with the size of your choosing.

Dashboard. It is an application that can accommodate from 2 up to 9 existing reports (simple, graphs, pivots etc). The format of the reports on the screen is fully customizable. The ability to automatically load the dashboard at the start of the application, offers a wholesome picture of the business to anyone opening the application.

Import Manager. Offers the possibility of importing external data into the system. External data can come from text files, Excel files, Access files, third-party application databases, etc. Data can be entered either in existing tables of the application, or in new ones, allowing the columns to be aligned one by one. Alternatively, you can use a routine to perform the import, in case you need to process the data in parallel before importing it. Import Manager offers a preview of the data before the final import, and can be used either for single import, or for periodic / daily imports. The Import Manager also offers the possibility of Batch Import. With this option a directory (local or web) and the type of files (filter) we want to import are provided. The stored procedure that will be executed after Import, represents the final update of our database.

Cartographic reports. Report that displays data on a map (the latitude and longitude information must be included, i.e. the address and location on the map must be matched). The data supports drill down and can be displayed either in the form of a pin, a circle, or a bar. The proposed map is by Google (Google Maps), although it is possible to choose from 14 maps in total: Bing, Google, Open Street, Yahoo (political, road, satellite, hybrid, terrain maps, etc.).

For each cartographic print, one can specify the information (hint) that will appear when the mouse arrow is dragged onto the corresponding marker on the map, the form that will drill down when on the marker on the map is clicked on, as well as the type of marker on the map. The indicator shown on the map can be in the form of a circle (the positive values appear green and the negative Reds, the larger the circle the larger the values displayed), a bar (the positive values appear green and the negative Reds, the higher the height of the bar, the larger the values displayed) or a pin (which does not offer the possibility to quantify the results). Various cartographic prints appear on the following pages.
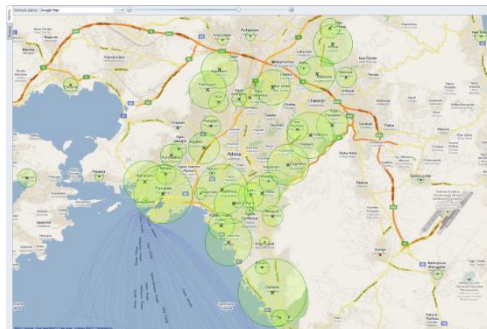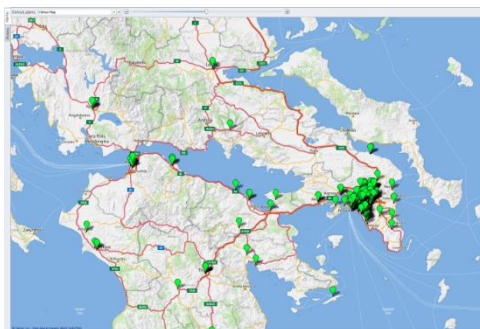
Routing. Locations can be chosen on the map, for example delivery points to costumers. Routing prints suggest the optimal route for traveling to said point, depending on your transportation method (e.g. by car, by foot). Minimal travelling distance is the criterion for suggesting the proposed route. As a starting point you can choose either a fixed address (e.g. the headquarters of your company), or one of the delivery points. The results of the routing are displayed either on the map or in Tabular Form.

If you want to discard one or more points and recalculate the routing, this can be done easily if you go to the table (table page at the top left of the screen), "filter" the records (delivery points) you want to discard and recalculate the routing by clicking on the map page. The routing uses Traveling Salesman Problem Algorithms with successive route improvements.

Therefore, the calculation is not instantaneous but requires some seconds, depending on the number of points contained in the itinerary. An example of routing is shown in the image below.
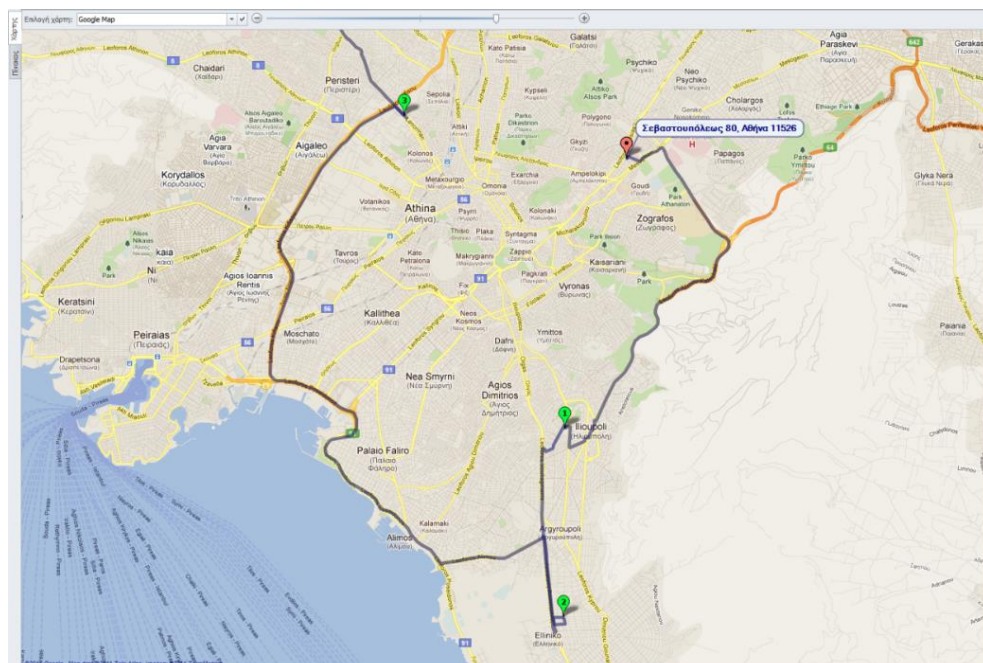
The starting point is marked with a red marker, while the delivery points are marked with ascending numbering. If you drag the mouse over the marker, you will be shown a sign with information (hint) containing the customer, his address, the document (s)

issued for him, the distance in km and the time in minutes from the previous delivery point. At the bottom of the screen, information about the total distance and the total time required for the entire journey is displayed.

Map Layers. With reports of this type you can draw paths and polygons and display them on a map. With this option you can e.g. to depict on the map buildings, plots, parcels, quarries, crops, wider areas, etc. The accuracy of each polygon depends on the number of points that will be given.

The design of the polygons is fully customizable. Specifically, you can configure Polygon line thickness, colour and style, Polygon surface colour, Polygon Pattern colour and Polygon transparency.

All polygons - overlapping or not - are fully integrated with the respective map, while the user is offered the opportunity to choose on the fly which polygons will be active at any time. The following image shows a simple example of a Map Layers print.

Interactive Image. In this type of print, pictures/ photos can be inserted, on which information can be depicted in designated areas.

Thesis GDPR

The European General Data Protection Regulation, which concerns all private, public enterprises and state authorities that manage general personal data, provides for the formation of a single legal framework for the processing of personal data in the EU member states. This places a number of restrictions and obligations on enterprises based in the EU that are required to implement, including the processing of personal data, protection of the rights of natural persons, security (confidentiality, integrity, availability) of personal data and disclosure actions in the event of a violation.

Thesis GDPR employs all available technologies that contribute to the compliance of a business with GDPR and is installed on every product of the CGSoft Thesis family alongside its partners, such as the Thesis ERP, Property Mgmt, Real Estate, BPM etc., without affecting their functionality.

The functions contained in the Thesis GDPR are as follows:

Row level Security (RLS) this option maintains policies-with only one active at a time, as well as user accessibility conditions (Select, Update, Delete, others). At the same time, specific roles and/or individual users are defined, combined with security levels (No records, Specific records with criteria, All records). Then the activation of the selected policy follows. The function of Row level Security is offered at server and database level and is independent (transparent) from existing or future forms (screens) of program management, printouts, third programs or even from SQL Management Studio.
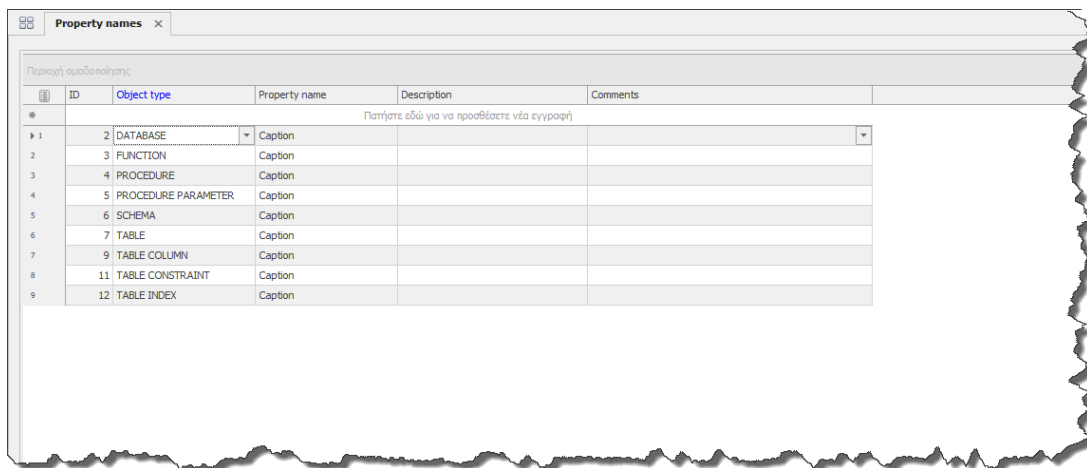
Dynamic Data Masking (DDM) this function defines and configures – masks the application columns for users - roles with access rights. The basic differentiation with Row level Security is that while RLS operates at Table line level, DDM is applied to specific columns of the same line. The masks are of many kinds (default (), email, random (), partial () etc.). Finally, system administrators have the right to UNMASK in advance.

Always encrypted columns this method allows the client to encrypt by concealing the encryption keys from the Database. The process provides for selection of encryption columns characterized by type, length, collation, caption, encryption type, algorithm, and key of encryption. By selecting Always Encrypted and installing the certificate, it is possible to display the actual data contained in the encrypted columns of the tables. For the correct operation of Always Encrypted, a certificate, a master key client and a column encryption key are required.

Extended properties-Property names & Property values This feature defines the database objects that are linked to the extended properties (e.g. columns of tables with sensitive data). The objects can be, DATABASE, FUNCTION & function PARAMETER, PROCEDURE & PROCEDURE PARAMETER, SCHEMA, TABLE & TABLE COLUMN, table constrain, table INDEX, table TRIGGER, VIEW. The extended properties selected are assigned to each of the object types. Finally, the values of extended properties are introduced.

	ID	Object type	Property name	Description	Comments	
			Πατήστε εδώ για να προσθέσετε νέα εγγραφή			
▶ 1	2	DATABASE	Caption			
2	3	FUNCTION	Caption			
3	4	PROCEDURE	Caption			
4	5	PROCEDURE PARAMETER	Caption			
5	6	SCHEMA	Caption			
6	7	TABLE	Caption			
7	9	TABLE COLUMN	Caption			
8	11	TABLE CONSTRAINT	Caption			
9	12	TABLE INDEX	Caption			

SQL Audit-Server audits & database specifications in this mode an audit name and storage point of audit activities is inserted. The objects (tables and/or routines) of the monitoring and the corresponding events are filled in. After the process is completed, it is activated from the Status field. At any time, an audit can be either active or inactive.

SQL Audit-Read database audits this function displays all activities recorded in all audits in every file. For each activity, its time and type, user, SQL instance & base, table, corresponding query, the name of the file in which it was recorded, and other details are documented. By applying appropriate filters, any user's access to any table is quickly and safely detected.

Temporal Tables With the use of SQL audit, one has access to the activities of users on the tables of the application. Temporary tables are used to access changes. The function is enabled or disabled with "Status flag "from the data tracking panel history.

Temporal Tables-Historical data this feature displays the historical data of each table that is listed in the temporary tables for the data recording period. Depending on the table and the type of printing, the options are supported: as of, from, between, CONTAINED in and ALL.

Transport Layer Security (TLS) the encrypted connection (TLS) ensures that data is encrypted during transfer to and from the database. In order to activate TLS on SQL Server, the Server must be given a certificate, the Server must be properly configured to accept encrypted connections and finally, the client parameters must be configured to require encrypted connections. The above certificate is available from a competent authority issuing digital certificates or alternatively from the self-signed certificate accompanying SQL Server.

Transparent Data Encryption (TDE) TDE supports the data protection script at the physical storage layer. With this feature, the data in the database tables are not encrypted directly. TDE performs real-time encryption and decryption of the database, backup, and transaction logs, without any need for application changes. TDE protects physical data files (mdf and ldf). If the said files are moved to another Server, then they cannot be opened and exploited. To protect a database with a TDE, the following are required: a) create a master key, b) create a certificate that is protected by the master key, C) create a database encryption key that is protected by the certificate and D) designate the use of encryption to the database.

Selected Thesis Property Suite References

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