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[ Updated: November 2014 ]
User interface
When you start GeODin your databases are shown on the left hand side. In this example there is the London database containing one project. There are also three database nodes called <Objects>, <Measurements> and <Documents>.
User interface (2)

Top-left there are two tabs for <Databases> and <System>, bottom-left are two icons for <Layout overview> and <Edit graphics> and on the top right are icons for the <GeODin Help> and <Information>.
The screen is divided into three areas. Left is a hierarchal view of GeODin databases, projects, objects, documents etc. Centre-left are the GeODin methods (to interact with the objects). The largest window panel on the right-hand side shows the active methods.
User interface (4)

You can use many active methods at the same time (data collection, measurement data, graphic editing etc.). Some methods open a new window on top of the active methods panel (cross-sections and site plans), or outside of GeODin (e.g. exports).
Objects & object types
Objects & object types (1)

An object is part of a GeODin project. Often objects are called boreholes or locations, though these are only types of objects, albeit the most common. Objects are always described by general data such as name, coordinates, client, project title etc.
Each object type has a particular data structure for recording information. Examples are the BS 5930 and G1 Geotechnical borehole object types. GeODin presents a choice of object types in the <New object> method.
The <General borehole log> object type (shown below) contains general data fields, distributed over three tabs (location & site information and extras). The geological layer data collection conforms to the British Standard BS 5930.
The G1 borehole contains much more specialized general data for the requirements of onshore and offshore geotechnical work spread over four tabs. The geological data collection supports many international standards (ASTM, BS 5930, GOST, EN ISO etc.)
Organising object types
All the object types in your GeODin installation are listed under the <System> tab in the <Object types> node. The number of object types can vary greatly: in this example there are seventeen, nine of which nine are types of documents.
Organising object types (2)

To install a new object type choose the <Install> method. This can be carried out in three ways: by choosing a folder containing existing object types, selecting a ZIP compressed folder with objects, or by using the GeODin website link.
To update an installed object type, select the object type under the <System configuration> and start the <Update> method. The same window as for installing objects opens, where you then have to choose the source and then proceed by clicking <Update>.
Organising object types (4)

Object type properties can be edited by starting the <Properties> method for a selected object type. There are options to allow object type creation (left unchecked only editing of existing objects of type is possible) and automatic data type creation for measurements.
An object type can be exported in order to give it to another use who does not have it installed. Start the `<Export>` method and choose whether to send by email, whether to password protect the ZIP file and if a layout folder is to be included.
General data
Open a project in a database and select an object. Then start the <Data management> by method by double-clicking in the method bar or by right-clicking the object and selecting from the pop-up window.
The <General data> for the chosen object is opened in one or more data masks. Change between the masks by selecting a tab. Here you can enter information on object name, project details, coordinates, heights, datum etc., depending on the type of object.
On the right hand side there is a group of three icons. Here you can switch between input masks (if more than one is present), enter default general data and perform an input check. Default general data is useful to avoid repetitive entries.
To enter information into the masks first click the <Edit object data> icon (pencil on notepad). When you are finished either click the <Save> icon or choose another object (which saves the current one automatically).
Some entry fields require an input without which you cannot save the object information. Usually these fields are marked in blue. Note that coordinate fields (X,Y, Z) are automatically filled with zero values. These can be changed when information is available.
Geological data
Open a project in a database and select an object. Then start the <Data management> by method by double-clicking in the method bar or by right-clicking the object and selecting from the pop-up window.
By default GeODin opens an object displaying the <General data>. Choose the icon to the right <Layer data> to open the editor for entering geological data collection.
Click the <Edit object data> icon (pencil on notebook) to begin editing. This activates further icons to insert, duplicate and delete layers. Add a layer and fill out the appropriate fields. Note that the number and type of entry fields depend on your object type.
For each layer you must enter a lower boundary depth. Previous and following layer depths are shown as appropriate. Fields for petrographical descriptions, colour, bedding etc. may use codes or drop-down menus. Other fields allow you to enter remarks.
When entering data in fields that uses codes you can look up an unknown code by clicking the “?” on the right hand side. This opens up the dictionary in a new window showing a list of possible entries.
You can search for a term using either <Text> or <Code>, with additional options for full text and case sensitivity. The lower window pane updates automatically with each search entry. For example by entering an “s” terms for sand will be shown.
To navigate between layers use the arrow icons for first, previous, next and last layers. A graphic preview is shown right, with the current layer highlighted between red lines and in bold text in the lower window panel.
Geotechnical data
Open a project in a database and select an object. Then start the <Data management> by method by double-clicking in the method bar or by right-clicking the object and selecting from the pop-up window.
Choose the <Data sequences> icon from the tool bar. A list of geotechnical parameters is shown on the left with the corresponding depths and values on the right. Click the <Edit object data> icon to make changes.
Existing data sequences may be edited by selecting the depth or value. A sequence may also be renamed, exported as a .csv file or deleted. Calculated sequences allow the use of formulae and layouts to create new sequences from existing ones.
To create a new data sequence click the <New> button and enter a name. This is then shown selected in the list and can be subsequently filled with depths and values.
Geotechnical data (5)

To add a new value click the <Insert record> icon and enter values. Use the tab key to move between columns and rows (or use the insert icons).
Use the arrow icons to navigate up and down in a data sequence. An entry can be erased using the <Delete record> icon.
Samples
Open a project in a database and select an object. Then start the <Data management> method by double-clicking in the method bar or by right-clicking the object and selecting from the pop-up window.
Samples can be entered in a table which contains depth columns (from - to), sample names, type and comments (depending upon your object type there may be more fields). Only the sample “from depth” is required. The sample/test type contains a dictionary.
A sample name should always be given so that it can be better identified when entering measurement values. Use the toolbar icons to insert, duplicate and delete records. Use the toolbar arrow icons to navigate through the sample table.
Well design
Open a project in a database and select an object. Then start the <Data management> by method by double-clicking in the method bar or by right-clicking the object and selecting from the pop-up window.
Click the <Well design data> icon. This activates a further set of icons for entering borehole, backfill, casing/piezometer/, filter details and special features. Click on the <Edit object data> icon to start data entry.
For each of the editors use the toolbar icons to insert, duplicate and delete records. Use the toolbar arrow icons to navigate through the well design tables.
There are several types of fields: some accept codes, others have drop-down menus and several require numerical values. Note that a “depth to” must be greater than a “depth from”. Depths and Diameter fields are obligatory entries.
Well design (5)

Automatically generated text fields may be edited/overwritten (e.g. in the casing editor the code “ca” produces the word “casing” in the <Type of casing> column). This can be changed to “Plastic casing”.

![Image of GeODin 8.0 software interface with a dictionary search for well design backfill]
The <Filter details> icon is only active when a filter element is selected in the casing table. Clicking the icon opens a general data mask for the filter where technical details and hydrological can be entered.
Groundwater
Groundwater (1)

Open a project in a database and select an object. Then start the <Data management> by method by double-clicking in the method bar or by right-clicking the object and selecting from the pop-up window.
Depending upon the object type groundwater can either be entered in a table or in a designated field as part of the geological layer data information.
Select the <Water levels> icon and activate the edit modus by clicking the <Edit object data> icon. Use the toolbar icons to insert, duplicate and delete records. Use the toolbar arrow icons to navigate through the water level table.
In the General Borehole Log (BS5930) enter water data in the water level observations field. Click on the “?” to see the list of available codes (e.g. lowest / highest / groundwater level). After the depth use a semi-colon to separate it from a measurement date.
Multiple entries are allowed in the BS5930 water observations field by separating entries with a comma as in the following syntax example: code(depth;date),code(depth;date)
What is a data type?
Data types are used for recording measurement values such as chemical analyses, laboratory tests and water levels. Data types are organised into parameter groups (BTEX, Anions, Atterberg Limits) and associated with samples, screens (filters) or boreholes.
Measurement values stored in data types can be compared with lists (e.g. guideline values) and used in formulae to calculate parameter sums (e.g. PAH) or even new values. A data type is arranged in groups, each of which can hold any number of parameters.
Data types can be hierarchical so that relationships exist between measurement values contained in child and parent data types (e.g. Particle Size Distribution tests). These are called complex data types.
Creating a new data type
Creating a new data type (1)

Each data type is built from one or more groups, each of which contain the parameters. First create a group and then the parameters belonging to it. There is no limit on the number of parameters or groups.
Enter a name for the data type and a three letter abbreviation. In the window < Data type settings> assign the data type to one or more measurement point types and confirm with <OK>. Further property options and shortcut keys are also available.
Creating a new data type (3)

Each data type is built from one or more groups, each of which contain the parameters. First create a group and then the parameters belonging to it. There is no limit on the number of parameters or groups.

![Data type settings](image-url)
Creating data type parameters
Creating data type parameters (1)

Click the <System> tab, select the node <Data types> and start the method <Data type settings> which opens a new window (Note: in addition to creating parameters you can also edit formulae, lists, plausibility rules and measurement programs).
Creating data type parameters (2)

Select a parameter and choose a group (e.g. Sampling). Add new parameter to the group by clicking the plus sign.
Creating data type parameters (3)

Enter a parameter name, short name, field type (text, whole number etc.), field length, decimal places and unit of measurement. Confirm mit OK. The parameter has now been added to your system.
Creating data type parameters (4)

To add the data type to a database, first select the <Database> tab, choose the database and start the method <Data type manager>. 
Creating data type parameters (5)

Choose the relevant data type and group to which you added the parameter. Tick the empty box before the parameter name to add it to your database.
Deleting data type parameters
Deleting parameters from data types (1)

Under the <Databases> tab choose a database and start the <Data Type Manager> method. Note that here you are deleting a parameter from one database and not from the data type. The latter can only be done under the <System> settings.
Deleting parameters from data types (2)

Choose the relevant data type, group and parameter and then uncheck the box to the left of the parameter name.
By clicking <OK> the parameter is processed for deletion from the database. Note that it may still be present in other databases, as well as being available in the <System> settings.
Deleting parameters from data types (4)

After checking the database for measurement values associated with the parameter a final warning appears before the deletion takes place. Once this warning has been accepted there is no undo of this command.
Deleting parameters from data types (5)

In the *<Measurement editor>* the parameter that has been deleted is now absent from the database. Note that adding the parameter again to the database does not bring back these removed values.
Borehole measurement data
Open a project in a database and select an object. Then start the <Data management> by method by double-clicking in the method bar or by right-clicking the object and selecting from the pop-up window.
Measurements for objects are not related to specific depths. Hence their usefulness lies in recording information for parameters such as soil air or groundwater pumping rates for complete boreholes, or for objects on the surface such as climate measuring stations.
Borehole measurement data (3)

Use the toolbar icons to insert, duplicate and delete records. Use the toolbar arrow icons to navigate through the measurement table. Measurement programs and views can be selected (e.g. all or used parameters measurement programs; user defined views).
Borehole measurement data (4)

Turn on editing and insert a new data record. Select a <Monitoring point ID>, enter a sample name and date; sample time is optional. Then enter your measurement values. Column widths and positioning can be customised.
Beneath the measurement panel is a rows for tabs containing parameter groups (e.g. BTEX in this example). On the right hand side are horizontal navigation arrows and a vertical parameter group selection arrow.
Further details such as detection limits and methods of analysis can be entered individually for each sample by activating the "Additional measurement information" checkbox or by clicking the mask icon.
Borehole measurement data (7)

To get a quick visual feedback on analyses tick the <Diagrams and analysis> checkbox to show column and row overviews. Plausibility controls, formulae and list comparisons can also be displayed here. Note that the <Parameter groups> box is checked by default.
Filter measurement data
Open a project from a database and choose the node <Measurement points>. This contains the categories locations, samples and screens/filters. Select filter/screens and open the method <Measurement data>.
Beneath the `<Measurement data>` toolbar there is a row of tabs. These are shown for the data types installed in the database that are associated with filters (e.g. groundwater chemistry and groundwater dynamics).
Use the toolbar icons to insert, duplicate and delete records. Use the toolbar arrow icons to navigate through the measurement table. Measurement programs and views can be selected (e.g. all or used parameters measurement programs; user defined views).
Filter data (4)

Turn on editing and insert a new data record. Select a <Monitoring point ID>, enter a sample name and date; sample time is optional. Then enter your measurement values. Column widths and positioning can be customised.
Beneath the measurement panel is a further rows of tab containing parameter groups (e.g. Anions, Cations, Metals, Organic parameter totals etc.). On the right hand side are horizontal navigation arrows and a vertical parameter group selection arrow.
Further details such as detection limits and methods of analysis can be entered individually for each sample by activating the <Additional measurement information> checkbox or by clicking the mask icon.
Column and row overview charts can be shown by checking the <Diagrams and analysis> checkbox. Plausibility controls, formulae and list comparisons can also be displayed here. Note that the <Parameter groups> box is checked by default.
Sample measurement data
Sample measurement data (1)

Open a project from a database and choose the node <Measurement points>. This contains the categories locations, samples and screens/filters. Select samples and open the method <Measurement data>.
Sample measurement data (2)

Beneath the <Measurement data> toolbar there is a row of tabs. These are shown for the data types installed in the database that are associated with samples (e.g. various geotechnical tests). On the right hand side are horizontal navigation arrows.
Use the toolbar icons to insert, duplicate and delete records. Use the toolbar arrow icons to navigate through the measurement table. Measurement programs and views can be selected (e.g. all or used parameters measurement programs; user defined views).
Sample measurement data (4)

Turn on editing and insert a new data record. Select a <Monitoring point ID>, enter an offset; the depth will be calculated automatically. Then enter your measurement values. Column widths and positioning can be customised.

![GeODin 8.0 screenshot](image-url)

**Active methods:**

<table>
<thead>
<tr>
<th>Monitoring point ID</th>
<th>Offset</th>
<th>Depth</th>
<th>Laboratory</th>
<th>Filter</th>
<th>Box id</th>
<th>Type</th>
<th>Id</th>
</tr>
</thead>
<tbody>
<tr>
<td>BH5: 1 (0.0 - 0.32)</td>
<td>0</td>
<td>0.00</td>
<td>Field</td>
<td>P1</td>
<td>Tube</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>BH4: 1 (0.0 - 0.45)</td>
<td>0</td>
<td>0.00</td>
<td>Field</td>
<td>P1</td>
<td>Tube</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>BH2: 1 (0.0 - 0.32)</td>
<td>0</td>
<td>0.00</td>
<td>Field</td>
<td>P1</td>
<td>Tube</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>BH1: 1 (0.0 - 0.45)</td>
<td>0</td>
<td>0.00</td>
<td>Field</td>
<td>P1</td>
<td>Tube</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

**Sample measurement data (4)**

*Drag a column header here to group by that column.*
Sample measurement data (5)

A tab beneath the measurement panel displays the data type long name (e.g. Unit Weights Test). Column and row overview charts are shown using the <Diagrams and analysis> checkbox. Plausibility, formulae and list comparisons can also be displayed.
Further details such as detection limits and methods of analysis can be entered individually for each sample by activating the <Additional measurement information> checkbox or by clicking the mask icon.
Column and row overview charts can be shown by checking the <Diagrams and analysis> checkbox. Plausibility controls, formulae and list comparisons can also be displayed here. Note that the <Parameter groups> box is checked by default.
Layouts
To visualize your data, select an object from a project and then start the method <Graphic printing and editing>. A layout will open on the right hand side displaying your object data. This view can also be opened by clicking the <Layout overview> icon in the bottom left of the GeODin window. Make a selection to display your data from the layouts listed.
Layouts can be stored in folders and lists with defined paths. To organize these add and delete these entries as appropriate. Remember to update if you make changes, so that new layouts appear under the <Available layouts> list in the top window.
Layouts are just templates to display data. To view another object just select it from a project in your database and the layout will update and show the new information.
Alternatively you may select the <All objects> entry in the GeODin object manager. Now when you make a selection from the available layouts, the <Objects to display> window lists these objects and allows you to cycle through them whilst updating the display.
To edit details of a current layout click the pencil icon in the graphic window. This activates the editing mode, displaying the graphic properties. In this modus objects displayed in the layout can only be updated using drag and drop.
When you select a graphic element in the layout, its’ properties are displayed to enable detailed editing of items such as scale, data source, text etc. To switch back to the layout overview click the toolbar icon, saving as required.
Fill patterns & symbols
Start the method <Graphic editing and printing> and open the layout <Borehole log>. Click the pencil icon to start editing and select the borehole log element to view its’ properties. Under <Drawing type> there are many different options to display fill patterns.
A symbol can be used as a marker in a site plan or a cross-section to indicate a borehole position. Symbols are also used in other graphic elements. In a new empty graphic, click the <Symbol> icon (blue-grey pin) and insert a symbol.
Fill patterns and symbols (3)

The properties tree shows the default symbol table (Geoddef) with over 150 different designs. Depending upon your installation further symbol (source) tables may be available (French, German, Russian etc.)
The fill, foreground and background colours and outline of a symbol may be defined in the properties tree. Hence the hundreds of GeODin symbols can be customised to make even more designs.
Dictionaries
Some GeODin data fields require a code entry instead of text. These codes are stored in a dictionary which can be accessed via the “?” at the end of the field. The name of the dictionary appears in the title bar of the window.
If you need to add a new item to a dictionary or make a change to an existing code, select the dictionary from the <Dictionaries> node in <System configuration> under the <System> tab. Open the dictionary with the <Edit> method.
Either click the <New> button or select a code and click the <Change> button. Enter a code and a text (ignoring DB-code) and click <OK>. Some codes may need additional quantificators or a fill pattern.
Dictionaries (4)

Click the <Save> icon and return to your project under the <Databases> tab. The new code can be used straight away for entering information in the object data field. A program restart is not necessary.
User settings
The method <User Settings> under the <System> tab enables proxy configuration details to be entered. If your computer is connected to a local network that’s protected from the Internet by a firewall, you may need to specify proxy.
A proxy server is a computer on a local network that acts as an intermediary between a single computer user and the Internet so that the network can ensure security, administrative control, and caching service.
To add these settings click <Use proxy> and enter the proxy server IP address, port number (usually 80), adding a user name and password if required.
GeODin Shuttle
GeODin Shuttle is free version of the GeODin software. It has the same interface, works with a Microsoft Access database and uses the same file formats as the commercial version. You can download it from our website www.geodin.com
GeODin Shuttle enables you to enter and organize geological, geotechnical, environmental and groundwater data, just as with a full GeODin licence. There are however some limitations such as the import & export of general data not being available.
The data you enter can be visualised with the method <Graphic printing and editing>. In both the screen display and on the print a watermark appears. Note that there is no watermark when the same data is displayed or printed with the commercial licence.
Since GeODin Shuttle includes much basic GeODin functionality, it is ideal for work on-site or as an additional office data entry program. To make further use of the data a GeODin licence and one or several GeODin modules are necessary.
GeODin Help
The integrated GeODin Help can be opened at any time by clicking on the “?” in the top right-hand corner of the GeODin window. Alternatively click the <F1> function key. You can also click the <Help> button in any dialogue window.
By using the <F1> key the chapter for the current topic will be opened. For instance if you opened the <Measurement data> method, then this page will be shown as a starting point in the <GeODin Help>.
There are many ways to navigate within the Help. You can use highlighted links within each help article, the tree hierarchy panel in the top-left panel, the Previous and Next theme arrows and the next to these the list Last viewed theme.
You can search for specific themes or use the full text search in the lower-left panel. Themes update interactively when you type in a search term, narrowing down your choice. To run a full text search click <Start>. Use <Stop> to limit the number of results.
The <Help> can be updated over the internet by clicking <Online update> in the method ribbon. Please check your proxy settings in <User settings> under the <System> tab if you are behind a firewall.
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