



# GenExis user guidelines for pupils

Leonardo da Vinci Programme

Transfer of Innovation Project “Computer based Exercise  
Generation and Evaluation System for Mathematics,  
Physics and Chemistry Subjects – GENEXIS”

LLP-LdV/TOI/2007/LV/003

SIA „Data Pro Grupa”  
2009

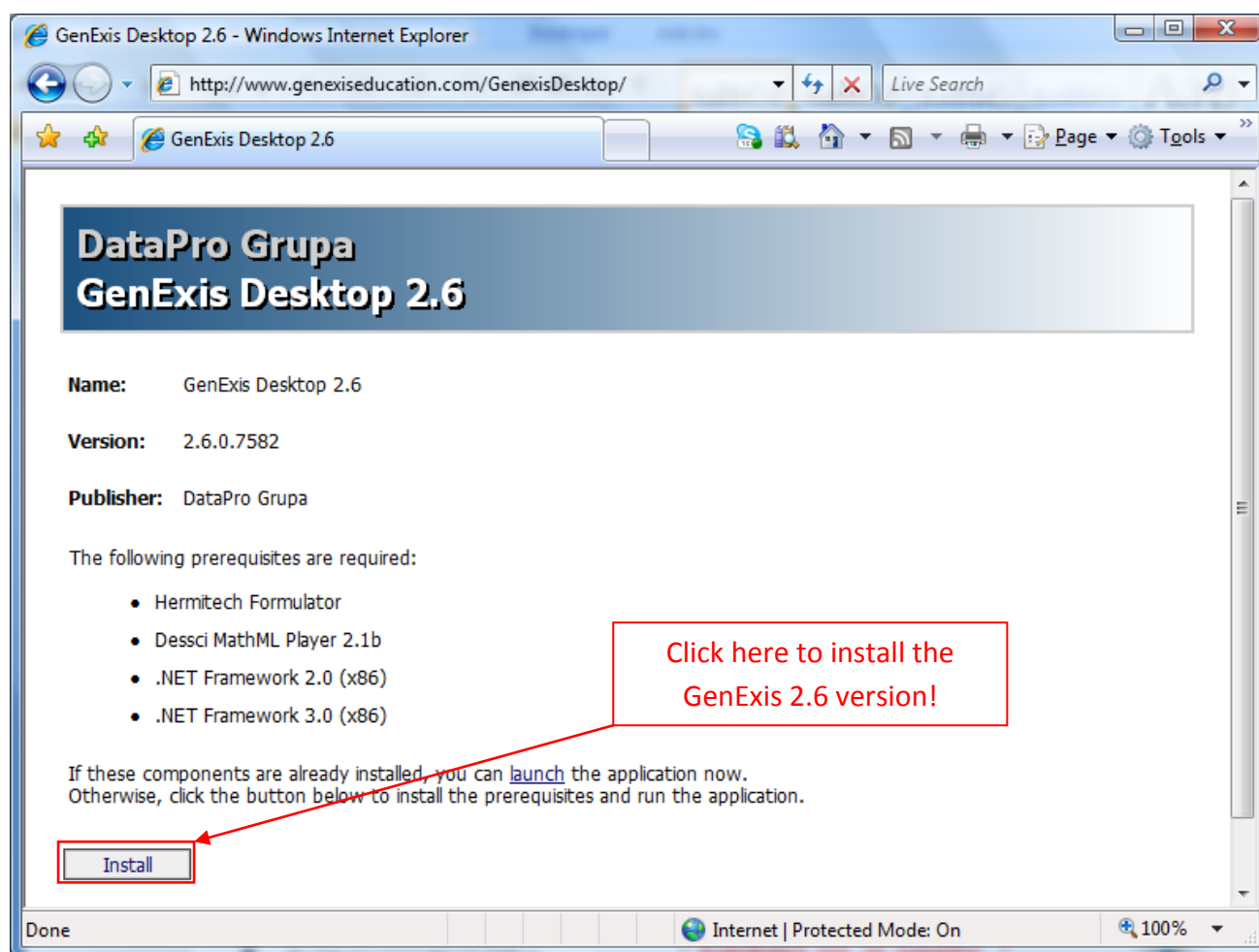
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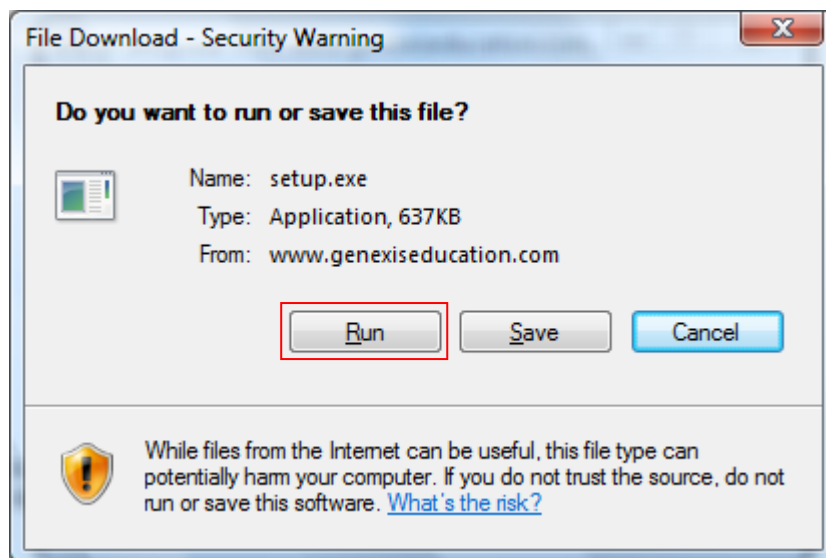
## Theme 1: GenExis installation

The installation of GenExis 2.6 is available for the **Windows XP (SP2)** or **Vista** operating systems. For the installation to be successful, sequentially perform the following steps.

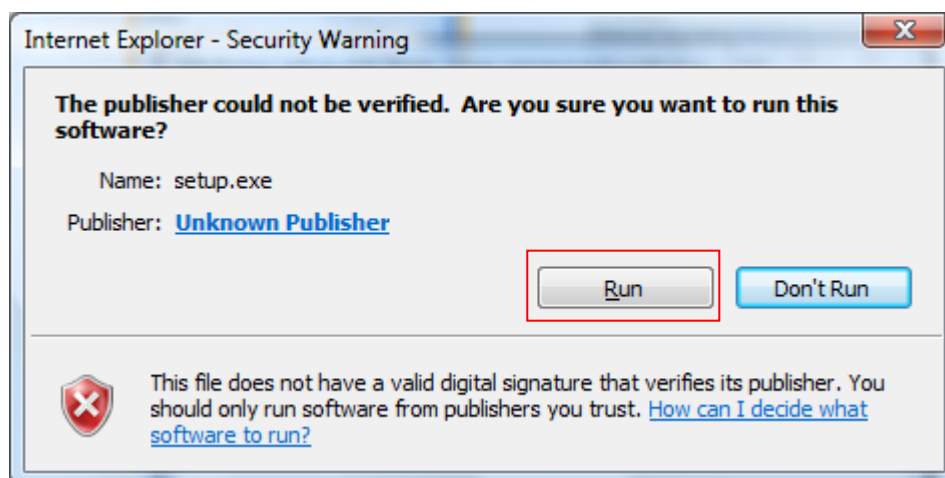
1. Open the following site: <http://genexiseducation.com/GenExisDesktop/>, using **Microsoft Internet Explorer 6.0** or a newer version (it won't be possible to perform the installation through another Internet browser). The home page which will open is shown in the following picture.
2. To install the GenExis 2.6 version, click on „Install”!



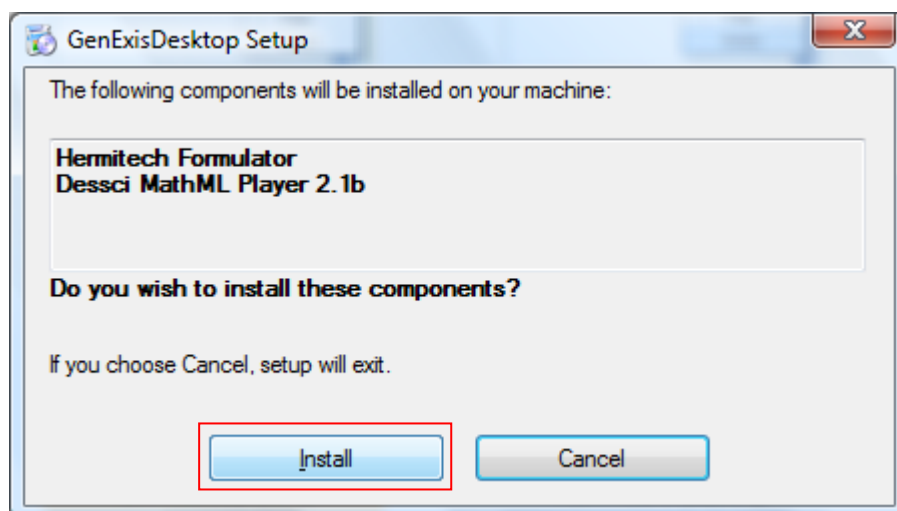
3. Sequentially Windows will offer you to “Save” or to “Run” the file. Click on „Run” (see picture).



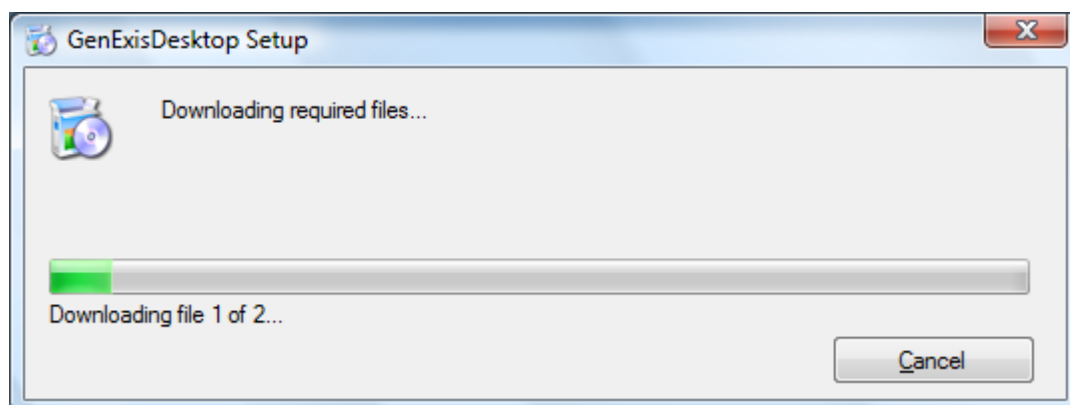
4. Then a warning with a question will appear: Are you sure you want to run this software? Again select “Run” (see picture).



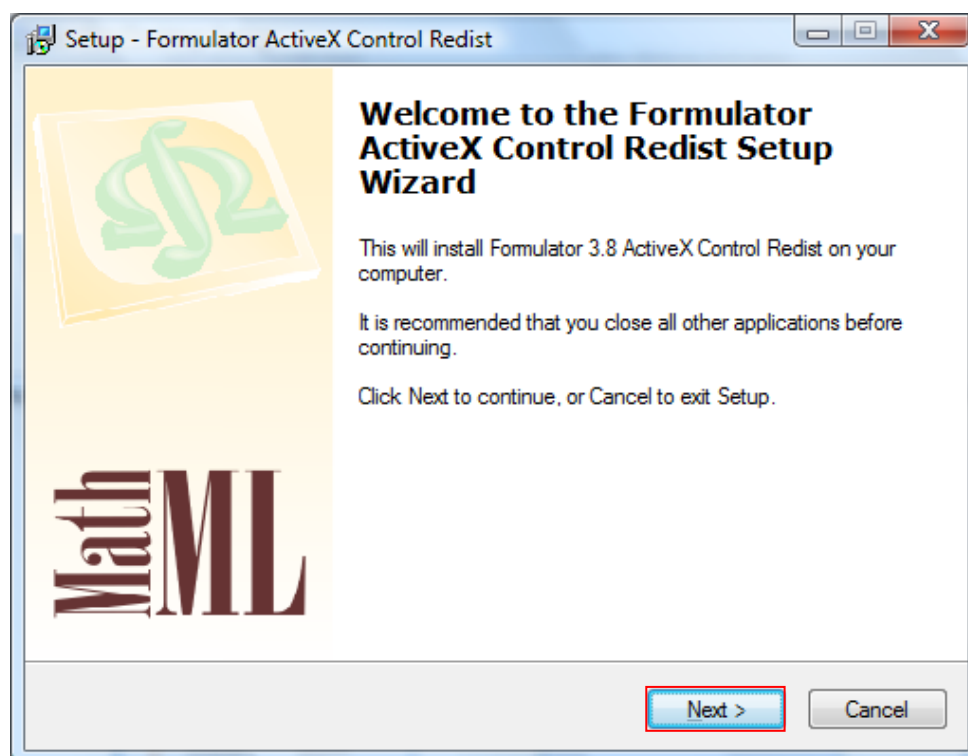
5. The next step of the installation is to install the Hermitech Formulator and Dessci MathML Player 2.1b. When the window with the question: Do you wish to install these components? appears, click on “**Install**”!



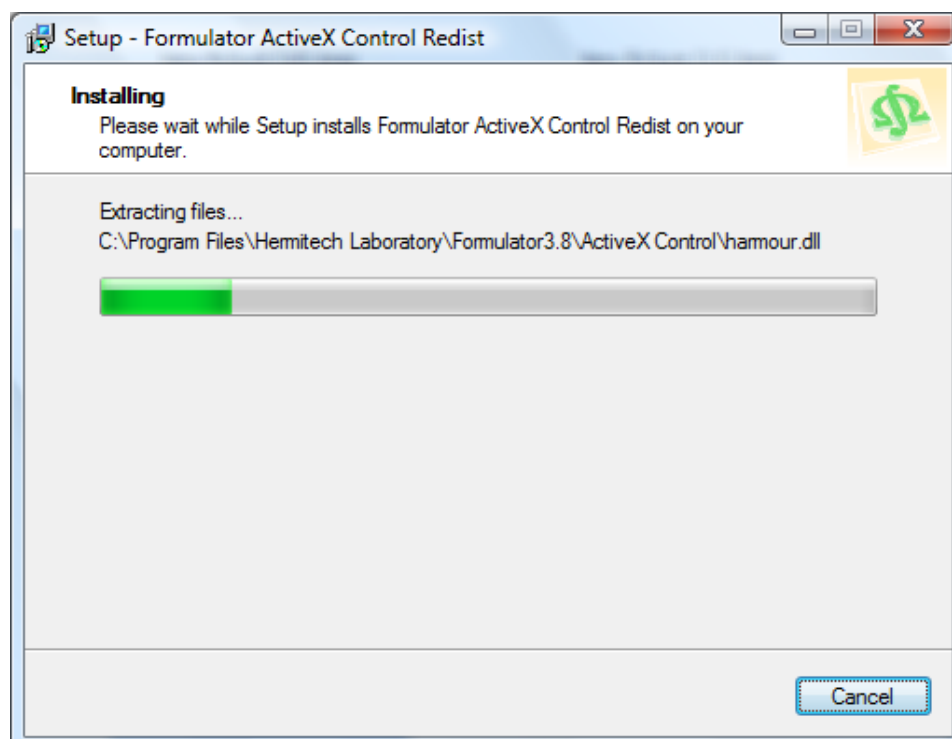
6. Please, wait while all the required files are downloaded!



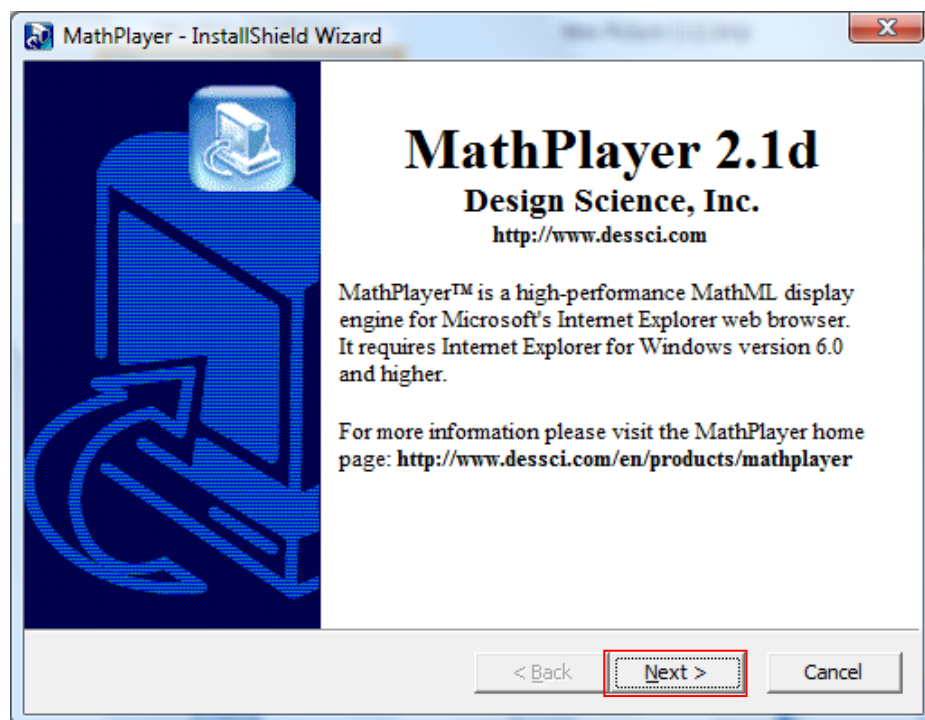
7. When the next window opens, click on “Next”.



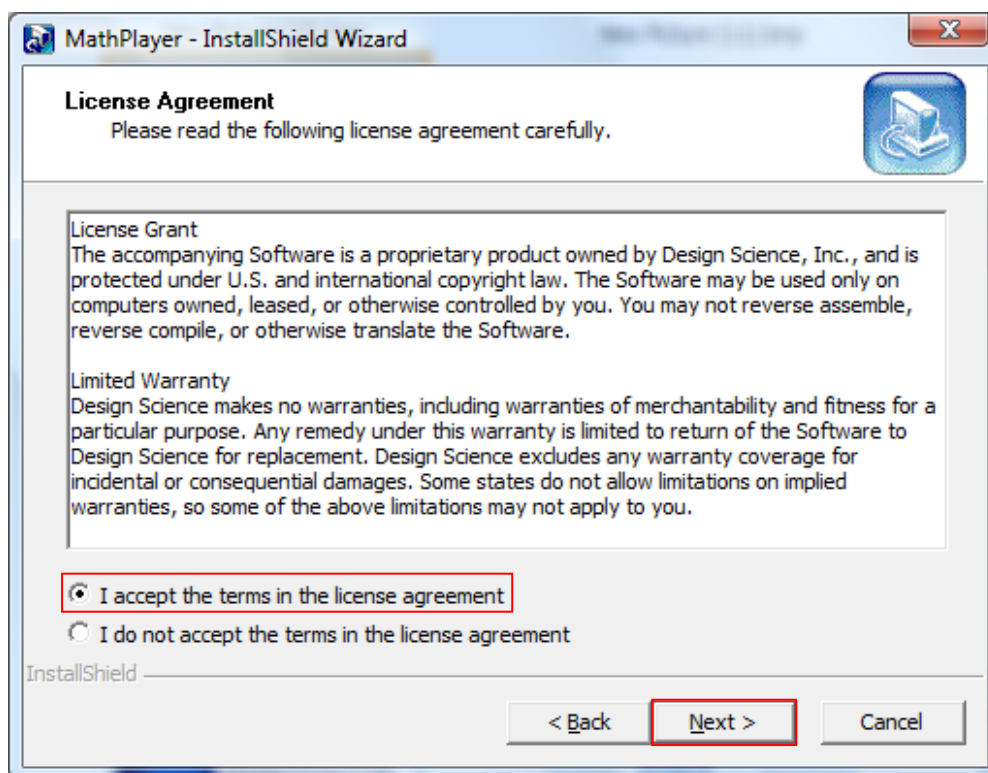
8. Please, wait while the installation process is completed!



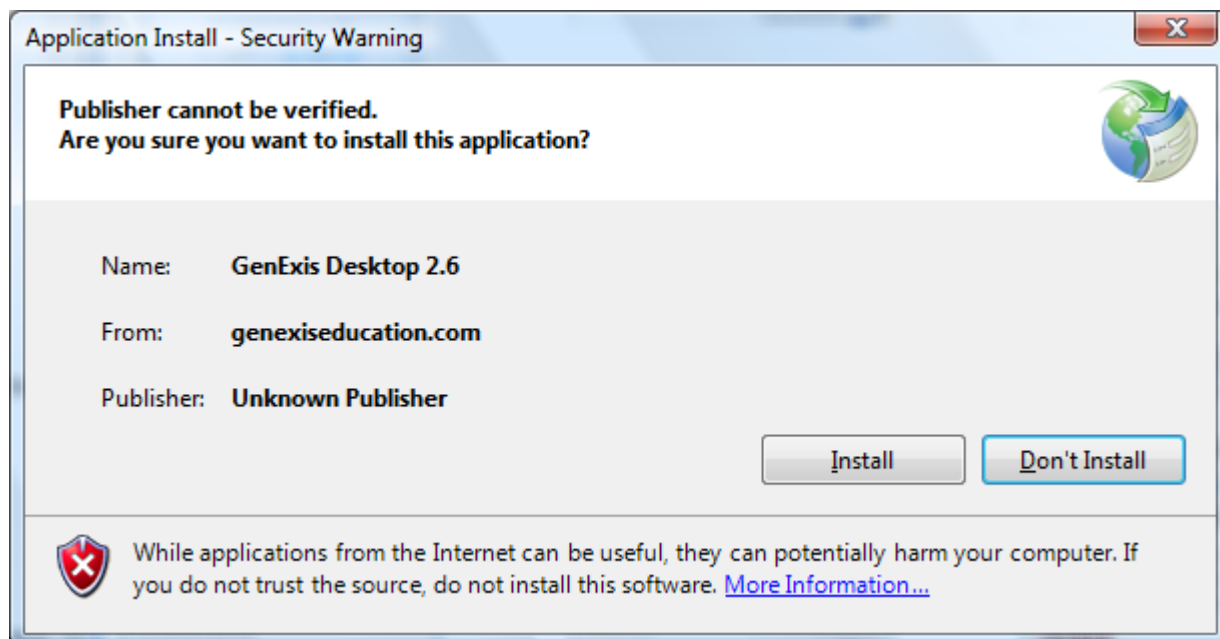
9. When the next window opens, click on “Next” again!



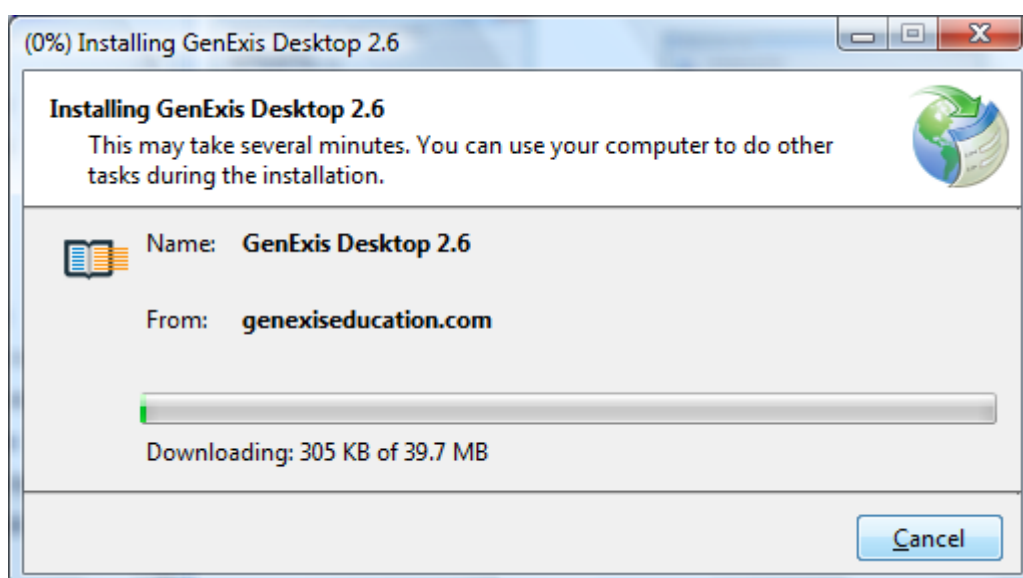
10. In the following window select „I accept the terms in the license agreement” and again click on “Next”!



11. When another window appears with the question: Are you sure you want to install GenExis Desktop 2.6? Select “**Install**” to start the installation process!



12. Please, wait while the programme is downloaded and installed!



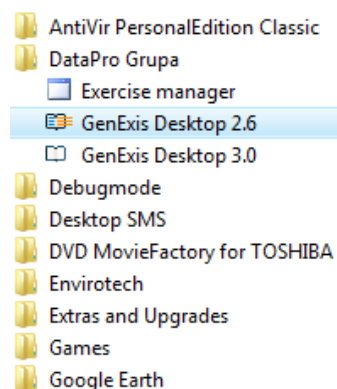
**Congratulations! You have successfully installed Genexis!!!**



## Theme 2: How to log in to the GenExis system and the user's desktop

After the GenExis installation, the application will automatically open the starting window.

Later you will be able to find the GenExis programme by clicking on "Start" → „All Programs" → „DataPro Group" → „GenExis Desktop 2.6" (see picture).

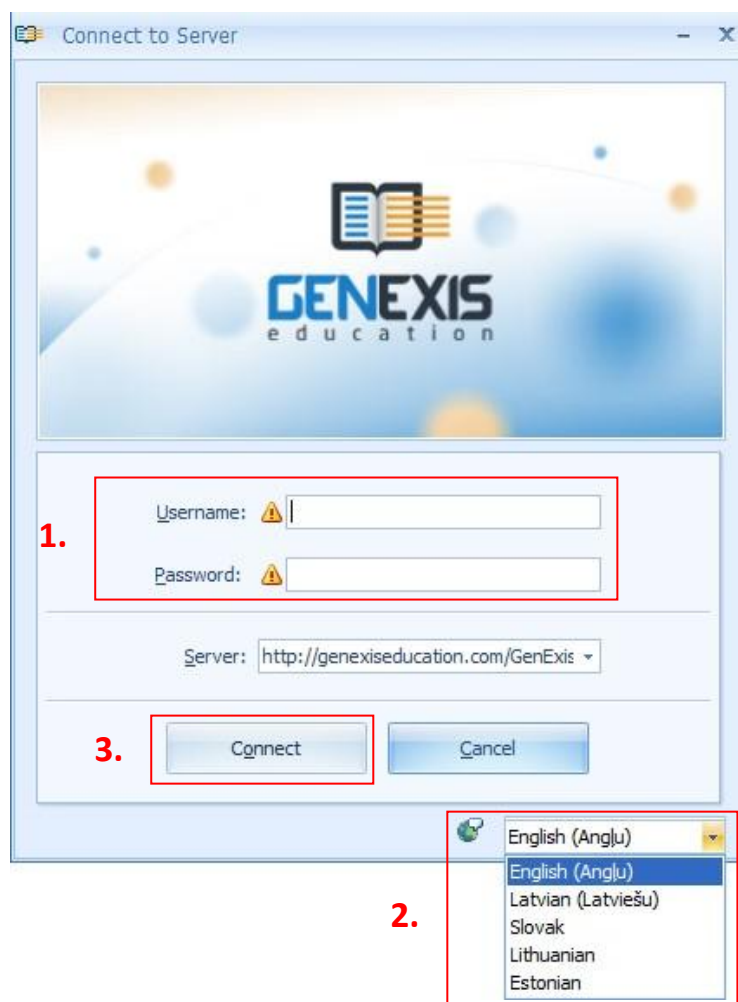


How to log in to the Genexis system?

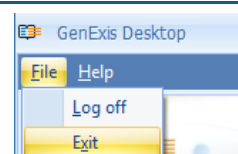
1. Insert your user name and password in the provided areas (see picture).

2. From the offered options select the preferable work language (see picture).

3. Click on "Connect" (see picture).



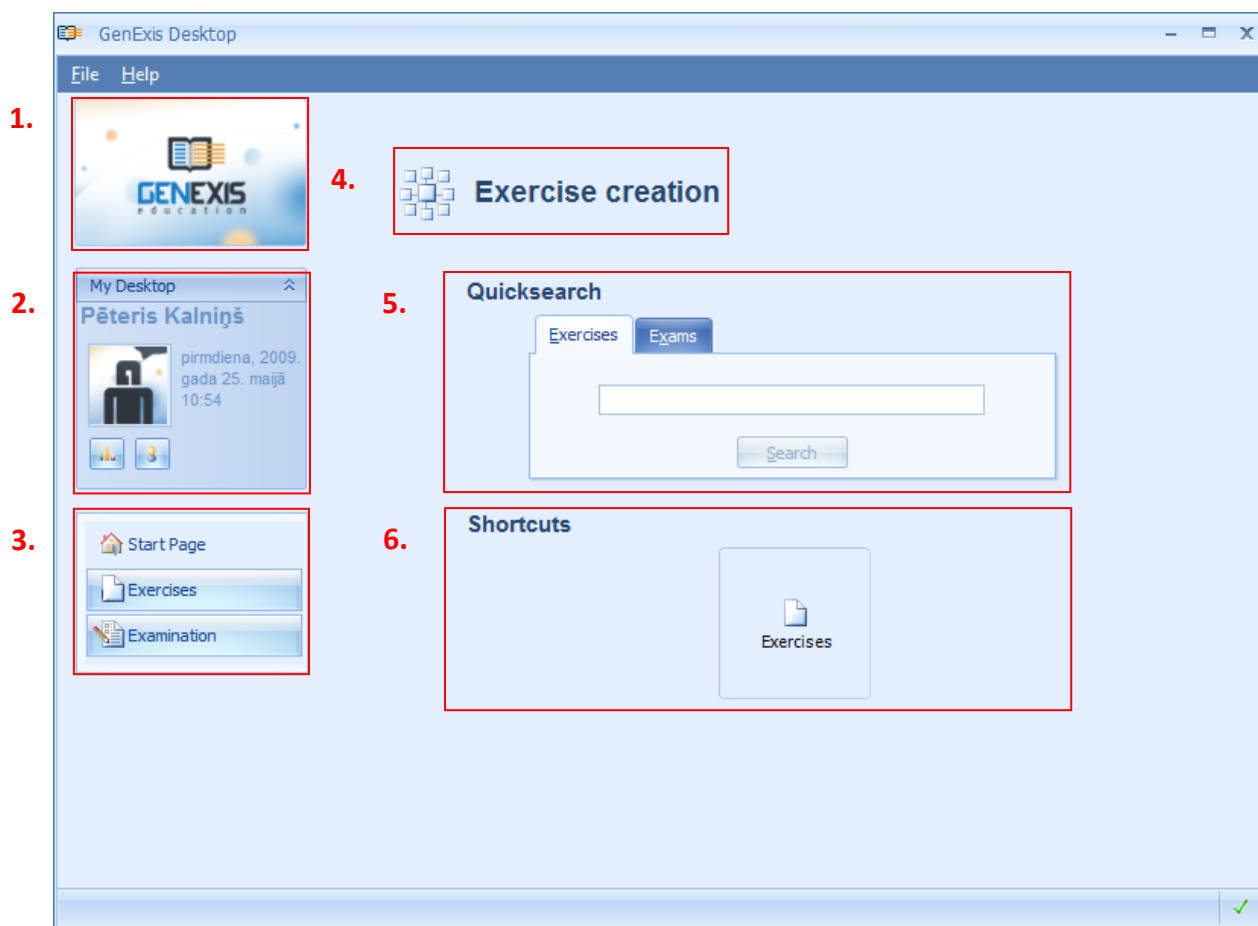
To exit the programme after logging in you must open File and select **Log off** (to change the user or the education institution) or **Exit** (to completely close the system).



## GenExis desktop


Elements of the GenExis first page:

1. GenExis logo
2. User information and date
3. The menu
4. Name of the education institution
5. Quick search
6. Shortcuts



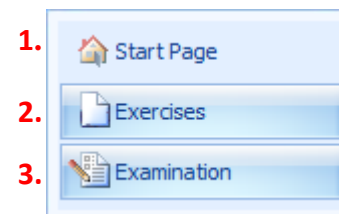
## The functionality of the GenExis desktop elements:

1. GenExis logo – by clicking on the GenExis logo you will open the desktop (if you are in another window).

2. User information and date: displays user name [1], user's photo [2], if such is uploaded onto the system, the date and the time [3], the personal statistics icon [4], clicking on which another window with personal statistics data will be opened (see Theme 21), the user information icon [5], clicking on which the user's personal information window will be opened in the editing regime (See Theme 6). You can close this section by clicking on  which is located next to "My Desktop" (you can also use this action to expand this section again after closing).

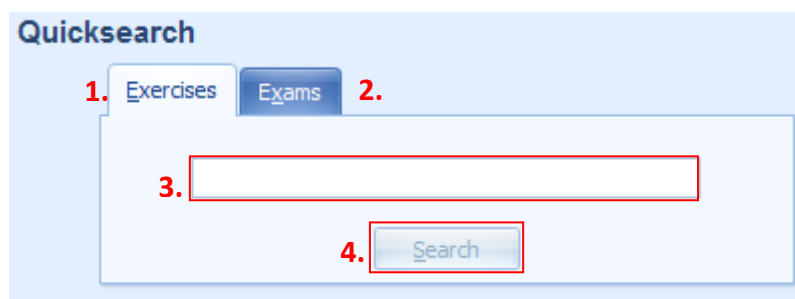


3. The menu: it allows opening the corresponding window with one click on the left mouse button. By clicking on "Start Page" [1], the user from any window will return to the starting page, by clicking on "Exercises" [2], the user opens the subject and exercise browser, by clicking on "Examination" [3], the user opens a list of all exams or tests available for the user.



4. The name of the educational institution shows in which school or other educational organization the user is currently logged in (this is important when one user is registered in several educational organizations).

5. Quick search is a tool which allows finding quickly the necessary exercises or exams by typing in keywords (see picture). First the user selects the search category by clicking on "Exercise" (will search for exercises [1]), "Exams" (will search for exams [2]), types in the keyword(-s) or only a part of a word in the empty space provided [3] and clicks on "Search" [4]. The search results (if such will be available) will appear in a new window. In case no search results will be acquired, the user will see a sign: "Nothing was found".



6. The shortcuts function as quick site functions. By selecting "Exercises", the user will open the subject and exercise browser.

## Theme 3: Student's personal information

In order to view one's personal information, click on the user information icon (see picture) which is found in the desktop section: User information and date (see Theme 2).



Clicking on the user information icon will open a window with your personal information (see picture). This includes three sections: "General" [1], "Password" [2] and "Technical info" [3].

1. 2. 3.

General Password Technical info

Change Image

User name : p.kalnins

First name : Pēteris

Last name : Kalniņš

Phone :

E-mail : p.kalnins@inbox.lv

Skype name :

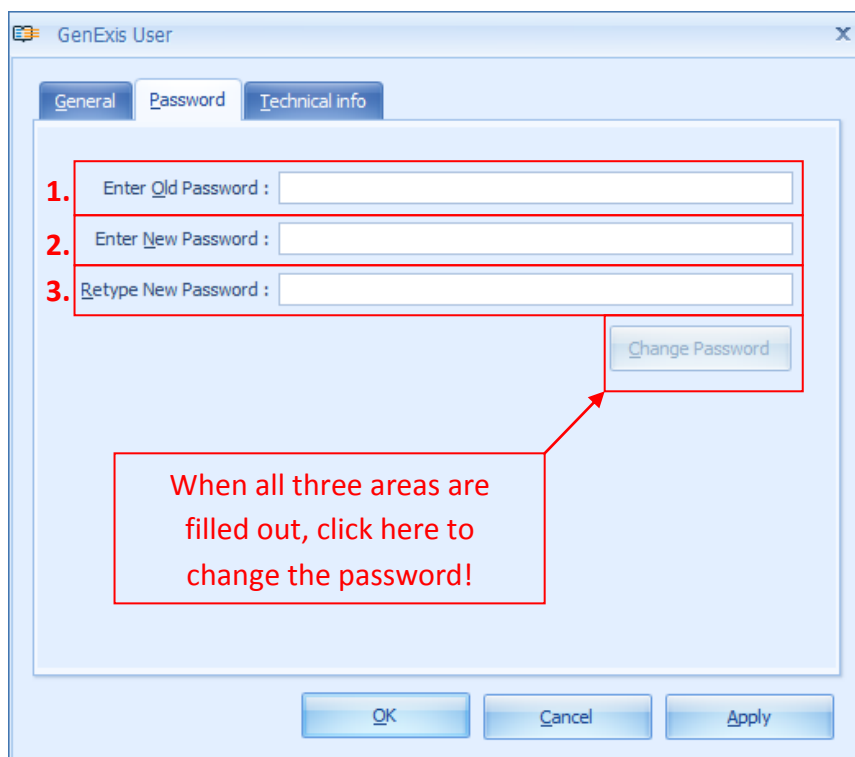
User comment:

OK Cancel Apply

The section "General" offers the user to edit their general information: to change the photo (when clicking on "Change Image", the user will be offered to add a photo from the computer memory), name, last name, phone number, e-mail, Skype ID as well as to add additional information in the section "User comment". To save the changes, click on "Apply" (the information will be saved in the

system and you'll be able to continue editing your personal information in the open window) or click on "OK" (the information will be saved in the system and the personal information window will be closed). If you don't wish to save the changes, click on "Cancel" – the information won't be saved and the personal information window will be closed. **Note:** the pupils are not allowed to change their usernames.

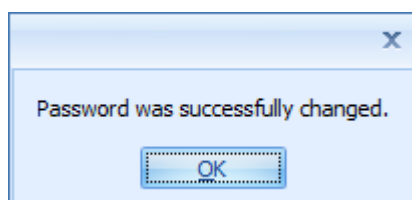
The section "Password" offers the user to change their password. Enter your old password [1], then enter the new password [2] and retype your new password [3]. When all three areas are filled out you can click on "Change password".



The screenshot shows a window titled "GenExis User" with three tabs: "General", "Password", and "Technical info". The "Password" tab is active. It contains three input fields labeled "1. Enter Old Password:", "2. Enter New Password:", and "3. Retype New Password:". A red box highlights these three fields. To the right of the fields is a button labeled "Change Password". A red arrow points from a text box to this button. The text box contains the text: "When all three areas are filled out, click here to change the password!". At the bottom of the window are three buttons: "OK", "Cancel", and "Apply".

**Note:** the password must be at least 6 symbols long, otherwise the system won't allow you to change it!

After the password is successfully changed, a notice "Password was successfully changed" will appear. Click "OK" to finish the activity (see picture).

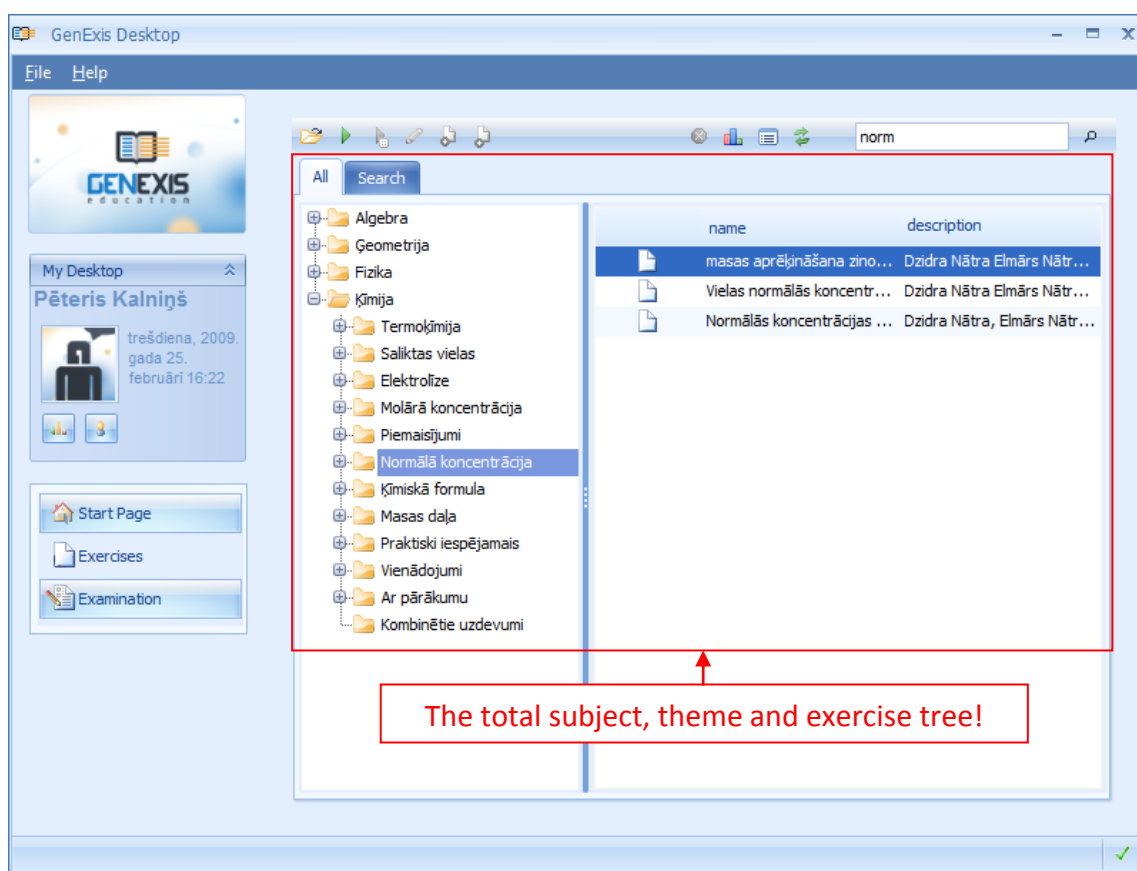


The section "Technical info" offers information on who and when has created the user and who and when has last edited the user's information. This information cannot be edited.

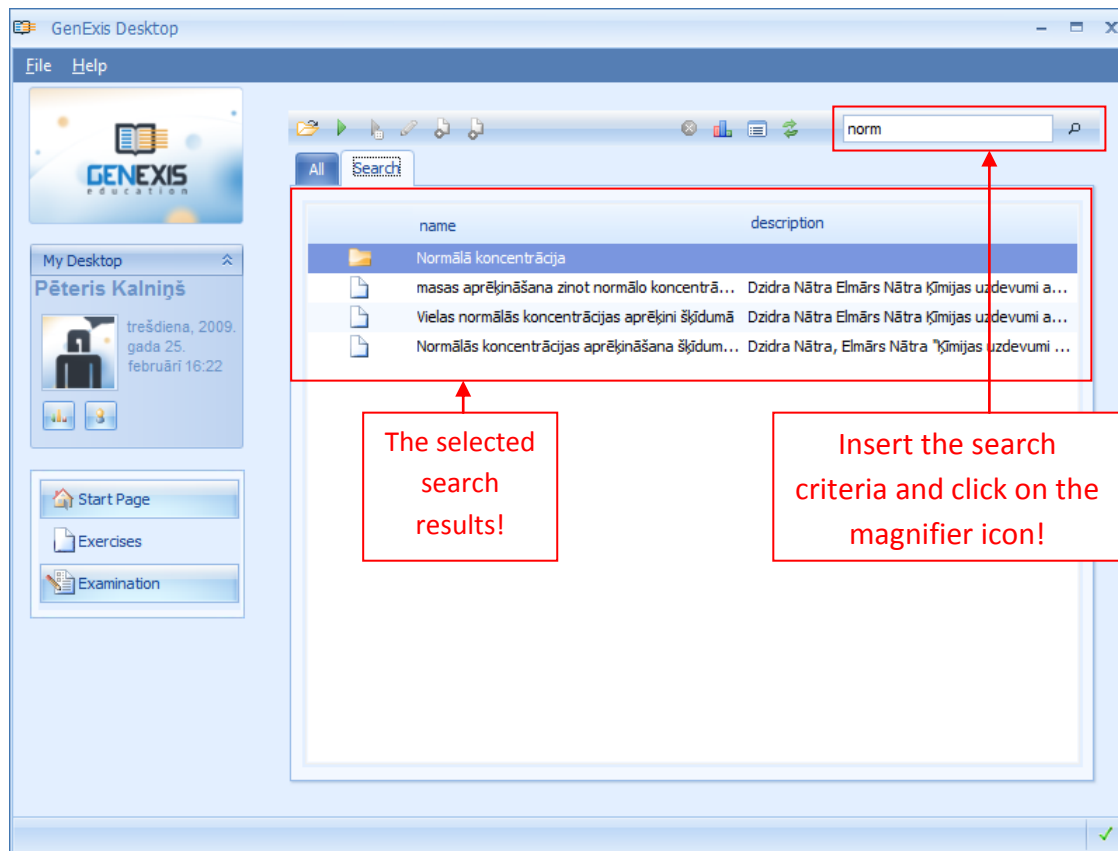
## Theme 4: How to perform training?

In the exercise section the pupil has access to exercises to which they have been granted authorization by the teacher or the system administrator. Thus the pupil can use these exercises for training in the relevant study subject. To practice by using the available exercises the pupil must open the “Exercise” section (see Theme 2). Sequentially the pupil may select a specific exercise and open it for solving or select a theme or subject and randomly run the exercise from this theme. Let’s view both options!

To open a specific exercise for solving, the pupil must first find the exercise he or she is interested in the total subject, theme and exercise tree or use the search to find the subject and theme folders as well as separate exercises by a keyword (-s) or syllable (-s).

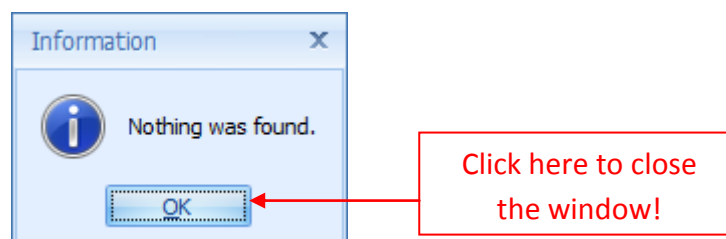


For searching the user may use the search tool in the right upper corner of the desktop. In order for the search process to be successful, the user must insert a word or a syllable at least 3 symbols long. To begin theme and subject selection, the user must click on the magnifier icon next to the search criteria field.



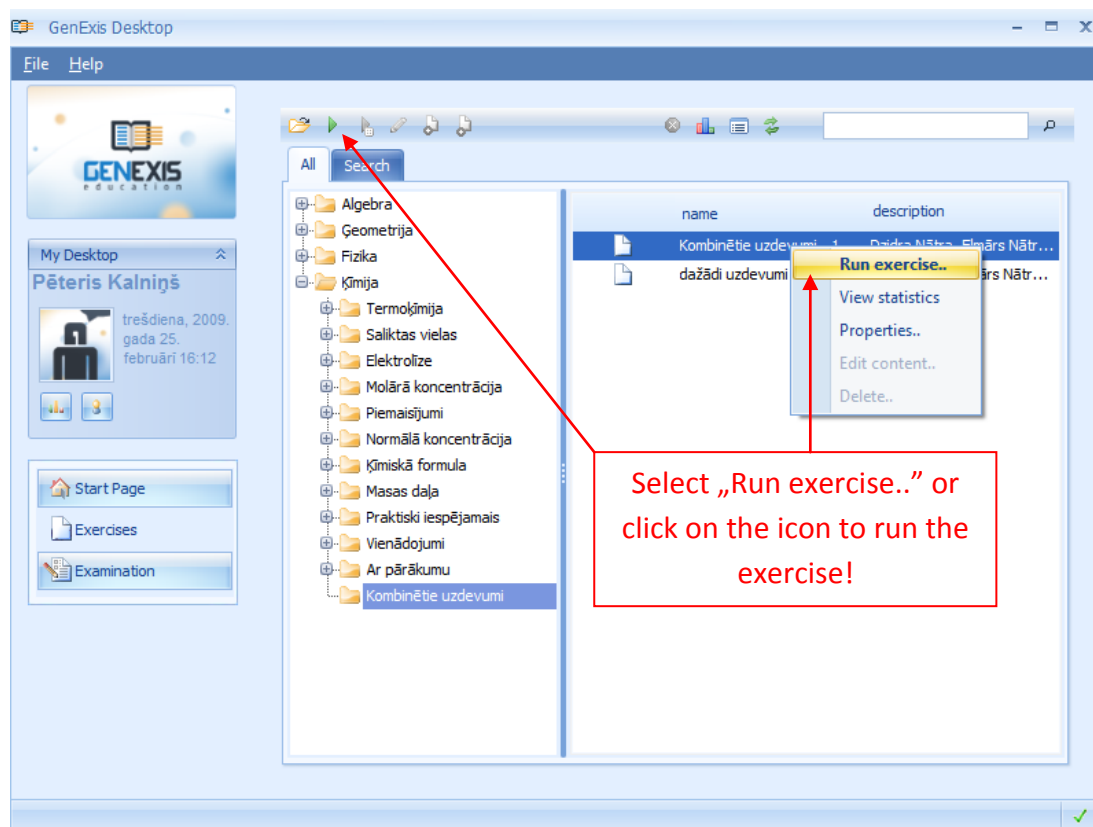
The search results will be displayed in a separate window where the pupil will be able to conveniently view them and identify the object searched for.

In case none of the subjects, themes or exercises in the exercise section complied with the inserted criteria, the system will announce that nothing was found.



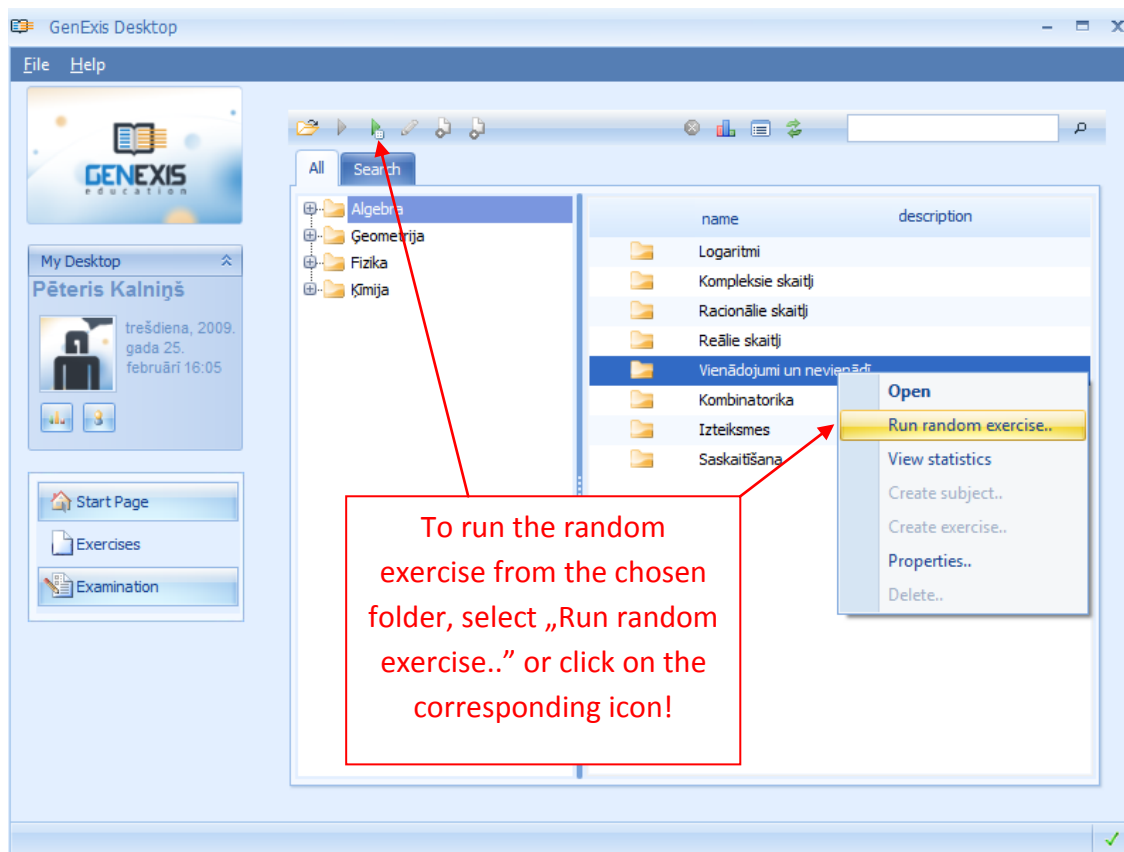
When the pupil has found the exercise that he or she wishes to solve, the pupil must run this exercise. This can be done in 3 different ways:

- By double-clicking on the exercise;
- By clicking the right mouse button on the exercise name and selecting “Run exercise” from the offered menu;
- By highlighting the corresponding exercise and clicking on the ‘Run exercise’ icon in the tool bar.



If the pupil wishes to practice a certain subject or theme, the system will offer to randomly run one of the exercises from a subject or theme folder. In this case the pupil doesn't have to search for a specific exercise but he or she must select one of the subjects or themes (this can be done through the subject, theme and exercise browser or by using the search tool). Sequentially the selected folder must be highlighted and the pupil must either press the right mouse button and select “Run random exercise..” from the menu or click on the ‘Run random exercise’ icon in the tool bar.





This way the pupil can test their knowledge in all subject or in one specific theme – the more exercises the folder contains, the harder it is to predict which exercise the system will run.

When the pupil has chosen to run one of the exercises, the system will open an exercise for solving – the student will be able to see the task (given data) and the answer input field and requirements:

GenExis Desktop

File Help

GENEXIS EDUCATION

My Desktop

Pēteris Kalniņš

pirmdienā, 2009. gada 25. maijā 12:33

Start Page

Exercises

Examination

Exercise - "Markup percentage calculation"

Answer

A retailer Pete's Shirt Palace purchases a shirt at \$ 10 and marks it up for a resale price of \$ 15. Calculate the markup percentage!

Write down the markup percentage (in a form of whole number):

The exercise conditions!

The answer input field and requirements!

Answer

Before entering the answer the pupil must pay attention to the answer input requirements because they contain information that can help the pupil to input answer correctly (for the correct answer insertion preconditions see Theme 5).

When the pupil has entered his or her answer, he or she must click on "Answer" and the system will automatically show if the answer is correct or incorrect as well as show the step-by-step solution. If the pupil wishes to solve the same exercise again (only with other given data which will be changed in the generation process), he or she must click on "Same again". If the pupil has run the exercise by using the "Run random exercise" function, it is possible to continue random exercise selection from the selected subject or theme by clicking "Random exercise" again. If the pupil wishes to end the exercise solving process, click on "Finish".

## Theme 5: How to insert answer correctly according to the given requirements?

The GenExis system allows creating exercises with different types of answers therefore the way of answer input can vary. It is essential for the pupil to be aware of the main answer input specifics for each answer type so that the correctness of the inserted answers wouldn't be affected by mistakes in the answer input process.

The GenExis system includes 6 different answer types:

- Text;
- Number;
- Select: with one or several correct answers;
- Formula: general formula or chemistry formula.

**Text answer:** the simplest type of answer when the pupil must enter either a word (-s) or a sentence (-s). The teacher might have indicated the text answer input requirements: the number of written symbols, the number of sentences, etc. The pupil must insert the text answer according to the requirements set by the teacher, but if there is no such conditions then by their own discretions.

The screenshot shows a window titled "Exercise - 'Colours (easy)'" with a sub-header "Answer". The main content area contains the question "What colour is the square?" followed by a black square image. Below the image is a text input field containing the word "black". A red rectangular box highlights this input field, and a red arrow points from a label box below it to the field. The label box contains the text "Text answer input field!". At the bottom of the window is a blue button with a green checkmark icon and the text "Answer".

The system will compare the pupil's answer with the correct answer (if such has been defined) and only in case of complete compatibility will the pupil's answer be acknowledged as correct (the system won't differentiate different declensions, etc., insignificant differences). If the exercise

creator hasn't defined the correct answer, then any answer entered by the pupil will be considered correct (this option can be used in cases when there is no equipollent answer to the exercise question and the teacher has decided to check them manually).

**Number answer:** a fairly easy way of answer input when the pupil must enter the answer as a number. In this case it is essential to pay attention to the teacher's directions about the answer input format, meaning, whether the answer must be a whole number or a decimal number with a specific number of digits after the comma etc.

Exercise - "Markup percentage calculation"

Answer

A retailer Pete's Shirt Palace purchases a shirt at \$ 10 and marks it up for a resale price of \$ 15. Calculate the markup percentage!

Write down the markup percentage (in a form of whole number):

The answer input field!

The answer input requirements!

✓ Answer

The number of digits after the comma shows up to what precision level the correctness of the answer will be assessed by the system. If it is given that the result should be rounded off to two digits after the comma, the pupil can insert a more precise answer, for example, instead of 0,28 it is possible to write in 0,2831 but the system will compare the correctness of the answer only up to two digits after the comma. A mistake can arise in cases when the answer has to be rounded up, for example, when entering 0,2797 instead of 0,28 the answer will be marked as incorrect. Also in cases when the answer is 0,20 the pupil can insert 0,2 even if the system demands a precision of answer up to 2 or more digits after the comma – the system will accept this answer as correct.

The number answer can also include a negative number and for inserting a negative number, the pupil may use the dash/minus sign on the keyboard.

The system will compare the answer submitted by the pupil with the correct answer defined by the

exercise creator with great precision. In case of complete compatibility the pupil's answer will be marked as correct.

**Multiple choice questions with one or several correct answers:** multiple choice is a simple type of answer when the pupil must select one or several correct answers. If it is necessary to select several correct answers, this fact will be (should be) given in the answer input requirements. In cases when it is clear that only one answer is correct, this is not necessary.

Exercise - "Verb forms (easy)"

Answer

Choose the right form of the verb to complete this sentence correctly:

*She is \_\_\_\_\_ the computer.*

- ☐ used
- ☐ use
- ☐ using
- ☐ uses

A list of possible answers!

✓ Answer

If there is only one correct answer the system won't allow marking several answers. If there are several correct answers the system will allow the pupil to mark several or all answers (regardless the actual number of correct answers that are defined in the setup). If the teacher hasn't provided information how many of the answers are correct, the pupil must carefully examine each possible correct answer. This is necessary because the system will mark the pupil's answer correct only if all correct answers will be selected (if even one of the correct answers won't be selected or if the pupil will have selected only one wrong answer, the system will mark the whole question as incorrectly answered).

The answer (-s) given by pupils will be compared with the correct answers and only in cases of complete compatibility will the pupil's answer be marked as correct.

**Formula answer: General formula** – it's slightly complicated answer input type when the pupil has to enter answer in a form of a formula. The answer insertion occurs by using the formulator toolbar.

Exercise - "Logarithms of numbers - 5"

Answer

Transform into expression raised to a power:

$$\lg \sqrt[4]{10} = \frac{1}{4}$$

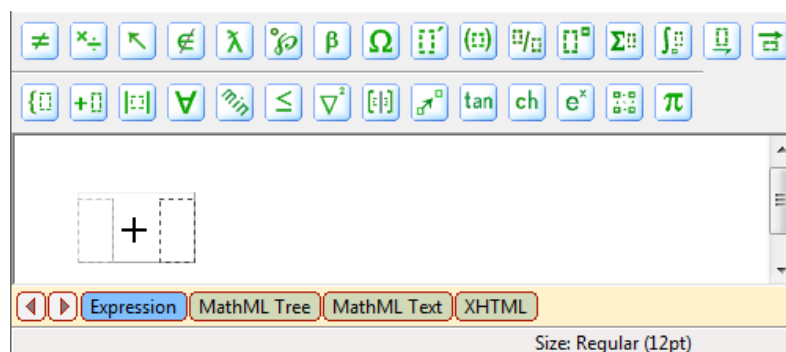
Write the answer (in order to write down the answer use the power formulas and if needed formula of the Nth root):

Formula answer input requirements!

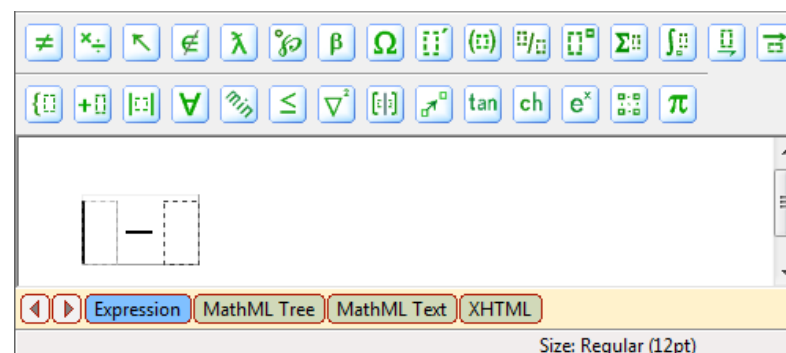
Formula answer input tool!

The teacher definitely must have defined the answer input requirements to lessen the possibility that pupil chooses incorrect mathematical functions to enter the answer. According to the requirements of answer input provided by the teacher, the pupil has to evaluate what mathematical functions he or she needs to use to enter the correct answer because the formulator offers a wide choice of functions. In the case of general formula the pupil's choice is limited by the fact that the correct answer insertion requires using of functional mathematical functions, which are mostly located in the lower row of the formulator toolbar. Additionally the general formula answer allows using the so called *hot keys* for answer insertion. Then let's have a look at several specific keys and most often used mathematical functions in the toolbar.

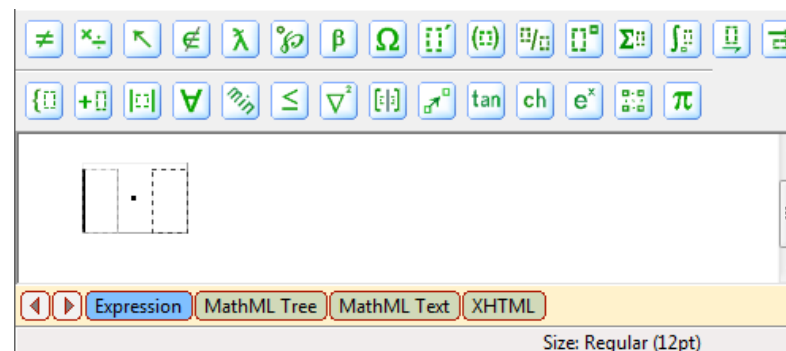
**Addition:** by using the keyboard insert „+” and you will obtain the function for addition of two expressions:



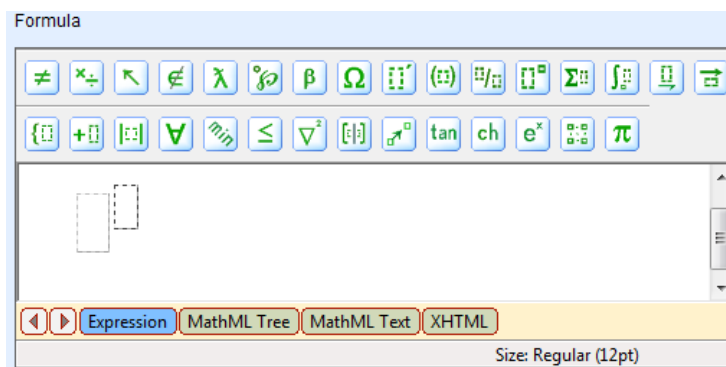
**Subtraction:** by using the keyboard insert „-” and you will obtain the function for subtraction of two expressions:



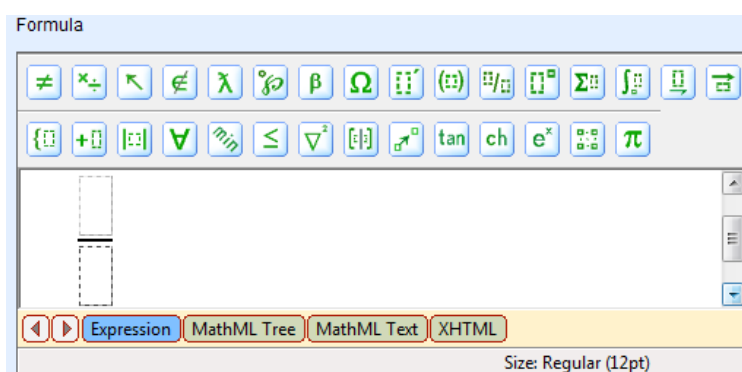
**Multiplication:** by using keyboard insert „\*” and obtain the function for multiplication of two expressions:



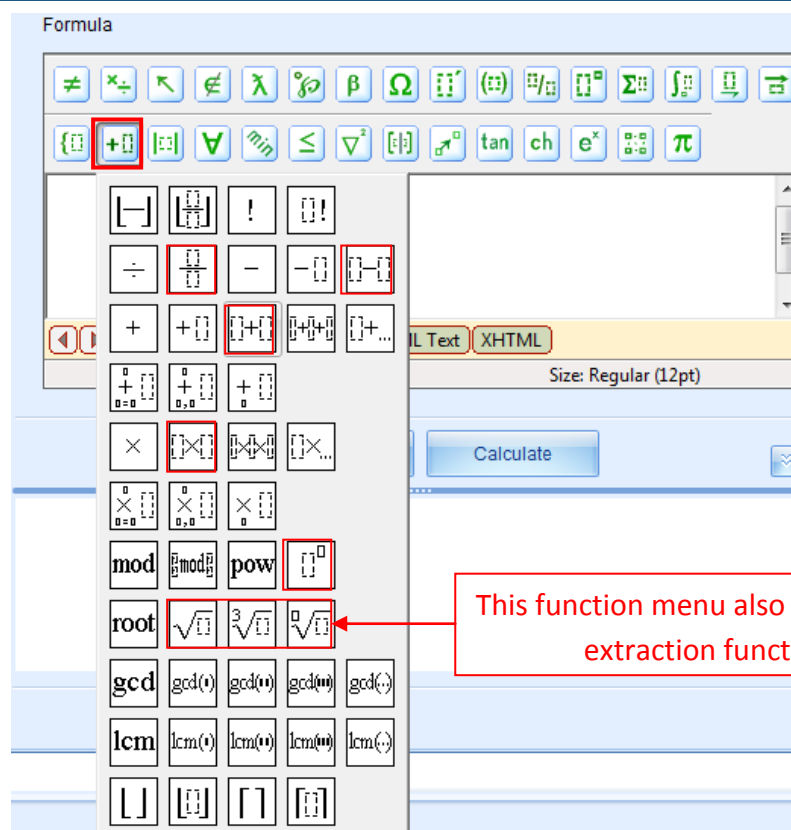
**Raising to a power:** by using the keyboard insert „^” to obtain the power function.



**Fraction/division:** by using the keyboard insert „/” to obtain the fraction function.

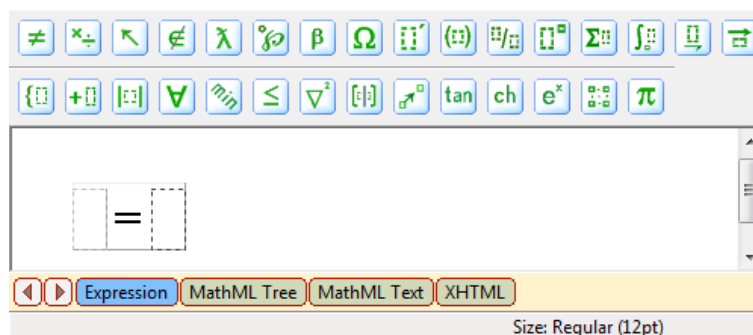


In addition all the previously mentioned formulas can be found in the toolbar.

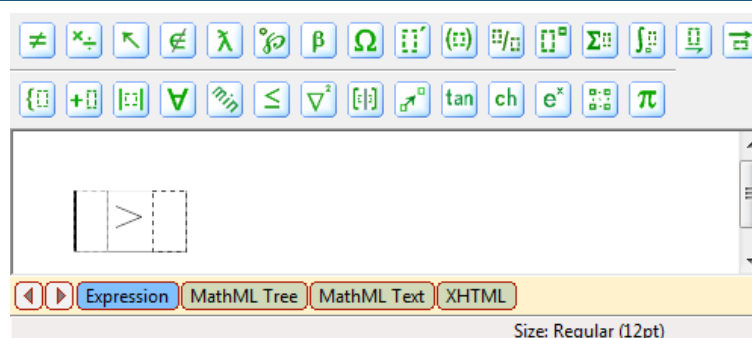




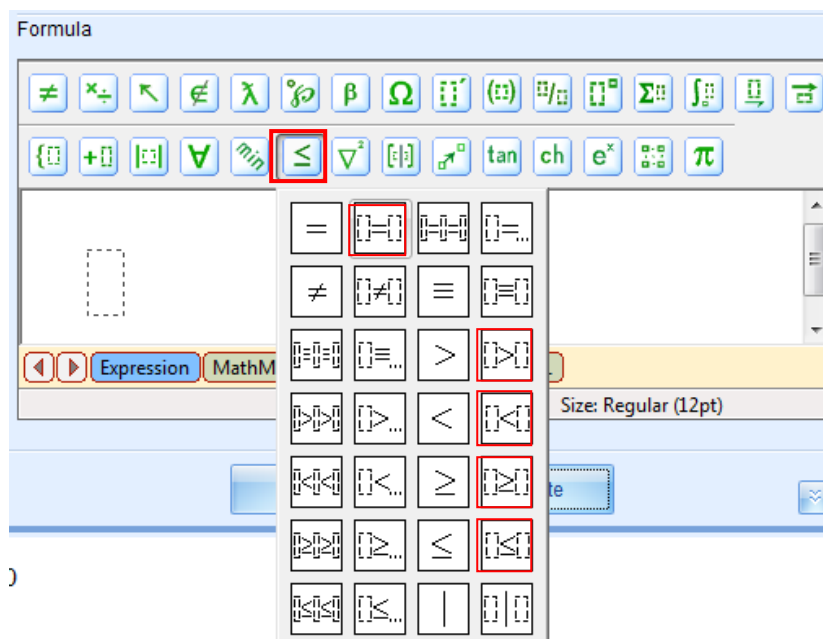
**Equality:** by using the keyboard insert „=” and obtain the two expression equality function:



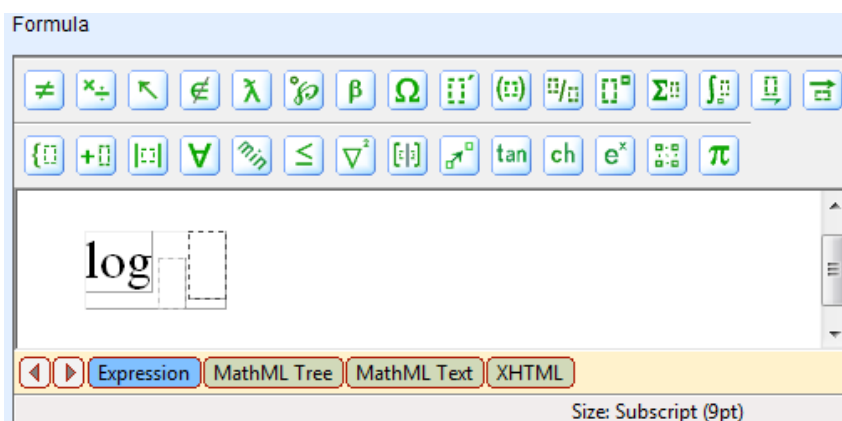
**Inequalities:** by using the keyboard insert „<” or „>” to obtain the corresponding inequality function.



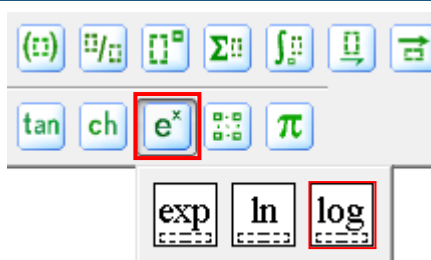
Moreover, the equality and inequality functions can be found in the toolbar:



**Logarithms:** type in „log” to obtain the logarithmic function:

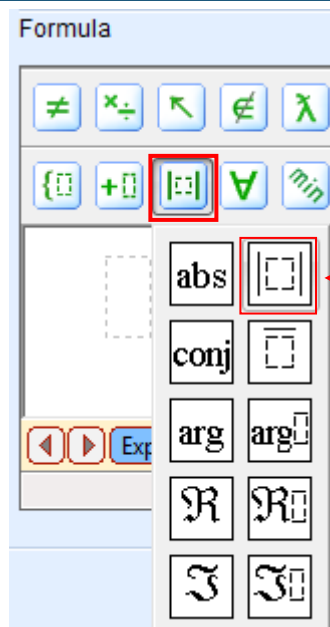


Alternatively this function can be found in the toolbar:



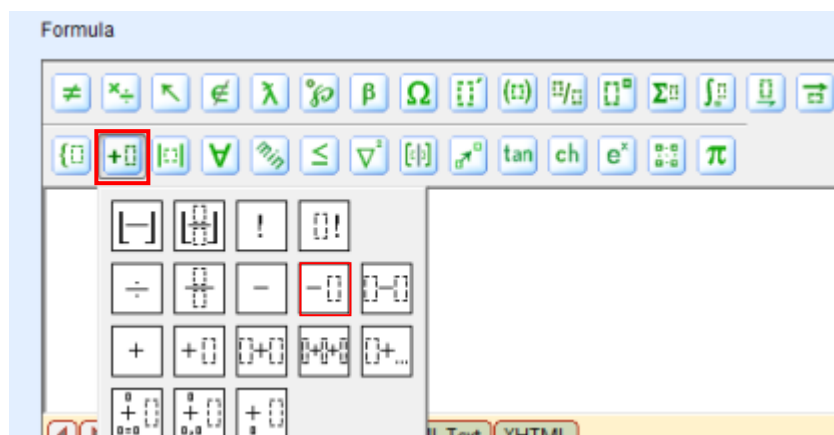
Previously in the text are described the main hot keys for insertion of the general formula answer but apart from them there are several other functions that are frequently used in a wrong way.

**Module:** can be found in two places in the toolbar but for the correct insertion of formula only one of these functions can be used.



Functions to use for  
calculation of module!

**Negative numbers:** often incorrect negative numbers are inserted when entering the formula. The correct insertion requires using a definite function:

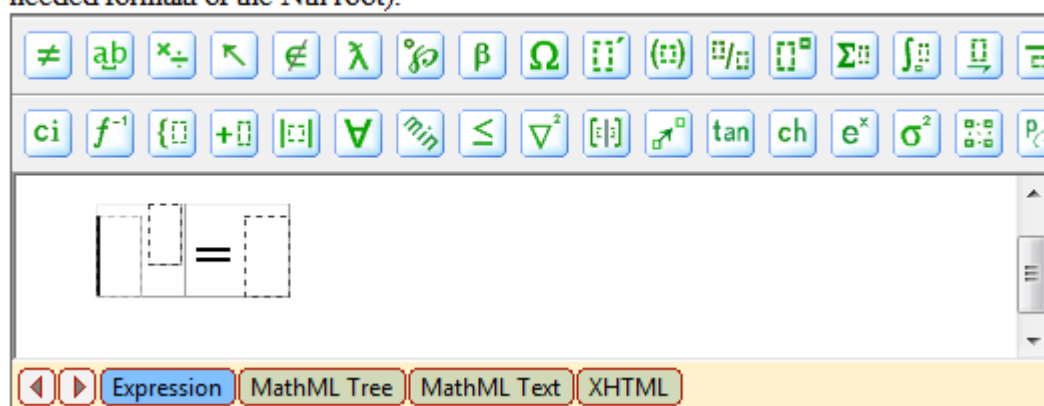


All in all these are main mathematical functions, which have to be remembered for insertion of the General formula answers correctly.

To correctly enter the previously shown formula answer example the following sequence of actions can be used:

- 1) The cursor is moved into rectangle marked with dotted line and by using the keyboard „^” is entered to obtain the degree function.
- 2) Successively the cursor is placed right after obtained degree function and by using the keyboard „=” sign is entered to obtain the equality. All in all the following mathematical combination should be obtained:

Write the answer (in order to write down the answer use the power formulas and if needed formula of the Nth root):



- 3) Click the cursor in the first rectangle marked with dotted line and enter the base of exponent function. Then click cursor in the degree rectangle and by using the keyboard type in sign „/” to obtain the fractional expression (enter numerator and denominator).
- 4) Click cursor in the left side of the equality and select the function of Nth root degree. Insert root degree and subradical expression.
- 5) As a result of previously described actions the correctly inserted formula answer should be obtained:

Write the answer (in order to write down the answer use the power formulas and if needed formula of the Nth root):

The screenshot shows a mathematical formula editor interface. At the top, there is a toolbar with various mathematical symbols and functions. Below the toolbar, the main input area displays the expression  $10^{\frac{1}{4}} = \sqrt[4]{10}$ . At the bottom, there are four tabs: "Expression" (selected), "MathML Tree", "MathML Text", and "XHTML".

These steps can be performed in a different sequence but it is essential to keep the cursor in the correct place whenever using the hot keys or the formulator toolbar for entering new mathematical formula.

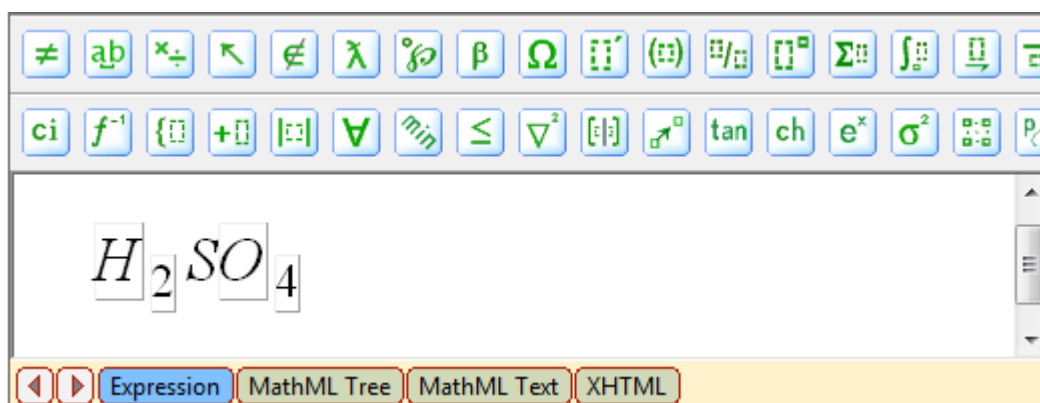
**Formula answer: Chemical formula** – it is a comparatively complicated way of answer input when the pupils have to insert the answer in a form of a chemical formula. In the same way as for General formula answer the answer insertion occurs by using the formulator toolbar. This type of answer does not have hot keys.

If it is required to enter a chemical formula of a substance then in order to ensure the correct way of answer input the following steps must be performed:

- 1) Click cursor into the formula entry field and initially write the chemical elements of which the corresponding substance is formed.
- 2) Sequentially select the particular element of the chemical formula, which requires adding the number of atoms as a subscript to form a molecule and choose the corresponding index functions in the formulator tool bar.

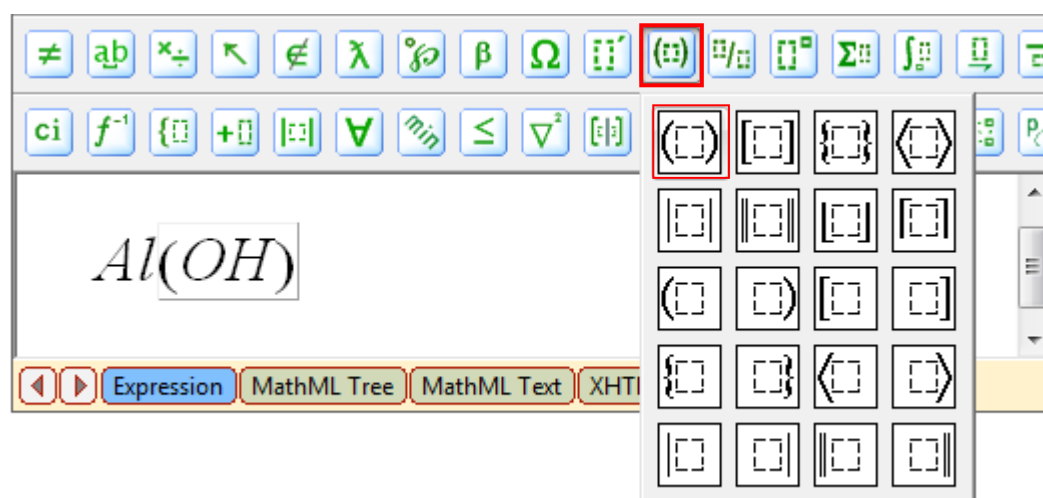
The screenshot shows a chemical formula editor interface. The main input area displays the text "HSO". A dropdown menu is open, showing various subscript and index symbols. The toolbar at the top includes symbols for mathematical operations and functions. The bottom tabs are "Expression" (selected), "MathML Tree", "MathML Text", and "XHTML".

- 3) When the correct index function has been chosen the pupil can insert the corresponding number of atoms. The action has to be repeated until the correct chemical formula of the formula has been obtained:




Be aware that in the given example the index „4” is related only to O (Oxygen) to make the formula correct (if the whole „SO” group will be selected then the formula will not be recognized as correct by the system).

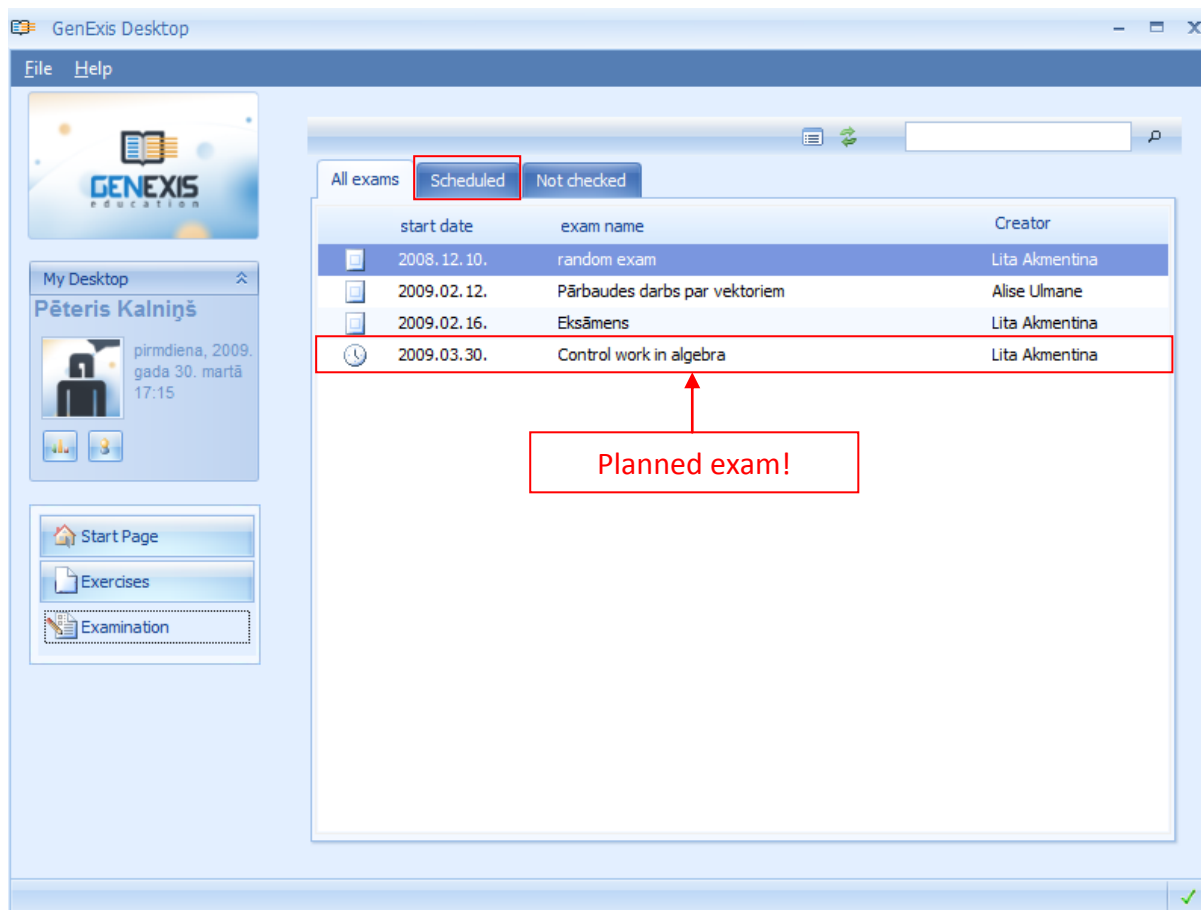
If the chemical formula requires putting any of its element groups into brackets then the user must use the following function:



Generally to insert a chemical formula you need to know where to find the index functions and bracket functions in the formulator.

## Theme 6: How to take the exam?

The list of exams and tests accomplished and planned for the pupil is available in the section „Examination”. To get acquainted with the exams scheduled for the near future the pupil has to open the section „Examination”. All those exams or tests scheduled for some particular time will be marked with icon: .



Alternatively, for easier selection of scheduled exams and tests the user can move from section „All” to the section „Scheduled” where the pupil can find only those exams scheduled at a particular time.

To make it easier for pupil to look through the list of exams, the teacher must give a name to each exam or test, the scheduled exam time and the name of the person who created it. The pupil can also open and get acquainted with exam properties by clicking on „Properties...” from the offered list of options (alternatively the pupil can select the exam they are interested in and click on properties icon).

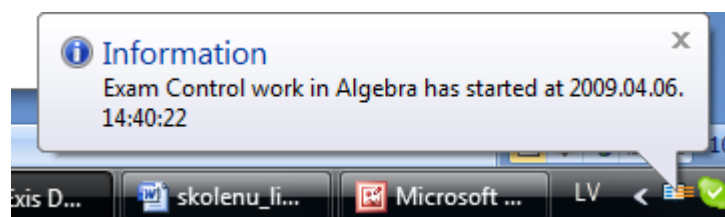
In exam properties the pupil can become acquainted with exam title [1] and topic [2], exam type [3], scheduled date and start time as well as duration [4]. Information on setting exam start is also very important: if the teacher has marked „Manual start”, then regardless the defined start time of the exam, the exam will only start when the teacher manually has launched (if this option is not

marked then the exam will start automatically on the scheduled time). But if the teacher has marked „Exam flexible start” then regardless the timing when the pupil starts taking the exam from the defined exam starting time to planned exam ending time (exam starting time + duration), the pupil will be allowed to use all the time defined in the exam duration section (if this possibility is not marked when starting the exam later then its defined starting time the pupil will have reduced time for exam completion).

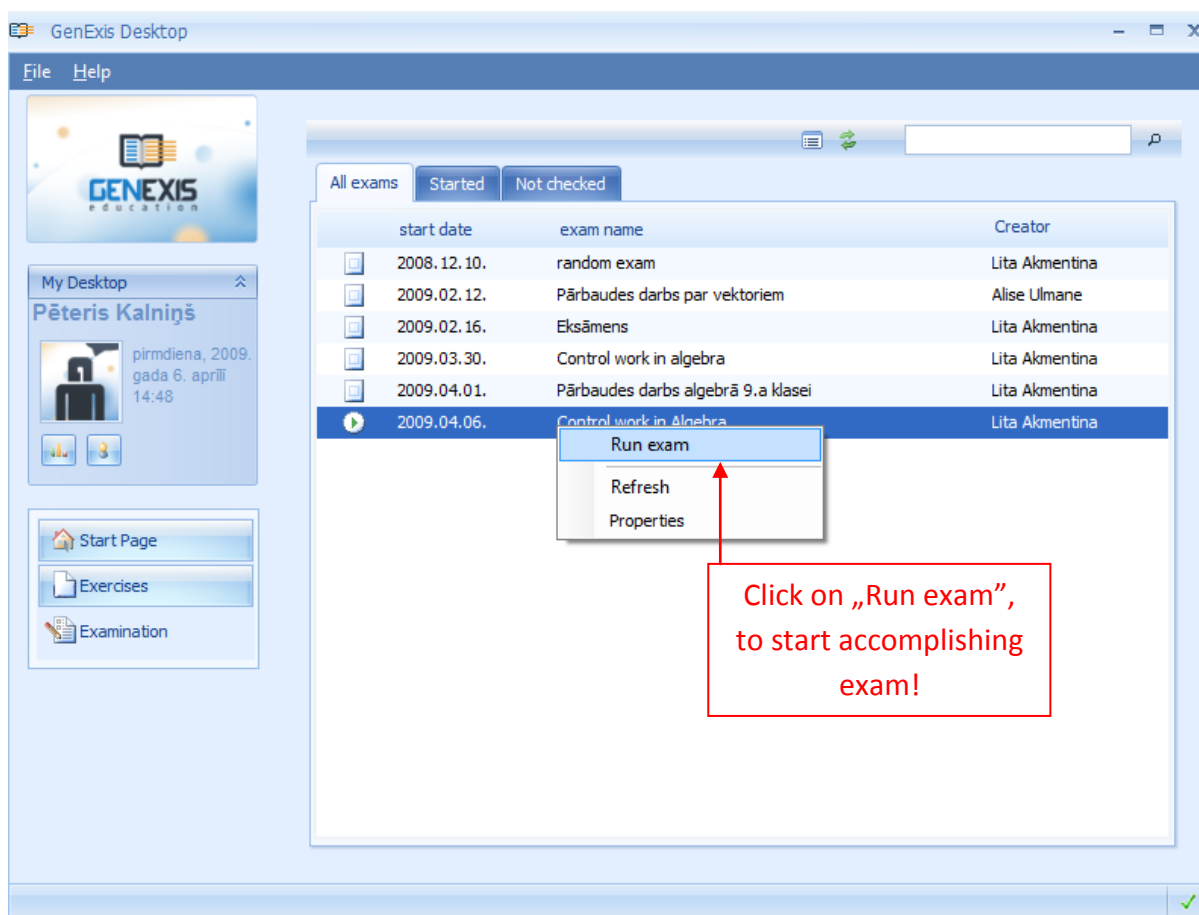
Additionally the pupil can become acquainted also with the exam technical info, which shows the exam creation time, date and the name of the creator as well as the information on last modifications made to the particular exam (name of the modifier and time). While the exam has yet not started or the teacher has not manually started it the pupil is not able to start taking the exam. Wherewith the exam icon changes from scheduled exam to run the exam and the pupil can start accomplishing it:



The system informs the pupil about the exam start by showing this notification:

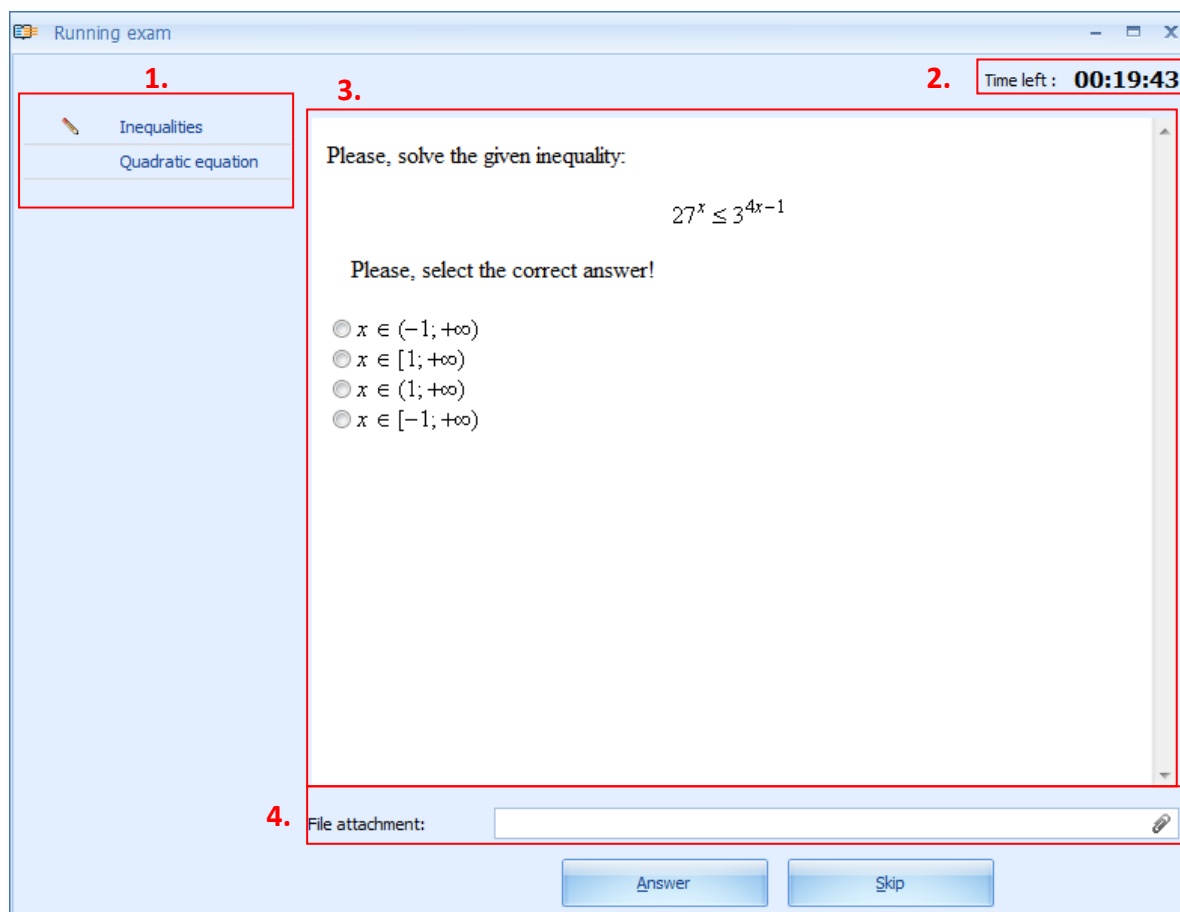


When the exam has started the pupil has to run it in the similar way as running an exercise for the training purposes: double clicking the exam name or by clicking on the right mouse button on the relevant exam and choosing „Run exam” from the given options.






When the exam has been launched, the system opens it in a new window and generates individual test exercises for each pupil. When the generation process has finished the pupil can start accomplishing the exam. The exam window is formed of the following elements: list of exercises – a pencil symbol [1] is put next to the task that the pupil is doing at that particular moment, time left for the exam completion [2], conditions of the corresponding task and answer insertion field [3] and tool for adding attachments [4].



The pupil can start accomplishing the exam with any of the tasks in the task list [1] – by double clicking on exercise name the pupil can move from one task to another task. The pupil can return to unfinished task later as far as they have not entered the answer and pushed "Answer" button.

The answers to the exam questions have to be entered during the provided time [3] and in the way it has been defined in the task conditions (see Theme 5 to learn how to correctly insert answers to the exercise). As soon as the pupil has inserted or chosen an answer they have to click on „Answer" to confirm it. If the pupil wishes to add an explanatory document to their answer it is possible to use the attachment tool [4] – the attachment has to be added before confirming the answer.

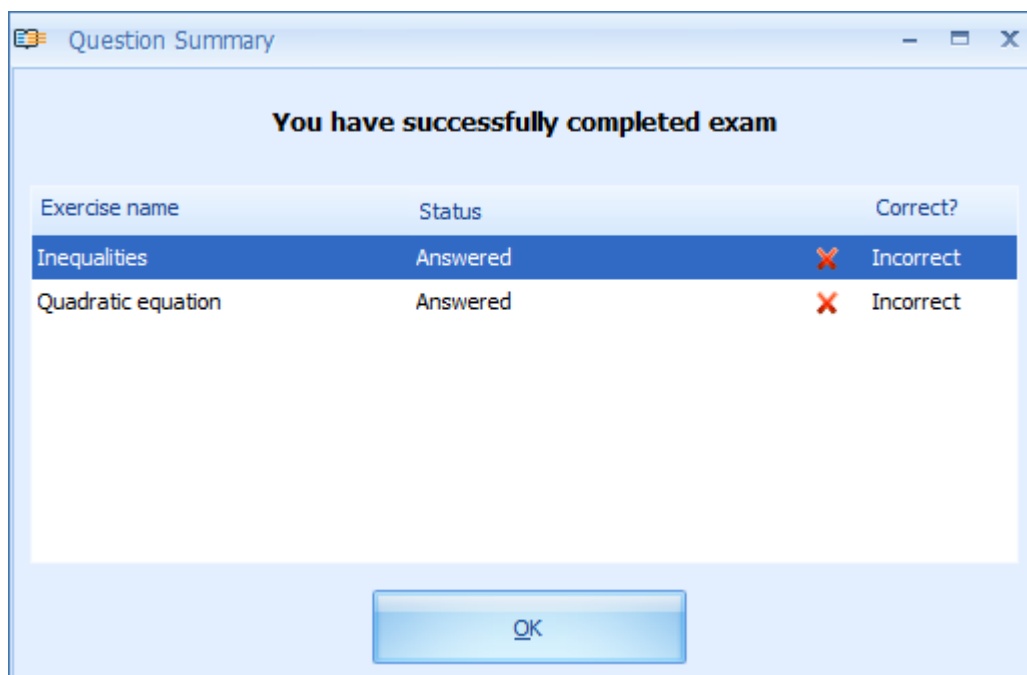
To add an attachment click on symbol  in the attachment tool. It will sequentially open a file browser on the pupil's computer, which will help finding the necessary document and by double clicking or using "Open" function adding it to the task in the form of an attachment. The maximum size of an attachment should not exceed 512 KB.

If the pupil wishes to delay the completion of the particular task after having opened it, the pupil

can click on „Skip” to move to the next task.

When the pupil has entered the answer (also added an attachment if it was necessary) and clicked on “Answer”, the system will automatically compare the answer inserted by the pupil with the correct answer of the task. If the teacher has allowed the pupil to see the answer correctness announcement then the pupil will get to know right away whether he or she has answered correctly to the corresponding exam question. Additionally the teacher might have allowed the pupil to see the correct solutions to the each task after they have inserted the answer – it is displayed right after the answer insertion and determination of its correctness. In order to move on to the next exam question, click on “Next”.

The user also has to click on “Next” after having accomplished the last task of the exam. Sequentially a summary of all exam questions might be displayed for the pupil (if the teacher has allowed this option). In the question summary the pupil is able to see list of exercises, the status of each exercise (answered/not answered) and the correctness of the answer. The question summary has only informative role – the pupil cannot change it. In order to close the question summary click on „OK”.

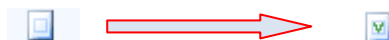


The system will automatically close the exam window after viewing the exam summary or after finishing the last exercise. In order to get acquainted with the exam results the user needs to wait until the teacher has looked them through and set exam status as checked.

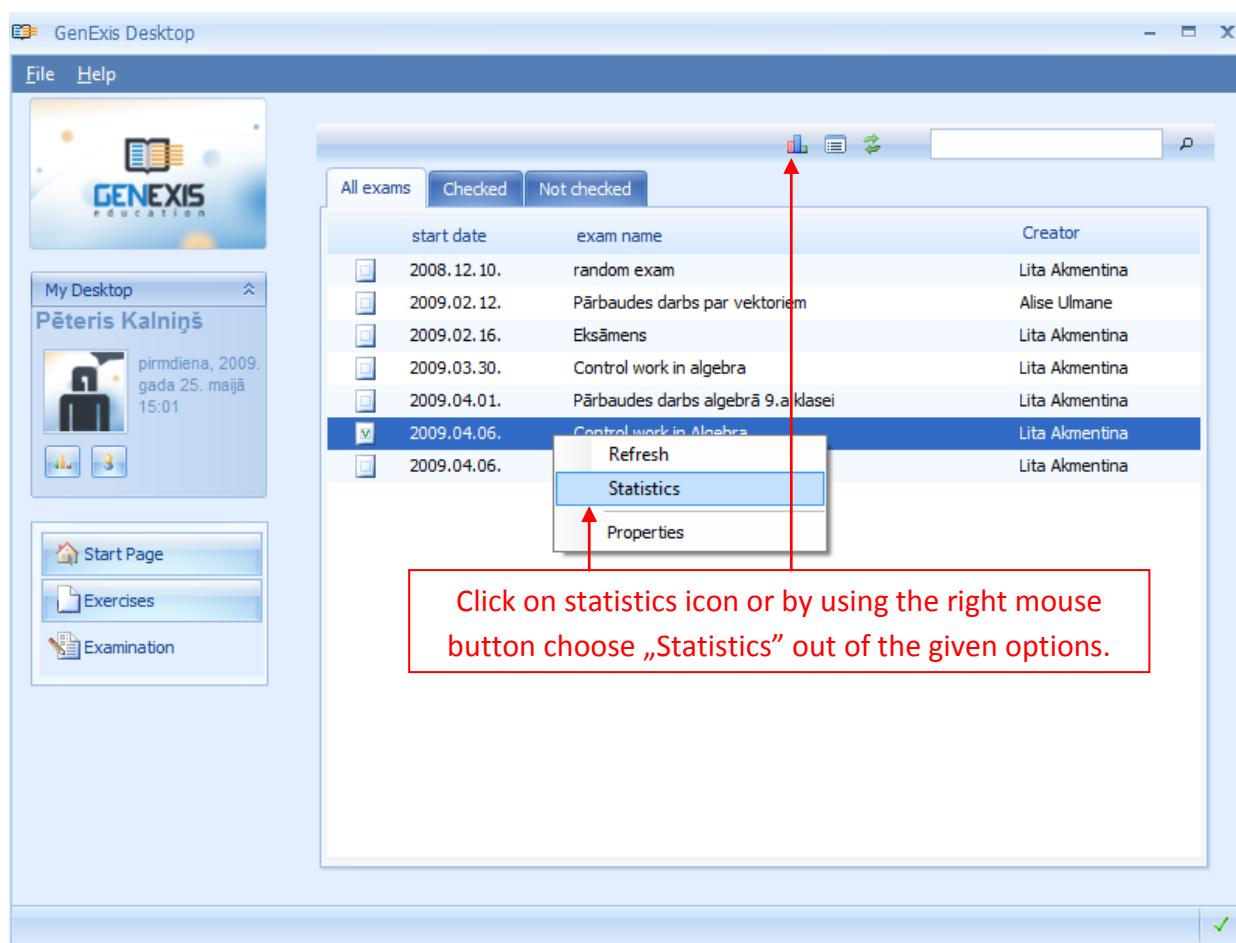
**Note:** if the pupil will try to take one and the same exam twice, the system will not allow doing that.

## Theme 7: How to view the exam results?

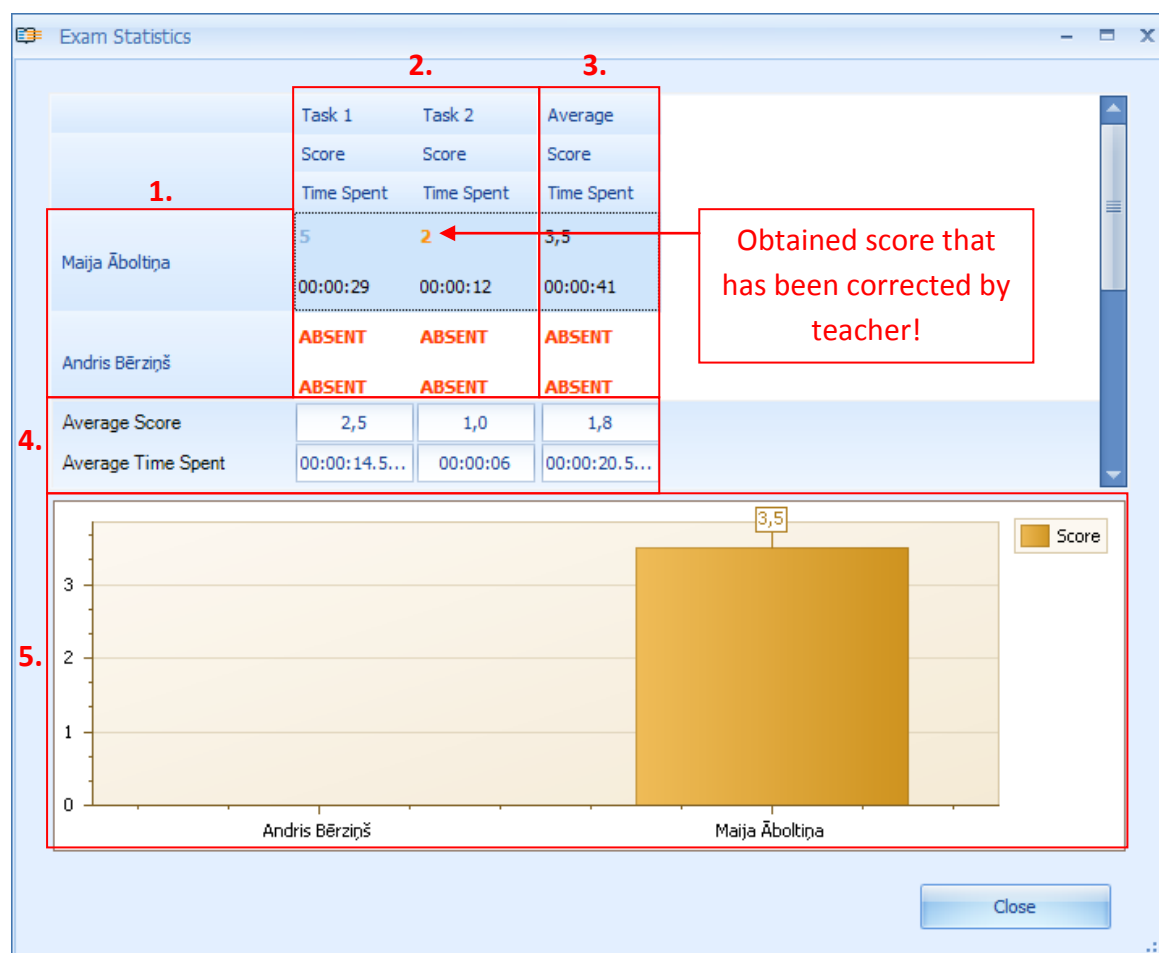
The pupils can view their exam results as soon as the teacher has marked the exam as checked. The icon next to the exam name notifies about it:



All the checked exams are stored in the section “Checked” of „Examination” window. The pupil can view the exam results (if the teacher has allowed it in the exam settings) in the form of statistics. The statistics of their personal results (mostly used option) or results of all the exam participants are available to the pupils. In order to open the statistical data of the exam double click on the exam name. Alternatively the pupil can select the corresponding exam and click on the statistics icon or click the right mouse button on the exam name and choose the statistics option out of the given menu.



The exam statistics will be opened in a new window:



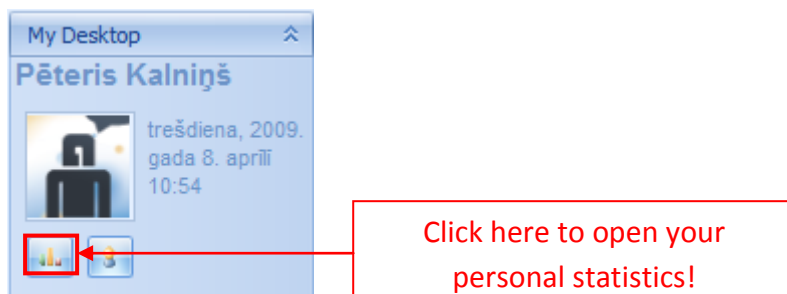
In the statistics window the pupil can get acquainted with the exam participants (depending on whether the teacher has allowed the pupil to see the statistical data of their personal achievements or those of other participants, the pupil will see only his/her name in this list or see a list of all participant names) [1], obtained score and time each participant spent accomplishing each task (ABSENT means that the pupil has not taken part in the exam) [2], average score of each participant [3], average score in each exercise and of all participants together [4], graphical visualization of statistical data [5].

If the pupil has answered incorrectly to the exam questions then he or she will obtain 0 points for that exercise. If the pupil has given correct answer then they receive the maximum score set for that exercise (the number showing points obtained will be blue). If the obtained score to any of exam questions is orange it means that the teacher has made corrections to the results of this question. By clicking on that result the pupil can become acquainted with the reason for the corrections.

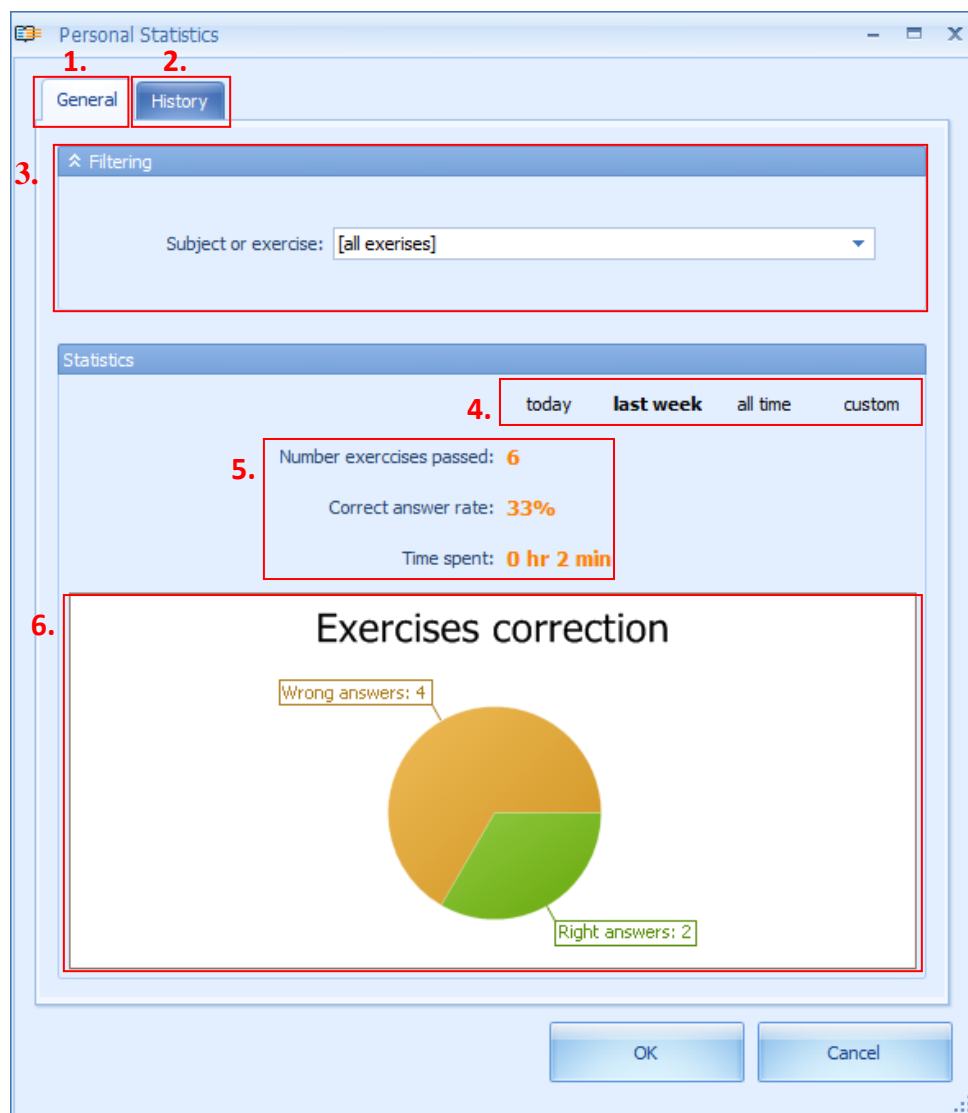
The pupil can just view these results. In case of objection he or she should turn to their teacher personally. In order to close the exam result window click on "Close".

## Theme 8: Personal statistics

Each user in the GenExis system is able to see their personal statistics, which is based on obtained results while solving exercises for the training or other purposes. The personal statistics window can be opened from any section of the GenExis system through the user desktop:



When the personal statistics window is opened, the user will be able to get to know general information of his/her overall results [1] and the history of exercise completions [2]:



It is possible to filter statistical data for particular subject or topic or particular task by using the filtering tool [3]. It allows the user to check the statistics of their results in a more detailed manner. The data filter is done in a very simple way: the user has to open the menu with a single mouse click and find the corresponding subject, theme or exercise in the offered menu.

The statistical data can be selected not only by the subject or exercise but also by the time [4]. The system offers a convenient way to select the data for today (the day that the user views the statistical data), last week, all time (starting from the user's registration day till this day) or by determining the time period manually (entering the start date and the end date).

The statistical data is formed of information on total amount of accomplished exercises, percentage ratio of correct exercises and the time spent to accomplish exercises [5]. Additionally statistical data is supplemented with graphical visualization [6], displaying the numerical ratio of correct and incorrect answers in a form of a diagram.

In the history section the user is able to view the full version of stored exercises including the user's given answer. Moving on to the history section the list of accomplished exercises [3] and its selection tool [1] is opened.

1. Advanced filtering

Exercise:  Subject:

Correct:  Solution:

2. today week all time custom

3. Statistics

Date	Exercise name	Score
08 Apr 2009 10...	Quadratic equation	5
08 Apr 2009 10...	Inequalities	0

OK Cancel

The history can be filtered according to several parameters: task (by typing its name), subject (by choosing the corresponding subject in the given menu), the correctness of the user's entered answer (by choosing to select only those exercises to which the user has given a correct or incorrect answer), existence of solution (selecting only those exercises with or without solution using the given menu). The historical data can be filtered not only by one parameter but several parameters simultaneously. When the user has set all the desired parameters that needs to be used for data filtering, click „Apply” to perform the action. By clicking on „Refresh” button all the filtering settings will be canceled and the user will be able to view the full history list.

It is possible to select the history statistics by the time [2] in the same way as for general statistics. Namely, the system offers a convenient way to select the data for today (the day that the user views the statistical data), last week, all time (starting from the user's registration day till this day) or by determining the time period manually (entering the start date and the end date).

**Note:** the history data will be stored in the system history for 14 days unless different time period is set in the Educational organization settings.

Additionally the user can view each exercise in detail. The user can double click to open the exercise and view not only the exercise question, solution and the correct answer but also the answer given by him/her:

The screenshot shows a window titled "Exercise result details". The content is as follows:

We obtain following expression:

$$3x \leq 4x + 1$$

3) Solve the obtained expression:

$$3x - 4x \leq 1$$

$$-x \leq 1$$

Please, note that if both sides of an inequality are multiplied (or divided) by a negative number, than one must reverse the sign of the inequality.

$$x \geq -1$$

**Answer:**  $x \in [-1; +\infty)$

---

**Answer**

User answer	Correct answer
Please, select the correct answer!	Please, select the correct answer!
<input type="radio"/> $x \in (-1; +\infty)$	<input type="radio"/> $x \in (-1; +\infty)$
<input checked="" type="radio"/> $x \in [1; +\infty)$	<input type="radio"/> $x \in [1; +\infty)$
<input type="radio"/> $x \in [-1; +\infty)$	<input checked="" type="radio"/> $x \in [-1; +\infty)$
<input type="radio"/> $x \in (1; +\infty)$	<input type="radio"/> $x \in (1; +\infty)$

**Note:** Viewed this way the user is able to look through the exercise and solution process not change their answer and the exercise question.