Preparing and uploading questions

2015-2026, 73rd edition

EduBase offers the possibility to **upload questions** directly **to the Quizzing system**. There are four ways to do this:

- one by one on the EduBase User Interface (UI)
- one by one with **EDU files**
- **in batch with an Excel (XLSX) spreadsheet**
- in batch with a **ZIP archive** that can include EDU, XLSX files and images in any combination

There's not much to elaborate on the former, the interface is quite intuitive. The spreadsheet format, on the other hand, requires the user to follow certain rules. The purpose of this document is to describe the rules and options built into the system.

First, we present the **possibilities** so that you can make the most of them. The evaluation is linked to the question type, which are listed below:

- ◯ **GENERIC**: full match required
  - spaces, punctuation [these are: period(.), comma(,), semicolon(;)] should also match
- A **TEXT**: for definitions, or to complete sentences (i.e. fill the gaps)
  - spaces, punctuation marks do **NOT** matter *(e.g. “ apple. “ ~ “apple”)*
- ¶ **FREE-TEXT**: for more complex definitions, longer text responses
  - scoring is semi-automatic, e.g. a moderator is required to score if the system cannot evaluate the answer based on previous scores and rules
- 🕮 **READING**: for longer or stand-alone texts, without extra configurations needed
  - non-assessed exercise, no answer is needed
  - set as the first task in a complex question group, the text will be displayed compactly for the subsequent questions
- ◎ **CHOICE**: select the correct answer from the given options
  - options displayed in random order
  - options are either pre-populated or dynamically selected from questions within the same group and category
  - **parameterizable**
    - both answer and all the options

- **MULTIPLE-CHOICE**: similar to CHOICE but with more than 1 correct answer
- **ORDER**: correct ordering of given options
  - options displayed in random order
  - displays the elements of the ANSWER field
- **GROUPING**: assigning to groups
  - the elements in the ANSWER field are the groups, while the elements to be grouped are in the ANSWER_LABEL field or in the ANSWER field with the special triple-arrow operator annotation
  - the ANSWER field will contain the same element for elements belonging to the same group!
  - both elements and groups appear in random order
- **PAIRING**: pairing elements
  - the elements in the ANSWER field are the pairs, while the elements to be paired are in the ANSWER_LABEL field or in the ANSWER field with the special triple-arrow operator annotation
  - the pairs appear in random order
- **TRUE/FALSE**: statements for which true or false should be selected
  - the elements of the ANSWER field are the true statements, elements of the OPTIONS are false statements
  - in addition to true and false, you can optionally set a third option as well with TRUEFALSE_THIRD_OPTIONS
  - the statements appear in random order
- **NUMERICAL**: check numerical values
  - handles INTEGER and FLOAT numbers
  - simple fractions (a/b) and common mathematical constants (pi, e) can be used
  - **interval responses**: {from}-{to}
    - automatic subpoints if a part is correct
    - support for open and closed intervals *(with the usual mathematical notation: [a;b] /]a;b[/ (a;b) / …)*
  - default **precision** is 2 decimal places, but this can be set optionally
  - to separate decimals, use a period(.), but it also handles commas!
- **DATE/TIME**: for calendar dates
  - adjustable “precision”: year, month, day
  - **many accepted formats**
    - describe months in text, abbreviated *(for example: mar, March)*
    - spaces, punctuation marks, slashes (/) do NOT matter *(for example: 12/26/2015, 1226/2015, 12.26.2015)*
    - only using numbers *(for example: 12262015)*
    - BC/AD (“negative dates”) support
  - **range of responses**: {from}-{to}, also with adjustable precision
    - automatic subpoints if a part is correct
    - certain parts of the date may be omitted in the final date
      - *year* precision: 2000-15, *day* precision: 24/12/2015-26
  - recommended format: YYYY, MM/YYYY and MM/DD/YYYY for precision
- **EXPRESSION**: for evaluating formulas
  - adjustable result precision
  - **mathematically evaluate** the input and the answer to compare
    - selectable **matching method**
      - RANDOM precision: *default setting*, checks at randomly chosen points whether the input and the answer give the same results at the given precision level

    - INTEGER and FLOAT (*default*) types
    - ranges can be set in which values should or should not be generated
  - EXPLICIT: evaluation and comparison with the expected result at predefined values
- **built-in functions** that can be used: sqrt, abs, ln, log, log10, round, floor, ceil, sin, cos, tan, csc, sec, degree2radian, radian2degree, number2binary, binary2number, number2octal, octal2number, number2hexadecimal, hexadecimal2number, number2roman, roman2number, factorial, permutations, sinh, arcsin, asin, arcsinh, asinh, cosh, arccos, acos, arccosh, acosh, tanh, arctan, atan, arctanh, atanh
  - you should use as few functions as possible in the answer, because they slow down the evaluation
  - these **can be nested**, but avoid their use if possible!
  - for 2 parameters, **use semicolons to separate the arguments**! Such functions are: min(a;b), max(a;b), mod(n;i), fmod(n;i), div(a;b), intdiv(a;b), gcd(a;b), lcm(a;b), number2base(n;b), base2number(n;b), combinations(n;k), combinations_repetition(n;k), variations(n;k), variations_repetition(n;k)
- **can be parameterized** (more on parameterization later)

- **MATRIX**: evaluate of arbitrary matrices
  - operates similarly to **NUMERICAL** question types
  - input format:
    - **[…]** the matrix delimiter
    - **;** *(semicolon)* to separate columns
    - **|** *(vertical line)* to separate lines
    - example: *[1; 2 | 3; 4] is a 2x2 matrix,* or *[1; 2; 3] is a three-element vector,* or *[1 | 2] is a two-element column vector*
- **MATRIX:EXPRESSION**: a matrix of expressions similar to the previous one
  - operates similarly to **EXPRESSION** question types
  - input format is the same as described for MATRIX
- **SET**: unordered, contains individual elements
  - similar to a numeric MATRIX vector, but repetitions and order are not important
- **SET:TEXT**: similar to SET but with text elements
- **HOTSPOT**: marking parts of images
  - HOTSPOT_IMAGE is the image to be marked, where the correctness of the markers placed by the user is defined by the zones specified in the HOTSPOT_ZONES field
  - the elements of the ANSWER field are only the names of the zones defined in HOTSPOT_ZONES
  - **not available to all users**, please check the online editor before using this type!
- **FILE**: evaluate uploaded file
  - similarly to FREE-TEXT scoring is semi-automatic
  - **not available to all users**, please check the online editor before using this type!

What makes EduBase's Quizzing system great, are the dynamically generated questions, made possible by **parameterization**. This means that the questions (including the answers) are uploaded with parameters, along with generator rules set and then almost every user can be given a different task (with pseudo random algorithms, matching questions can occur, especially with not well-chosen generator rules), and the evaluation is done according to the randomly generated numbers.

An Excel spreadsheet filled in according to the instructions in this document is essential for successful uploading. The system supports older (**2003 XLS**) and newer (**2007 or newer XLSX**) formats. If you can, however, you should prefer the latter, as we may sunset the support for XLS in the future.

Most important notes: in the file, **work only on the first worksheet** (the rest can be used for your own purposes), you can **color the cells as you like**, as the interpreter will ignore them. A row corresponds to one question, **do NOT write more than one in a row**! Incorrectly filled rows will be skipped and the upload will continue with the next one as long as there is a next

one. **After three blank lines, the upload will stop**! Do **NOT use Excel formulas or references** (instead, copy and paste the required data)! We recommend downloading the sample files and expanding them with your questions. **Column names are case insensitive**, so it does NOT matter if you use upper or lowercase letters.

For most question types, **multiple answers can be given**. Separate them with the three "and" signs (**&&&**), hereinafter referred to as the "**triple-and operator**". You can also use the "**triple-or operator**" (**|||**), the "**triple-per operator**" (**///**) and "**triple-arrow operator**" (>>>) in certain places, make sure you use them correctly!

General good advice for creating questions:

- **LaTeX code blocks** ($$$$) should not be preceded by a \\ line break, and we should avoid using \\ followed by an inline code ($$). The latter can simply be replaced with a new line of block code.
- Be careful **not to insert unnecessary triple operators** as they may interfere with the upload
- It is practical to **"test" questions** before they are used by the target audience. The best way to do this is to create a blank quiz for yourself, where you can upload questions and start tests. Make sure that only you have access to it!
- **Parameters** should be specified in such an order that **those with dependencies are placed at the back**!
- **Parameter names** can only start with characters from the English alphabet, but can also contain numbers and underscores.
- For most question types, **multiple answers** can be given, which means that test takers will be presented with **multiple input fields** in which to enter their answers. By default, the evaluation will not depend on the order of inputs. That is, the answer given in reverse order will be considered as correct by the evaluator.
- It is recommended to check supported file formats and limitations for attachments in the online editor beforehand.
- You can **work in the same Excel file** because the **system will not reupload the questions you have already uploaded**!

Mandatory and recommended columns:

- **QUESTION**: the question itself
  - LaTeX code can be used ($$...$$ for inline, $$$$...$$$$ for block) when **QUESTION_FORMATUM=LATEX**!
    - *note*: LaTeX code block are not center aligned on the interface, but they start in a new line!
  - EduTags can be used: [[B]]..[[/B]], [[I]]..[[/I]] and [[U]]..[[/U]] (bold, italic and underlined styles respectively)
    - [[SUB]]..[[/SUB]] and [[SUP]]..[[/SUP]] can also be used for sub and superscript
    - [[CODE]]..[[/CODE]] and [[CODEBLOCK]]..[[/CODEBLOCK]] for code snippets
    - [[BACKGROUND:{color}]]...[[/BACKGROUND]] and [[COLOR:{color}]]...[[/COLOR]] for coloring
    - [[LINES]]..[[/LINES]] to number the lines
    - [[..]] to insert tables using the format similar to MATRIX but with double brackets
      - example: *[[1; 2 | 3; 4]]*
  - [[___]] can be used as placeholders to answer fields
  - place **images** in the question as [[IMAGE:{filename}]] (a file with this name must be attached to the question)
    - example: *[[IMAGE:test.png]]*
  - **parameters** must be referenced in curly brackets (*for example*: {p})
- **ANSWER**: the answers to the question
  - multiple solutions separated by triple-and operators (&&&)
  - the solution and the corresponding label can also be specified together using the triple arrow (>>>) operator
    - example: label >>> answer
  - in some cases the answer field may be left blank
  - **parameters** must be in brackets

If you leave the previous two columns empty, the upload will continue with the next entry!

- **TYPE**: the question type
  - leaving it blank will set it to the previous available question type

- **SUBJECT**: classification of the question into a larger topic
  - use the question editor in the EduBase UI for an up-to-date list of possible values
  - leaving it blank will set it to the previous available question's subject or to *Other*
- **CATEGORY**: category of the question
  - you can also specify a parent category with the optional MAIN_CATEGORY column, omitting it or filling it with an empty value (-) will automatically make CATEGORY the main category
  - leaving it blank will set it to the previous available question's category

The **five fields listed** above, plus the **main category**, **image** and **media** fields, form the **unique identifier of a question**. That is, if these seven fields match during the upload, the item will be considered to be already in the database, therefore it will not be added again. This allows you to work in the same file and upload it time after time to test or extend the pool of questions afterwards.

The columns described below are optional, some are only valid in certain cases (e.g. specific type, difficulty). In places where a field is not valid, the specified values will be ignored.

Optional columns:

- **LANGUAGE**: the language of the question
  - use the question editor in the EduBase UI for an up-to-date list of possible values
- **MAIN_CATEGORY**: the name of the category (for which CATEGORY will be a subcategory), the question will be an element of this
  - is empty by default, e.g. CATEGORY will be treated as the main category
  - specify **multiple levels (up to 2!)** by using the triple-per operator (///) with highest main category on the left
  - leaving it blank will set the main category of the previous question, this can be reset by setting a blank value (-) and making CATEGORY as the main category again
  - example: *Basic arithmetic operations /// Addition*
- **IMAGE**: the picture attached to the question
  - the filename of the image uploaded in the ZIP archive, including the extension (**case sensitive**)
  - images smaller than 512 pixels (any dimension) will disable the zooming ability
  - up to 1 picture per question (except if more is allowed in the online editor)
- **ATTACHMENT**: downloadable file displayed along the question
  - the filename of the attachment uploaded in the ZIP archive, including the extension (**case sensitive**)
  - **not available to all users**, please check the online editor before using this type!
  - up to 1 attachment per question (except if more is allowed in the online editor)
- **MEDIA_VIDEO**: embedded video displayed along the question (must be added to VideoBase first)
  - a **video code** is required, which can be extracted from the URL: /video/manager/**{code}**/... or copied from the ***Basic data and settings*** **popup** of the video
  - only 1 media allowed per question
- **MEDIA_AUDIO**: embedded voice content displayed along the question
  - the filename of the audio file uploaded in the ZIP archive, including the extension (**case sensitive**)
  - only 1 media allowed per question, audio ignored if MEDIA_VIDEO is also set

- **LABEL**: label questions
  - only predefined (by EduBase staff) labels can be used
  - specify multiple labels separated by the triple-and operator (&&&)
- **QUESTION_FORMAT**: how to display the question
  - accepted values:
    - **NORMAL**: *default*, normal, text question
    - **LONG**: long text question (with smaller letters and paragraphs)
    - **LATEX**: question in KaTeX format
  - image can be attached to any of these formats
- **ANSWER_REQUIRE**: how many answers must be given for the maximum score
  - not applicable for CHOICE and FREE-TEXT questions
- **ANSWER_ORDER**: the order of the answers matter
  - plus sign (+) to indicate YES, while blank field or minus sign (-) indicates NO (*default*)
- **ANSWER_HIDE**: hide correct answers on results page
  - plus sign (+) to indicate YES, while blank field or minus sign (-) indicates NO (*default*)
- **ANSWER_LABEL**: text displayed in/above the input field during the test
  - automatically activates the ANSWER_ORDER function
  - the label and the corresponding answer can be submitted together using the triple-arrow (>>>) operator in the ANSWER field
- **ANSWER_INDEFINITE**: any number of input fields can be entered, using the + and - buttons
  - plus sign (+) to indicate YES, while blank field or minus sign (-) indicates NO (*default*)
  - with this option, the labels will not appear on the interface
- **DIFFICULTY**: the difficulty level of the question
  - **0**: not classified (*default)*; **1**: easy - **5**: difficult
  - **selectable difficulties in the editor**: easier (1-3), normal (0, 2-4) and harder (3-5)
  - leaving it blank will set it to the previous available question's difficulty
- **OPTIONS**: give options for multiple-choice questions
  - only applicable for CHOICE / MULTIPLE-CHOICE questions
  - specify different options separated by a triple-and operator (&&&)
  - **parameters** must be in brackets
- **OPTIONS_FIX**: fix the order of answers and options
  - accepted values:
    - **all**: first the answers, then the options
    - **abc**: display correct answers and options in alphabetical order
    - **first:N**: fix the first N (*number*) options in last position
    - **last:N**: fix the last N (*number*) options in the last position
    - **answers**: the answers should appear last
- **MAXIMUM_CHOICES**: limit the number of choices selected
  - only applicable for MULTIPLE-CHOICE questions

- **POINTS**: maximum score for the fully correct answer
  - for missing answers, the points earned is reduced proportionally (e.g. 1 good and 1 bad answer is worth 50%)
- **SUBSCORING**: the method for scoring partially correct answers
  - not applicable for CHOICE, READING and FREE-TEXT questions
  - accepted values: **PROPORTIONAL / LINEAR_SUBTRACTED:N / CUSTOM / NONE**
  - N is an arbitrary score
  - in the case of CUSTOM, SUBPOINTS is mandatory and these settings are only applicable together
  - example: *PROPORTIONAL* or *LINEAR_SUBTRACTED:2*
- **SUBPOINTS**: score values assigned to answers, in percentage
  - not applicable for CHOICE, READING and FREE-TEXT questions
  - specify percentage values separated by a triple-and operator (&&&)
- **MANUAL_SCORING**: when to use manual scoring
  - not applicable for READING and FREE-TEXT questions
  - accepted values: **NO** / **NOT_CORRECT** / **ALWAYS**
- **RUBRIC_CRITERIA**: rubric criteria and score in percentage
  - applicable for FILE and FREE-TEXT questions, or after enabling MANUAL_SCORING
  - notation: ***{criterion; points}***
    - *criterion*: short name for the criterion
    - *points*: achievable score in percentage for the criterion
  - specify multiple criteria separated by a triple-and operator (&&&)
- **PENALTY_SCORING**: how penalty points should be given
  - accepted values: **DEFAULT** / **PER_ANSWER** / **PER_QUESTION**
  - example: *DEFAULT* or *PER_ANSWER*
- **PENALTY_POINTS**: penalty for a completely incorrect answer
  - if there is a correctly answered part of the question, sub-points are given instead of a penalty
  - if there is no answer or left empty, no penalty will be given
- **SKILLS**: setting the scoring for various skills
  - accepted values:
    - simple notation: ***{identifier; points}***
      - *identifier*: the unique identifier of the defined skill
      - *points*: number of points that can be earned (proportional to the score achieved on the question)
      - example: *{reading; 2}*
    - extended notation: ***{identifier; points; correct; incorrect; fix}***
      - *correct*: points awarded for a correct answer
      - *incorrect*: points awarded for an incorrect answer
      - *fix*: points always awarded
      - example: *{reading; 0; 2; -2; 0}*
    - special notation: ***{identifier; points; correct; incorrect; fix; (per selection)}***
      - *per selection*: for CHOICE and MULTIPLE-CHOICE questions, the score awarded for the specified answer or option in the following format: ***type:index:points*** separated by semicolons (;)
        - *type*: option (for an option) or answer (for an answer)
        - *index*: index number of the specified option or answer
        - *points*: points awarded for the selection

    - example: *{reading; 0; 0; 0; 1; (answer:1:2; option:2:-3; option:3:-1)}*
  - specify multiple skills separated by triple-and operators (&&&)
  - will only affect skills defined in the Quiz set
- **NOTE**: the text that appears right below the question
  - providing task-specific comments and instructions
- **PRIVATE_NOTE**: private notes (not shown to test takers)
- **SOURCE**: specify source of question content (also not shown to test takers)
- **EXPLANATION**: text displayed underneath the answer on the results page
  - explanation of the correctness of the answer or the incorrectness of the options
- **HINT**: questions to help (not solution steps, just guiding questions/notes)
  - LaTeX code can be used (as described in QUESTION)
  - specify multiple solution steps separated by triple-and operators (&&&)
- **SOLUTION**: step-by-step solution
  - LaTeX code can be used (as described in QUESTION)
  - specify multiple solution steps separated by triple-and operators (&&&)
- **SOLUTION_IMAGE**: the image displayed with the solution steps
  - as described in IMAGE
- **HINT_PENALTY**: deduction of points for the hints used
  - notation: **type** or **type:value**
  - accepted values:
    - **NONE**
      - no deduction of points
    - **ONCE**
      - a single deduction of points, regardless of the number of hints used
      - example: *ONCE:20%* or *ONCE:0.2*
    - **PER-HELP**
      - points deducted per hints taken
      - example: *PER-HELP:10%*
- **SOLUTION_PENALTY**: deduction of points for solution steps used
  - as described in the section HINT_PENALTY
- **DECIMALS**: decimal precision (*default: 2*)
  - applicable only for NUMERICAL / EXPRESSION / MATRIX / MATRIX:EXPRESSION / SET questions
  - leaving it blank will set it to the previous available question's decimal precision
  - the expected decimal precision of the final answer
- **NUMERICAL_RANGE**: number range (interval) question
  - only applicable for NUMERICAL questions
  - plus sign (+) to indicate YES, while blank field or minus sign (-) indicates NO (*default*)

- **TRUEFALSE_THIRD_OPTIONS**: activate the third option for TRUE/FALSE questions
  - plus sign (+) to display the third option OR specify such options separated by triple-and operators (&&&) (this will automatically turn on the feature)
  - **parameters** must be in brackets
- **TRUEFALSE_THIRD_OPTIONS_LABEL**: label of the third option
  - if none or blank, the text “none” is displayed (*default*)
- **DATETIME_PRECISION**: date/time precision
  - applicable only for DATE/TIME questions
  - accepted values: **YEAR** / **MONTH** / **DAY**
  - leaving it blank will set it to the previous available question's date/time precision
- **DATETIME_RANGE**: date/time range (interval) question
  - applicable only for DATE/TIME questions
  - plus sign (+) to indicate YES, while blank field or minus sign (-) indicates NO (*default*)
- **FREETEXT_CHARACTERS**: limit the number of characters that can be entered
  - applicable only for FREE-TEXT questions
  - format: *minimum-maximum*, but you can specify only a minimum or maximum as well
  - integer(s) between 0-4000
  - example: *-3000* or *100-* or *200-800*
- **FREETEXT_WORDS**: limit the number of words that can be entered
  - as described in the section FREETEXT_CHARACTERS
- **FILE_COUNT**: limit the number of files that can be uploaded
  - applicable only for FILE questions
  - integer between 1-25
- **FILE_TYPES**: limit the filetypes that can be uploaded
  - applicable only for FILE questions
  - file extensions separated by triple-and operators (&&&)
  - example: *pdf* or *zip &&& rar*
- **HOTSPOT_IMAGE**: the image on which the points must be marked
  - as described in IMAGE
- **HOTSPOT_ZONES**: zones accepted as answers
  - all numerical values **must be entered as percentages**!
  - in case of coordinates, (0; 0) is the upper left corner of the image, while (100; 100) is the lower right corner
  - zones separated by triple-and operators (&&&)
  - accepted values:
    - for **circle**
      - circular zone
      - notation: ***{circle; X; Y; R}***
        - *X*: X (horizontal) coordinate of the center of the circle
        - *Y*: Y (vertical) coordinate of the center of the circle
        - *R*: radius of the circle (proportional to the width of the image)
      - example: {*circle; 50; 50; 10}*

    - for **rectangle**
        - rectangular zone
        - notation: **{rectangle; *X1; Y1; X2; Y2*}**
            - *X1*: X (horizontal) coordinate of the upper left corner of the rectangle
            - *Y1*: Y (vertical) coordinate of the upper left corner of the rectangle
            - *X2*: X (horizontal) coordinate of the lower right corner of the rectangle
            - *Y2*: Y (vertical) coordinate of the lower right corner of the rectangle
        - example: {*rectangle; 25; 25; 50; 50}*

- **EXPRESSION_EXTENDED**: activate extended functionality
    - **logN** functions [*example: log2(4) or log10(1000)]*
    - **factorial** support *(example: 5! or 1!+2!+3!)*
    - plus sign (+) to indicate YES, while blank field or minus sign (-) indicates NO (*default*)
- **EXPRESSION_FUNCTIONS**: enable the usage of functions in user inputs
    - blank field or plus sign (+) to indicate YES (*default*), while minus sign (-) indicates NO
- **EXPRESSION_VARIABLE**: variable names used in the expressions (*default*: x)
    - multiple variables are separated by triple-and operators (&&&)
    - example: *y* or *omega &&& t*
- **TOLERANCE**: evaluation tolerance method
    - applicable only for NUMERICAL / EXPRESSION / MATRIX / MATRIX:EXPRESSION / SET questions
    - notation: **type** or **type:value**
    - accepted values:
        - **ABSOLUTE** (absolute error)
            - maximum difference between answer and user input
            - example: *ABSOLUTE:10*
        - **RELATIVE** (relative error, in percentage)
            - maximum difference in percentage between answer and user input (SMAP value)
            - example: *RELATIVE:5%* or *RELATIVE:0.05*
        - **QUOTIENT** (integer multiple) and **QUOTIENT2** (scalar multiple)
            - answer and user input are scalar or integer multiples of one another
            - append *:SYNCED* to activate the synchronized mode
            - example: *QUOTIENT* or *QUOTIENT2:SYNCED*
- **PARAMETERS**: define parameters
    - their names must begin with a letter from the English alphabet, but may include numbers and underscores
    - accepted values:
        - **FIX** (fixed)
            - a predefined constant value (integer or fraction)
            - full notation: **{*name*; FIX; *value}***
                - *name*: name of the parameter
                - *value*: the constant
            - example: {*p; FIX; 3.1415}*
        - **INTEGER** (whole number)
            - simple notation: **{*name*; INTEGER}**
                - *for example: {x; INTEGER} is a parameter representing an integer x*
            - extended notation: **{*name*; INTEGER; *min*; *max*}**
                - *min*: lower limit for random number generator
                - *max*: upper limit for random number generator

    - full notation: **{*name*; INTEGER; *min*; *max; inside*; *outside*}**
      - *inside*: *[kezdete-end]* notation, is the interval in which numbers will be generated
      - *outside*: *[start-end]* notation, is the interval in which numbers will NOT be generated
    - if not necessary, avoid using the full notation!
    - if you don't want to set neither of min, max, inside and outside values, use the empty value option (-), for example: *{p; INTEGER; 0; -} to generate non-negative integers*
    - example: *{p; INTEGER}* or *{p; INTEGER; 10; 20}* or *{p; INTEGER; -; -; [10-20]; [12-14] ||| [16-18]}*
  - **FLOAT** (fraction)
    - simple notation: **{*name*; FLOAT; *precision*}**
      - *precision*: the number of decimal places
    - extended notation*: **{name; FLOAT; precision; min; max}***
    - full notation: **{*name*; FLOAT; precision; *min*; *max; inside*; *outside}***
    - example: *{p; FLOAT; 2}* or *{p; FLOAT; 5; 0; 1}* or *{p; FLOAT; 1; 0; 10; -; [0-1]}*
  - **FORMULA** (expression)
    - simple notation: **{*name*; FORMULA; *formula}***
      - *formula*: parameter set as a function of the parameters (**written with curly brackets**)
    - full notation: **{*name*; FORMULA; *formula; precision}***
    - example: *{p; FORMULA; {b}^2-4*{a}*{c}}* or *{p; FORMULA; 2*{q}+1}*
  - **LIST** (list)
    - will be randomly selected from a set of predefined values
    - full notation: **{*name*; LIST; *value1; value2; value3; …}***
      - *values* separated by semicolons
      - up to 64 elements
    - example: {*p; LIST; 1; 2; 3; 4} is a 4 element list*
  - **PERMUTATION** (permutation)
    - similarly to LIST parameter provided list is permutated and exposed through virtual parameters; for example if *example* is the parameter instead of using the standard *{example}* format you can access the first item as *{example_1}*, *{example_2}* for the the second and so on (in the form of *{example_N}*)
    - example: {*p; PERMUTATION; A; B; C; D}*
  - **FORMAT** (formatting)
    - notation: **{*name*; FORMAT; *parameter*; *type; …}***
      - *parameter*: the parameter to format (without curly brackets)
      - *type*: formatting mode, supported values: NUMBER, NUMBERTEXT, ROMAN
      - …: optional extra parameters based on type
        - NUMBER
          - *precision*: round to number of digits
    - example: *{pp; FORMAT; p; NUMBER}* or *{pp; FORMAT; p; NUMBER; 0}*
- using **quick expressions**: sometimes we want to use the parameters in the task by modifying them, to perform simpler operations. To do this, we can use the triple-wave (~~~) operator!
  - usage: ~~~*expression*~~~
  - *note*: these are converted to FORMULA type parameters during upload
- specify multiple parameters (up to 128) separated by triple-and operators (&&&)

- **PARAMETERS_SYNC**: synchronization of LIST parameters selection

- plus sign (+) to indicate YES, while blank field or minus sign (-) indicates NO (*default*)

- **CONSTRAINTS**: define constraints on parameters
  - equations that must be satisfied for the parameterization to be accepted
  - **parameters must be in curly brackets**
  - **allowed relations**: < / <= / = / >= / > / <>
  - built-in functions can be used, but try to avoid
  - specify multiple constraints separated by triple-and operators (&&&)
  - example*: {b}^2-4*{a}*{c}>0* or *{x}+{y}<10 &&& {x}<4*
- **OPTIONS_ORDER**: configure custom order of answers and options
  - not all question types are supported
  - **ANSWER:N** or **OPTION:N** items separated by the triple-and operator (&&&)
    - ANSWER:N is the Nth provided answer
    - OPTION:N is the Nth provided option
    - OPTION_NONE:N is the Nth provided third option (in case of TRUE/FALSE questions)
    - all answers and options must be specified once!
  - example: *OPTION:1 &&& ANSWER:0 &&& OPTION:0 &&& ANSWER:1*
- **ERRORS**: tag erroneous options, so that you can follow what logic may have caused an incorrect answer
  - applicable only for CHOICE questions
  - separate error labels for each option with triple-and operators
    (where there is no label for the option, use a plain, simple hyphen)
  - specify multiple error tags for an option separated by triple-or operators (|||)
  - omit whitespace characters in tags
- **GROUP**: add a question to a question group in the Quiz set
  - only applicable when uploading into a Quiz set directly
  - if there is no group with the given name, a new group will be created (as a complex task with default settings)
  - existing question group settings will not be changed when adding more questions
- **TAGS**: tag questions
  - use ID or code
  - only previously registered (by user or organization) tags can be used, see in application!
  - specify multiple tags separated by the triple-and operator (&&&)
- **EXTERNAL_ID**: on repeated uploads, the questions are updated (rather then added) based on this value
  - if a question already exists at upload time with a given external identifier (in the given folder or Quiz set), the existing question will be updated instead of being added as a new one
  - arbitrary text identifier, you may want to encode the source of the task here
  - equals to the mandatory id field if API is used