# Study learning and assigning homework to student in online context

**Abstract**

Allow deleting : If enabled, participants may delete uploaded files at any time before submitting for grading. Maximum number of uploaded files : Maximum number of files each participant may upload, this number is not shown to students, please write the actual number of requested files in assignment description.

Allow notes : If enabled, participants may enter notes into text area. It is similar to Online text assignment. This text box can be used for communication with the grading person, assignment progress description or any other written activity.

Assignment Type : There are different types of assignments

Offline activity - this is useful when the assignment is performed outside of Moodle. Students can see a description of the assignment, but can't upload files or anything. Teachers can grade all students though, and students will see notifications of their grades.

Upload a single file - this type of assignment allows all students to upload a single file, of any type. This might be a Word processor document, or an image, a zipped web site, or anything you ask them to submit. Teachers can grade submitted assignments online.

Comment inline : If this option is selected, then the original submission will be copied into the feedback comment field during grading, making it easier to comment inline (using a different color, perhaps) or to edit the original text. Send notification email : If you turn this on then students will be notified via email about their grades and feedback. Your personal preference is saved and will apply to all assignment submissions you grade.

Email alerts to teachers : If enabled, then teachers are alerted with a short email whenever students add or update an assignment submission.

Only teachers who are able to grade the particular submission are notified. So, for example, if the course uses separate groups, then teachers restricted to particular groups won't receive any notices about students in other groups. For offline activities, of course, mail is never sent since students never submit anything.

Hide description before available date : If enabled, assignment description is hidden before the opening date. Mods : Assignments

Assignments allow the teacher to specify a task that requires students to prepare digital content (any format) and submit it by uploading it to the server. Typical assignments include essays, projects, reports and so on. This module includes grading facilities.

Page size : Enter a number to specify how many submissions you want to see on one page. Your preference is saved and will apply to all assignments in all courses.

Quick Grade : With quickgrading enabled you can quickly grade multiple assignments on one page. Just change the grades and comments and use the Save button at the bottom to save all your changes for that page at once. The normal grading buttons on the right still work too in case you need more space. Your quickgrading preference is saved and will apply to all assignments in all courses.

Resubmitting assignments : By default, students cannot resubmit assignments once the teacher has graded them If you turn this option on, then students will be allowed to resubmit assignments after they have been graded (for you to re-grade). This may be useful if the teacher wants to encourage students to do better work in an iterative process. Obviously, this option is not relevant for offline assignments.

Send for marking : The "Send for marking" button allows users to indicate to graders that they have finished working on an assignment. Graders may choose to revert the assignment to draft status (if it requires further work, for example).

Assignment Types (Types) : There are a growing number of assignment types available:

**Offline activity** : This is useful when the assignment is performed outside of Moodie. It could be something elsewhere on the web or face-to-face. Students can see a description of the assignment, but can't upload files or anything. Grading works normally, and students will get notifications of their grades.

**Online text**

This assignment type asks users to edit a text, using the normal editing tools. Teachers can grade them online, and even add inline comments or changes. (If you are familiar with older versions of Moodie, this Assignment type does the same thing as the old Journal module used to do.)

**Upload a single file**

This type of assignment allows each participant to upload a single file, of any type. This might be a Word processor document, or an image, a zipped web site, or anything you ask them to submit.

**Advanced uploading of files**

This type of assignment allows each participant to upload one or more files in any format. These might be a Word processor documents, images, a zipped web site, or anything you ask them to submit. This type also allows you to upload multiple response files. Response files can be also uploaded before submission which can be used to give each participant different file to work with. Participants may also enter notes describing the submitted files, progress status or any other text information. Submission of this type of assignment must be manually finalized by the participant. You can review the current status at any time, unfinished assignments are marked as Draft. You can revert any ungraded assignment back to draft status.

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**Allowing new posts** : This option allows you to restrict students from posting new content in this forum.

For most forums you will want to leave students unrestricted and choose the first option to allow them to start new discussion topics (threads), and also to post replies within those threads. Sometimes, however, you will want to disable this ability. For example, this is useful for the News forum when you only want teachers to post new items that appear on the course main page. In this case you might choose the third option "No discussions, no replies". Sometimes you might want to only allow teachers to start new discussions, but still allow students to reply within those threads (for example within the news forum on the site home page). In this case you would choose the second option, "No discussions, but replies are allowed".

**Forum Aggregation Types** : Forum aggregation defines how all the ratings given to posts in a forum are combined to form the final grade (for each post and for the whole forum activity). Choose from the following aggregation methods:

- Average (default)
- The mean of all the ratings given to posts in that forum. This is especially useful with peer grading when there are a lot of ratings being made.
- Count
- The number of rated posts becomes the final grade. This is useful when the number of posts is important.
  Note that the total can not exceed the maximum grade allowed for the forum.
- Max
- The highest rating is returned as the final grade. This method is useful for emphasising the best work from participants, allowing them to post one high-quality post as well as a number of more casual responses to others.
- Min
- The smallest rating is returned as the final grade. This method promotes a culture of high quality for all posts.
- Sum

All the ratings for a particular user are added together. Note that the total is not allowed to exceed the maximum grade for the forum.

**Attachments for posts** : You can optionally attach ONE file from your own computer to any post in the forums. This file is uploaded to the server and stored with your post. This is useful when you want to share a picture, for example, or a Word document. This file can be of any type, however it is highly recommended that the file is named using standard 3-letter internet suffixes such as .doc for a Word document, .jpg or .png for an image, and so on. This

will make it easier for others to download and view your attachment in their browsers. If you re-edit a posting and attach a new file, then any previous attached files for that post will be replaced. If you re-edit a posting with an attachment and leave this space blank, then the original attachment will be retained.

Forum Display Period : You can choose whether your forum posting is displayed from a certain date, expires on a certain date or is only displayed over a given period. Deselect the Disable option(s) to activate a display start and/or end date. Note that users with Admin access will see messages before their release date and after their expiry date. Forum Types :

There are several different types of forum to choose from:

A single simple discussion - is just a single topic, all on one page. Useful for short, focussed discussions.

Standard forum for general use - is an open forum where any one can start a new topic at any time. This is the best general-purpose forum.

Each person posts one discussion - Each person can post exactly one new discussion topic (everyone can reply to them though). This is useful when you want each student to start a discussion about, say, their reflections on the week's topic, and everyone else responds to these.

Q And A Forum - The Q & A forum requires students to post their perspectives before viewing other students' postings. After the initial posting, students can view and respond to others' postings. This feature allows equal initial posting opportunity among all students, thus encouraging original and independent thinking. (More development to come in future versions of Moodle)

News Forum : The news forum is a special forum that is automatically created for each course and for the front page of the site and is a place for general announcements. You can only have one news forum per course. The "Latest news" block will display recent discussions from this special forum (even if you rename it). For this reason the forum will be automatically recreated by Moodle if you are using the LatestNews block.

Forums


- ☐ Allow discussions
- ☐ Attachment
- ☐ Forum type
- ☐ Forum Tracking type
- ☐ Max attachment size
- ☐ Ratings
- ☐ Number of RSS recent articles
- ☐ RSS feed for this forum
- ☐ Subscription
- ☐ Display Period

Managed Postings Forums :

The concept of managed postings is very simple. Users will be blocked from posting after a given number of posts in a given period, and as they approach that number, they'll be warned that they are approaching the threshold. Setting either the warn threshold to 0 will disable warnings, and setting the block threshhold to 0 will disable blocking. If blocking is disabled, warnings will automatically be disabled. None of these settings affect teachers posting Maximum attachment size : Attachments can be limited to a certain size file, chosen by the person who set up the forum. Sometimes it is possible to upload a file larger than this size, but the file will not be saved on the server and you might see an error.

Forums : This activity can be the most important - it is here that most discussion takes place. Forums can be structured in different ways, and can include peer rating of each posting. The postings can be viewed in a variety for formats, and can include attachments. By subscribing to a forum, participants will receive copies of each new posting in their email. A teacher can impose subscription on everyone if they want to.

Ratings : Individual posts can be rated using a scale based on the theory of separate and connected knowing. This theory may help you to look at human interactions in a new way. It describes two different ways that we can evaluate and learn about the things we see and hear. Although each of us may use these two methods in different amounts at different times, it may be useful to imagine two people as examples, one who is a mostly separate knower (Jim) and the other a mostly connected knower (Mary).

- Jim likes to remain as 'objective' as possible without including his feelings and emotions. When in a discussion with other people who may have different ideas, he likes to defend his own ideas, using logic to find holes in his opponent's ideas. He is critical of new ideas unless they are proven facts from reputable sources such as textbooks, respected teachers or his own direct experience. Jim is a very separate knower.

- Mary is more sensitive to other people. She is skilled at empathy and tends to listen and ask questions until she feels she can connect and "understand things from their point of view". She learns by trying to share the experiences that led to the knowledge she finds in other people. When talking to others, she avoids confrontation and will often try to help the other person if she can see a way to do so, using logical suggestions. Mary is a very connected knower.

Did you notice in these examples that the separate knower is male and the connected knower is female? Some studies have shown that statistically this tends to be the case, however individual people can be anywhere in the spectrum between these two extremes. For a collaborative and effective group of learners it may be best if everyone were able to use BOTH ways of knowing. In a particular situation like an online forum, a single post by a person may exhibit either of these characteristics, or even both. Someone who is generally very connected may post a very separatesounding message, and vice versa. The purpose of rating each post using this scale is to:

a) help you think about these issues when reading other posts
b) provide feedback to each author on how they are being seen by others

The results are not used towards student assessment in any way, they are just to help improve communication and learning.

In case you're interested, here are some references to papers by the authors who originally developed these ideas:

**Number of RSS recent articles** : This option allows you to select the number of articles to include in the RSS Feed. A number between 5 and 20 should be appropriate for most forums. Increase it if the forum is very used.

**RSS feed for this forum** : This option allows you to enable RSS feeds in this forum. You can select between two types of forums:

- Discussions: Using this, generated feeds will include new discussions in the forum with their initial post.
- Posts: Using this, generated feeds will include every new post in the forum.

**Forum Subscription** : When a person is subscribed to a forum it means that they will be sent email copies of every post in that forum (posts are sent about maxeditingtime/60 *'/>* minutes after the post was first written). People can usually choose whether or not they want to be subscribed to each forum. However, if you choose to force subscription on a particular forum then all course users will be subscribed automatically, even those that enrol at a later time. This is especially useful in the News forum and in forums towards the beginning of the course (before everyone has worked out that they can subscribe to these emails themselves). If you choose the option "Yes, initially" then all current and future course users will be subscribed initially but they can unsubscribe themselves at any time. If you choose "Yes, forever" then they will not be able to unsubscribe themselves. Note how the "Yes, initially" option behaves when you update an existing forum: Changing from "Yes, initially" to "No" will not unsubscribe existing users, it will only affect future course users. Similarly changing later to "Yes, initially" will not subscribe existing course users but only those enrolling later.

**Forum Subscription** : When a person is subscribed to a forum it means that they will be sent email copies of every post in that forum (posts are sent about maxeditingtime/60 *'t>* minutes after the post was first written). People can usually choose whether or not they want to be subscribed to each forum. However, if a teacher forces subscription on a particular forum then this choice is taken away and everyone in the class will get email copies. This is especially useful in the News forum and in forums towards the beginning of the course (before everyone has worked out that they can subscribe to these emails themselves).

**Forum Tracking Type** :

If 'read tracking' for forums is enabled, users can track read and unread messages in forums and discussions. The instructor can choose to force a tracking type on a forum using this setting.

There are three choice for this setting:

- Optional [default]: students can turn tracking on or off for the forum at their discretion.
- On: Tracking is always on.
- Off: Tracking is always off.

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**Adaptive mode** : If you choose Yes for this option then the student will be allowed multiple responses to a question even within the same attempt at the quiz. So for example if the student's response is marked as incorrect the student will be allowed to try again immediately. However a penalty will usually be subtracted from the students score for each wrong attempt (the amount of penalty is determined by the penalty factor, set by the next option). This mode also allows adaptive questions that can change themselves in response to a student's answer. Here is how the IMS QTI specification defines adaptive questions (items): An adaptive item is an item that adapts either its appearance,

its scoring (Response Processing) or both in response to each of the candidate's attempts. For example, an adaptive item may start by prompting the candidate with a box for free-text entry but, on receiving an unsatisfactory answer, present a simple choice interaction instead and award fewer marks for subsequently identifying the correct response. Adaptivity allows authors to create items for use in formative situations which both help to guide candidates through a given task while also providing an outcome that takes into consideration their path In adaptive mode an additional button is shown for each question. If the student presses this button then the response to that particular question is submitted to be scored and the mark achieved is displayed to the student. If the question is an adaptive question then it is displayed in its new state that takes the student's answer into account and will in many cases ask the student for another input. In the simplest adaptive questions this new state may differ only in the feedback text and prompt the student to try again; in more complicated question also the question text and even the interaction elements can change.

**Analysis Download:** You may want to download the data displayed in the on-screen table for further analysis. You can choose between three file formats for downloaded data. In each case data will be presented as a table with appropriate titles, as on the screen. If the table is paged, all data for all pages will be downloaded in a single file. **Excel Spreadsheet format:** You will get an .xls spreadsheet document.

**OpenOffice Writer format:** The data will we presented within a table in an OpenOffice .sxw text document. This format will be available only if you have installed the PHPWriter library in the /moodle/lib subdirectory.

**Text format** : In this case, data will be stored as a regular text file. A line for each row in the table with data separated by tabstops.

**Analysis Options** : You can determine which quiz attempts are included in the analysis by setting the following parameters:

**Attempt selection:** It may be convenient to analyze just one quiz attempt for each user. This particular attempt may be the one with the highest overall score, the first attempt or the last attempt of those performed. Alternatively all attempts data may be combined for a cumulative analysis.

**Rejection of low scores:** Sometimes users are just browsing the quiz, exploring it, and not going through it for a grade. It is common that such 'trial' attempts get very low scores. These attempts can be excluded from analysis by setting a low limit for the score of the attempts to analyze. This limit is specified as a percentage (0-100) of the maximum grade achievable in the quiz.

**Page size:** You choose how many questions per page you want to see displayed on screen.

**Quiz attempts** : Students may be allowed to have multiple attempts at a quiz. This can help make the process of taking the quiz more of an educational activity rather than simply an assessment.

**Browser security** : This option offers various ways to try to restrict how students may try to 'cheat' while attempting a quiz. However, this is not a simple issue, and what in one situation is considered 'cheating' may, in another situation, just be effective use of information technology. (For example, the ability to quickly find answers using a search engine.) Note also that this is not just at problem of technology with a technical solution. Cheating has been going on since long before computers, and while computers make certain actions, like copy and paste, easier, they also make it easier for teachers to detect cheating - for example using the quiz reports. The options provided here are not fool-proof, and while they do make some forms of cheating harder for students, they also make it more inconvenient for students to attempt the quizzes, and they are not fool-proof. You should alos consider other ways to make it harder for students to cheat at your quiz:

- You can use a large question bank, which the quiz picking a selection of questions randomly, so different students see different, but similar questions.
- You can use the shuffle answers option, so that the right answer to question 1 is not always option A.
- You can ask questions that required students to analyse the given information, rather than just recalling facts.
- With the above warnings in mind, here is the description of the available options.

**None**

No impediments are put in the way of students attempting the quiz. **Full**

**screen pop-up with some JavaScript security**

There is a limit to what the quiz, with runs on a web server, can do to restrict what the student sitting at their computer can do while attempting the quiz. However, this option does what is possible:

- The quiz will only start if the student has a JavaScript-enabled web-browser.
- The quiz appears in a fullscreen popup window that covers all the other windows and has no navigation controls.

• The students are prevented, as far as is possible, from using facilities like copy and paste.

**Require the use of Safe Exam Browser**

This option will only appear if your adminstrator has enabled it. Safe Exam Browser is a customised web browser that must be downloaded an installed on the computer that the student uses to attempt the quiz. The restrictions placed on students are similar to those in pop-up window case, but because Safe Exam Browser is software running on the student's computer, it can do a much more effective job of restricting their actions. If you select this option:

• Students will only be able to attempt the quiz if they are using Safe Exam Browser.
• The browser window will be fullscreen (without any navigation elements).
• The window cannot be closed until the test is submitted.
• Shortcuts keys such as Win, Ctrl+Alt+Del, Alt+F4, Fl, Ctrl+P, Printscreen, are disabled.
• Copy and paste, and the context menu, are disabled.
• Switching to other applications is disabled.
• Surfing to other web sites is prohibited.

**Calculated questions** :

Calculated questions offers a way to create individual numerical question by the use of wildcards that are substituted with individual values when the quiz is taken. Below is a shrunken view of the main editing page with some example inputs: In the question text input and "Correct Answer Formula" {a} and {b} can be seen. These

and any other {name} can be used as a wildcard that is substituted by some value when the quiz is taken. Also, the correct answer is calculated when the quiz is submitted using the expression in "Correct Answer Formula", which is calculated as a numerical expression after the substitution of the wildcards. The possible wildcard values are set or generated on a later page in "editing wizard" for calculated questions ... The example formula uses the operator+. Other accepted operators are -*/ and % where % is the modulo operator. It is also possible to use some PHP-style mathematical function. Among these there are 24 single-argument function: and two two-argument

functions and the functions min and max that can take two or more arguments. It is also possible to use the function pi that takes no arguments but do not forget the use the parentheses - the correct usage is pi(). Similarly the other function must have their argument(s) within parentheses. Possible usage is for example sin( {a}) + cos( { b}) * 2. It should not be any problem to wrap functions within each other like cos( deg2rad( {a} + 90)) etc. More details on how to use these PHP-style functions can be found in the documentation at the PHP web site .As for numerical questions it is possible to allow a margin within which all responses are accepted as correct. The "Tolerance" field is used for this. However, there are three different types of tolerances. These are Relative, Nominal and Geometric. If we say that the correct answer at quiz time is calculated to 200 and the tolerance is set to 0.5 then the different tolerance types work like this:

**Relative:** A tolerance interval is calculated by multiplying the correct answer with 0.5, ie in this case we get 100 so for this tolerance the correct response must be between 100 and 300. (200 Â± 100) This is useful if the magnitude of the correct answer can differ greatly between different wildcard values.

**Nominal:** This is the simplest tolerance type but not very powerful. The correct response must be between 199.5 and 200.5 (200 Â± 0.5) This tolerance type can be useful if the differences between different correct answers are small.

**Geometric:** The upper limit of the tolerance interval is calculated as 200 + 0.5*200 and is the same as for the relative case. The lower limit is calculated as 200/(l + 0.5). The correct response must then be between 133.33 and 300. This is useful for complex calculation that must have great tolerances where relative tolerances of 1 or more would be used for the upper limit but clearly not acceptable for the lower limit as it would make zero a correct answer for all cases. The field Significant Figures does only relate to how the correct answer should be presented in the review or the reports. Examples: If it is set to 3 then the correct answer 13.333 would be presented as 13.3; 1236 would be presented as 1240; 23 would be presented as 23.0 etc. The feedback field and the optional unit fields work just like they do for numerical questions.

**Question categories** : Rather than keeping all your questions in one big list, you can create categories to keep them in. Categories can be created or deleted at will. But :

• There must be at least one category in each context. So you cannot delete the last category in a context.
• When you try to delete a category containing questions, then you will be asked to specify another category to move them to.

You can arrange your categories in a hierarchy so that they are easier to manage.

- The up and down arrow keys change the order in which categories which are peers of each other are listed.
- You can also move a category to a new context with the up **/** down arrows.
- The left and right arrows are used to change the parent category of a category.
- A possibly quicker way to move categories is to click on the edit icon and then use the category select box to select a new parent category.

See also:
- Category contexts
- Question permissions

Question categories : Rather than keeping all your questions in one big list, you can create categories to keep them in. Each category consists of a name and a short description. Each category can also be "published", which means that the category (and all questions in it) will be available to all courses on this server, so that other courses can use your questions in their quizzes.

Field descriptions :

Parent: The category in which this one will be placed. If no other categories have been created, only 'Top' will be available

Category: The name of the category.

Category info: A brief description of the category.

Publish: Whether or not to immediately publish this category.

Show correct answers

If you enable correct answers, then the feedback will show also show the correct answer for each question (highlighted in a bright colour).

Create multiple questions

This page allows you to create multiple questions at once. Currently it will only allow you to create a number of Random Questions and (optionally) add them to the current quiz. Eventually this page will evolve into a larger wizard that will have more options.

Decimal digits

By using this setting you can select the number of digits that should be shown after the decimal point when displaying student scores or grades. For example choosing 'O' means the displayed grades will be rounded to integers. This setting only effects the display of grades. It does not affect the internal calculations and rounding of the grades. Description

This type of question is not really a question. All it does is print some text without requiring any answers.

It can be used to print a descriptive text to be used by a following group of questions. The General feedback can be used if you have some text that you want to appear on the review page only. The 'Question text' appears both during the attempt and on the review page.

Discrimination Index

This provides a rough indicator of the performance of each item. It is calculated by counting the number of students who scored in top third on this quiz for each question and dividing this figure by the number of students who scored in the bottom third. For example, if 30 students took the quiz, there would be 10 students each in the top third and bottom third. If, on item #1, 9 of the best students got it right, but only 3 of the poorest third got it right, the discrimination index would be $9/3 = 3.0$. The numbers in parentheses are: (top third correct responses/bottom third correct responses). If the index goes below 1.0 it means that more of the weaker students got the item right than the stronger students. Such items should be discarded as worthless. In fact, they reduce the accuracy of the overall score for the quiz. If no weak students got the item correct, the denominator would be 0 which would yield a result of infinity. The program substitutes a '10' for any such items.

Essay questions

In response to a question (that may include an image) the respondent writes an answer in essay format. Three fields may be edited when creating the essay question: the question title, the body of the question, and feedback that can be displayed at a time chosen by the facilitator. The essay question will not be assigned a grade until it has been reviewed by a teacher question, the grader will be able to enter a custom comment in response the respondent's essay and be able to assign a score for the essay. Normally, the student can type their answer using the rich-text editor. However, if there is more than one essay question on a page, the rich-text editor is only used for the first essay question.

**Exporting questions from a Category**

This function allows you to export a complete category (and all its subcategories) of questions to a text file. Please note that in many file formats some information is lost when the questions are exported. This is because many formats do not possess all the features that exist in Moodie questions. You should not expect to export and import questions and for them to be identical. Also some question types may not export at all. You are advised to check exported data before using it in a production environment. The format(s) currently supported are:

**GIFT format** : GIFT is the most comprehensive import/export format available for exporting Moodie quiz questions to a text file. It was designed to be an easy method for teachers writing questions as a text file. It supports MultipleChoice, True-False, Short Answer, Matching and Numerical questions, as well as insertion of a __ for the "missing word" format. Note that Cloze questions are not currently supported. Various question-types can be mixed in a single text file, and the format also supports line comments, question names, feedback and percentage-weight grades. Below are some examples:

**Moodie XML format** :

This Moodie specific format exports quiz questions in a simple XML format. They can then be imported into another quiz category or used in some other process such as an XSLT transformation. The XML format will export images attached to questions (encoded base64).

**IMSQTI2.0**

Exports in the standard IMS QTI (version 2.0) format. Note that this generates a group of files within a single 'zip' file. More information on the IMS QTI site (external site in new window)

**XHTML**

Exports the category as a single page of 'strict' XHTML. Each question is clearly placed in its own <div> tag. If you want to use this page as-is, you will need to at least edit the <form> tag at the start of the <body> section to provide a suitable action (eg, a 'mailto'). Import and Export formats are a pluggable resource. Other optional formats may be available in the Modules and Plugins database.

**Export Category**

The Category: drop-down is used to select the category from which the exported questions will be taken.

Some import formats (GIFT and XML Format) permit the category to be included in the writtenfile, enabling the categories to (optionally) be recreated on import. In order for this data to be included the Write category to file box must be ticked. If this is selected you can also embed the category context by ticking Write context to file. Deselect the context option for compatibility with older versions of Moodie.

**Feedback**

If you enable quiz feedback, then students will receive question feedback on every answer (right or wrong). **Importing**

**"Aiken" format files**

The Aiken format is a very simple way of creating multiple choice questions using a clear human-readable format. Here is an example of the format:

The question must be all on one line. Each answer must start with a single-letter character, followed by a period'.' or a bracket')', then a space. The answer line must immediately follow, starting with "ANSWER:" and then giving the appropriate letter.

**Importing "Course Test Manager" files**

Course Test Manager is an "End of Lifetime" software package from Course Technology. It is no longer being actively developed by Course Technology. It has been replaced by a new test manager called Exam View. However, there has never been a migration path to allow this format to be exported from CTM test banks to any other common test format. This is why this module has been written. In order to import questions from CTM, you must have CTM installed on a Windows machine, and have access to the MS Access data files on that machine. Two data files are required in order to access the data files:

- System.mda - This file is in the top directory of your CTM installation, and is referred to in MS access parlance as the "System Database".
- ctm.mdb - this is the database that contains the test bank questions. There is one of these databases for each course installed in CTM. It is located in a directory one level below your CTM installation directory.

The import process is somewhat different based on whether you're running moodle on Windows or Linux. Regardless of what platform moodle is running on, you must have a Windows system (Windows 2000 or Windows XP) on the same network as your moodle system in order to host the Access database while importing test banks. The process is somewhat easier on a Windows-based moodle system. All you need to do to use the CTM import class is:

1. upload the system.mda system database to moodle using the file manager. It doesn't matter what course you upload the system.mda file to. Moodie will find it regardless.
2. Crete your quiz and go into the "import questions from file" process. Upload your chosen ctm.mdb database as the file to import. If you did this correctly, you will see another screen that allows you to choose the subcategory of questions to import from the database. The reason this step is here is that CTM test banks often contain a large number of categorised questions, based on the chapters of the book or sections of the course.

The process on a Linux-based moodle system includes a third-party software component called the ODBC Socket Server. In order to import CTM databases on Linux, you must first download and install this small network program on the Windows system that hosts your CTM databases. Do not follow the installation steps outlined in the ODBC Socket Server Installation. They're more complicated than they need to be! Instead, follow these steps to install this program on your Windows system:

3. Go to the windows system and unzip the install file you downloaded from this site on the system.
4. Copy the binary ODBCSocketServer.exe to a permanent location, such as your system directory (probably C:\WINNT\ or C:\Windows) or your Program Files directory.
5. Install the ODBC Socket Server as a Service on the system with this command:
   <path    you    copied the    file    to    in    the    step    above>ODBCSocketServer.exe /Service
   You may do this by typing this command from Start-c-Run ... dialog, or from a command prompt.
6. Open the Service Manager by either going to Start-c-Settings-c-Control Panels->Administrative Tools»Services or by right-clicking on My Computer, choosing Manage, then choosing Services and Applications->Services from the right panel. You may also access the Service manager by typing services.msc in the Start-c-Run ... dialog
7. In the Service manager, right-click the ODBC Socket Server item and choose the Start item. It's status should change to "started" when you do this. Note that you may stop and/or disable this service completely after you've completed the import process.
8. Make sure that the system.mda and ctm.mdb access data files are on the machine, and that the MS Access ODBC driver is present. It is installed in a standard Windows installation. You can determine if it installed by opening the "Data Sources" item in "Administrative Tools" and referring to the "Drivers" tab. You're going to have to determine where CTM is installed and locate the system.mda file and the ctm.mdb database or databases you're interested in importing data from. Make note of the full local paths to these files as well as the IP address or hostname of the Windows server. You're going to need this information for the import process.
9. Now you may import the testbank or testbanks into moodle. Crete your quiz and go into the "import questions from file" process. NOW HERE'S WHERE THINGS ARE DIFFERENT FOR LINUX - YOU MUST SPECIFY A DUMMY FILE IN THE UPLOAD FIELD TO GET THE IMPORT PROCESS STARTED. THIS FILE WILL NOT BE PROCESSED, IT'S JUST A PLACEHOLDER FOR THE IMPORT FORM. YOU WILL GET A PLACE TO SPECIFY THE WINDOWS SERVER INFORMATION NEXT. Next, you will get a screen where you can type in the hostname for the Windows ODBC Socket Server machine as well as the paths to the system and testbank databases. Type in the information you wrote down from the previous step here and click "Connect to Server". If everything was set up correctly, you'll get another form to allow you to choose the sub-category of questions to import from the database. The reason this step is here is that CTM test banks often contain a large number of categorised questions, based on the chapters of the book or sections of the course. IF YOU GET TO THIS STEP WITHOUT ERROR MESSAGES, YOU HA VE SET UP THE SOCKET SERVER CORRECTLY AND YOU'RE ABOUT TO IMPORT QUESTIONS TO MOODLE!

If you received error messages during this process, you may find this technical information useful. The ODBC Socket server uses port 9628 to open a socket and trade and XML query for an XML result table of the query results. The import class parses that XML and use it just like I use a local query to do the importing.

**Importing "GIFT" format files**

GIFT is the most comprehensive import format available for importing Moodie quiz questions from a text file. It supports Multiple-Choice, True-False, Short Answer, Matching and Numerical questions, as well as insertion of a __ for the Missing Word format. Various question-types can be mixed in a single text file, and the format also supports line comments, question names, feedback and percentage-weight grades.

The text encoding of your text file must be utf-8 (unless you only use ascii characters). An example questions text file can be found here: gift/examples.txt.

Basics : Each individual question in the GIFT file must not contain any blank lines. Each question is delimited by at least one blank line. If you need to represent a blank line in your question you can use the entity \n. You can use comments wherever you wish but they must start with two forward slashes (//) at the start of the line.

QUESTION TYPES - <u>Multiple Choice:</u> For multiple choice questions, wrong answers are prefixed with a tilde (-)and the correct answer is prefixed with an equal sign (=).The Missing Word format automatically inserts a fill-in-the-blank line (like this __ ) in the middle of the sentence. To use the Missing Word format, place the answers where you want the line to appear in the sentence If the answers come before the closing punctuation mark, a fill-in-the-blank line will be inserted for the "missing word" format. All question types can be written in the Missing Word format. There must be a blank line (double carriage return) separating questions. For clarity, the answers can be written on separate lines and even indented. For example:

Short Answer: Answers in Short Answer question-type are all prefixed by an equal sign(=), indicating that they are all correct answers. The answers must not contain a tilde.

Short Answer: Answers in Short Answer question-type are all prefixed by an equal sign(=), indicating that they are all correct answers. The answers must not contain a tilde.

Matching: Matching pairs begin with an equal sign(=) and are separated by this symbol"->". There must be at least three matching pairs. Matching questions do not support feedback or percentage answer weights.

Numerical: The answer section for Numerical questions must start with a number sign (#). Numerical answers can include an error margin, which is written following the correct answer, separated by a colon. So for example, if the correct answer is anything between 1.5 and 2.5, then it would be written as follows { #2:0.5}. This indicates that 2 with an error margin of 0.5 is correct (i.e., the span from 1.5 to 2.5). If no error margin is specified, it will be assumed to be zero. Optionally, numerical answers can be written as a span in the following format

Moodle's browser interface does not support multiple numerical answers, but Moodle's code can and so does GIFT. This can be used to specify numerical multiple spans, and can be particularly usefully when combined with percentage weight grades. If multiple answers are used, they must be separated by an equal sign, like short answer questions.

Note that since Moodle's browser GUI doesn't support multiple answers for Numerical questions, there's no way to see them or edit them through Moodie. The only way to change a numerical answer beyond the first, is to delete the question and re-import it (or use something like phpMyAdmin).

Essay: An essay question is simply a question with an empty answer field. Nothing is permitted between the curly braces at all.

Description: A description "question" has no answer part at all

OPTIONS : In addition to these basic question types, this filter offers the following options: line comments, question name, feedback and percentage answer weight.

Line Comments: Comments that will not be imported into Moodie can be included in the text file. This can be used to provide headers or more information about questions. All lines that start with a double backslash (not counting tabs or spaces) will be ignored by the filter.

Question Name: A question name can be specified by placing it first and enclosing it within double colons. If no question name is specified, the entire question will be used as the name by default.

Feedback: Feedback can be included for each answer by following the answer with a number sign (# also known as a hash mark) and the feedback. For Multiple Choice questions, feedback is displayed only for the answer the student selected. For short answer, feedback is shown only when students input the corresponding correct answer. For true-false questions, there can be one or two feedback strings. The first is shown if the student gives the wrong answer. The second if the student gives the right answer.

Percentage Answer Weights: Percentage answer weights are available for both Multiple Choice and Short Answer questions. Percentage answer weights can be included by following the tilde (for Multiple Choice) or equal sign (for Short Answer) with the desired percent enclosed within percent signs (e.g., %50%). This option can be combined with feedback comments. Note that the last two examples are essentially the same question, first as multiple choice and then as short answer. Note that it is possible to specify percentage answer weights that are NOT available through the browser interface. The Match Grades drop-down on the import page determines how these are handled. You can either request that an error be reported or that the answer weight be adjusted to the nearest valid answer weight.

**Specify text-formatting for the question**

The question text (only) may have an optional text format specified. Currently the available formats are moodle (Moodie Auto-Format), html (HTML format), plain (Plain text format) and markdown (Markdown format). The format is specified in square brackets immediately before the question text. More information on text formats in Moodie.

**Multiple Answers:**

The Multiple Answers option is used for multiple choice questions when two or more answers must be selected in order to obtain full credit. The multiple answers option is enabled by assigning partial answer weight to multiple answers, while allowing no single answer to receive full credit. Note that there is no equal sign(=) in any

answer and the answers should total no more than 100%, otherwise Moodie will return an error. To avoid the problem of students automatically getting 100% by simply checking all of the answers, it is best to include negative answer weights for wrong answers.

**Special Characters** - = # { } :

These symbols - = # { } : control the operation of this filter and cannot be used as normal text within questions. Since these symbols have a special role in determining the operation of this filter, they are called "control characters." But sometimes you may want to use one of these characters, for example to show a mathematical formula in a question. The way to get around this problem is "escaping" the control characters. This means simply putting a backslash (\) before a control character so the filter will know that you want to use it as a literal character instead of as a control character. For example:

When the question is processed, the backslash is removed and is not saved in Moodie.

**Specifying Categories**

It is possible to change the category into which the questions are added within the GIFT file. You can change the category as many times as you wish within the file. All questions after the modifier up to the next modifier or the end of the file will be added to the specified category. Up to the first category modifier the category specified on the import screen will be used. Note that for this to work the from file: box must be ticked on the import screen. To include a category modifier include a line like this (with a blank line before and after): or simply

... the first example specifies a path of nested categories. In this cae the questions will go into harry. The categories are created if they do not exist.

**Other Options:**

Short Answer questions can be made case sensitive by changing "O" to "1" in the following line:

**Importing "WebCT Quiz Format" files**

The W ebCT import filter is in development and does not support all of the W ebCT question types. At the time of writing this, only Multiple Choice and Short answer questions are supported. Here are some examples of these questions in a text file:

**Importing "Moodie XML" format files**

**Category Switching** : You can insert a special dummy question into the XML file to specify the category path into which the following questions will be inserted. If the category or categories do not exist they will be created. Note that the from file: option must be ticked on the option page or this code will be ignored completely. You can switch categories in the xml file as often as you wish. An example of the format is as follows:

**Question general feedback**

Question general feedback is some text that gets shown to the student after they have attempted the question. Unlike feedback, which depends on the question type and what response the student gave, the same general feedback text is shown to all students. You can control when general feedback is shown to students using the "Students may review:" check-boxes on the quiz editing form. You can use the general feedback to give students some background to what knownledge the question was testing. Or to give them a link to more information they can use if they did not understand the questions.

**Grading method**

When multiple attempts are allowed, there are different ways you can use the grades to calculate the student's final grade for the quiz.

- **Highest grade** : The final grade is the highest (best) grade in any attempt.
- **Average grade:** The final grade is the average (simple mean) grade of all attempts.
- **First grade** : The final grade is the grade gained on the first attempt (other attempts are ignored).
- **Last grade:** The final grade is the grade gained on the most recent attempt only.

**Importing new questions**

This function allows you to import questions from external text files, uploaded through a form, or by choosing a suitable file already in the course Files area.

**A note about character encodings** : If your file contains non-ascii characters then it must use UTF-8 encoding. You may be able to select or convert to UTF-8 using your favourite editor, or it may be an option in the exporting software. Be particularly cautious with files generated by Microsoft Office applications, as these commonly use special encoding which will not be handled correctly. XML based import formats will be handled automatically provided your Moodie server is running PHP 5.

A number of file formats are supported:

**GIFT format:** GIFT is the most comprehensive import format available for importing Moodie quiz questions from a text file. It was designed to be an easy method for teachers writing questions as a text file. It supports MultipleChoice, True-False, Short Answer, Matching and Numerical questions, as well as insertion of a __ for the "missing word" format. Various question-types can be mixed in a single text file, and the format also supports line comments, question names, feedback and percentage-weight grades. Below are some examples:

**More info about the "GIFT" format**

**Aiken Format** : This is a simple format for importing multiple choice questions from a text file.

**Moodie XML format** : This Moodie specific format imports quiz questions that have previously been exported in the same format. The format is straightforward and is best demonstrated by exporting a category in the Moodie XML format. The XML format is capable of importing image files.

**Missing Word:** This format only supports multiple choice questions and short answer question, depending on the number of answers. One answer generates a short answer question, two or more answers generate a multiple choice question. Each answer is separated with a tilde (·), and the correct answer is prefixed with an equals sign(=). Here is an example of a multiple choice question: As soon as we begin to explore our body parts as infants we become students of {=anatomy and physiology -reflexology -science -experiment}, and in a sense we remain students for life. Here is an example of a short answer question: As soon as we begin to explore our body parts as infants we become students of {=anatomy and physiology}, and in a sense we remain students for life.

**Blackboard** : This module can import questions saved in Blackboard's "POOL" type export format. It relies on XML functions being compiled into your PHP. Note that you must first unpack the exported zip file and provide Moodie with the appropriate .dat file. Note that this version **does not** work with Blackboard Version 6 and newer. **Blackboard V6+** : This module can import questions saved in Blackboard's export format. It provides limited support for Blackboard Version 6 and 7. It relies on XML functions being compiled into your PHP. You must upload the zip file exported from Blackboard.

**WebCT** : This module can import questions saved in WebCT's text-based format.

**Course Test Manager** : This module can import questions saved in a Course Test Manager test bank. It relies on different ways of accessing the test bank, which is in a Microsoft Access database, depending on whether Moodie is running on a Windows or Linux web server. On Windows it lets you upload the access database just like any other data import file. On Linux, you must set up a windows machine on the same network with the Course Test Manager database and a piece of software called the ODBC Socket Server, which uses XML to transfer data to moodle on the Linux server. Please read the full help file below before using this import class.

**Embedded answers (Cloze)** : This special purpose format imports just one type of question, the Embedded Answers (also known as Cloze) format.

**Learnwise format** : This format can import multiple choice questions saved in Learnwise's XML format.

**Examview format** : This format can import from Examview 4 XML files. Note that the older versions of Examview are not supported. Import and Export formats are a pluggable resource. Other optional formats may be available in the Modules and Plugins database.

**Import Category** : The Category: drop-down is used to select the category into which the imported questions will go. Some import formats (GIFT and XML Format) permit the category to be specified inside the import file. In order for this to happen the Get category from file box must be ticked. If it is not, the questions will go into the selected

category regardless of any instructions in the file. Formats exported from Moodie may also contain the category context embedded in the category string. Deselect Get context from file to force the default context to be used. When categories are specified inside an import file, if they do not exist they will be created.

**Quizzes**

| | |
|---|---|
| Shuffle answers (Multiple choice) | • Adaptive mode |
| Numerical questions | • Analysis Download |
| Opening and closing the quiz | • Analysis Options |
| Overall Feedback | • Allow review once quiz is closed |
| Penalty factor | • Attempts |
| Apply penalty | • Calculated questions |
| Display in a "secure" window | • Categories |
| Question feedback | • Question Categories |
| Question data sets | • Correct answers |
| Questions per page | • Creating multiple quizzes |
| Question text | • Decimal digits |
| Question types- creating a new question | • Descriptions |
| Random questions | • Essay questions |
| Random Short-Answer Matching questions | • Each attempt builds on the last |
| The question reordering tool | • Embedded Answers (Cloze) |
| Each attempt builds on the last | • Question general feedback |
| Require a password | • Grading method |
| Require network addresses | • Importing questions |
| Responses Download | • Importing Aiken format files |
| Responses Options | • Importing Blackboard quiz files |
| Allow review | • Importing "Course Test Manager" fi |
| Short Answer questions | • Importing GIFT format files |
| Shuffle answers | • Importing "Missing Word" files |
| Shuffle questions | • Importing W ebCT quiz files |
| Shuffle within questions | • Item Analysis |
| Time Delay between first and second attempt | • Matching questions |
| Time Delay between additional quiz attempts | • Match Grades |
| Time limit | • Shuffle |
| Opening and closing the quiz | • Maximum grade |
| True/False questions | • Multiple choice questions |

**Item Analysis**

This table presents processed quiz data in a way suitable for anayzing and judging the performance of each question for the function of assessment. The statistical parameters used are calculated as explained by classical test theory (ref. 1)

**Facility Index (% Correct)** : This is a measure of how easy or difficult is a question for quiz-takers. It is calculated as:

$$FI = (X_{average}) / X_{max}$$

where $X_{average}$ is the mean credit obtained by all users attempting the item, and $X_{max}$ is the maximum credit achievable for that item. If questions can be distributed dicotornically into correct / uncorrect categories, this parameter coincides with the percentage of users that answer the question correctly.

**Standard Deviation (SD)** : This parameter measures the spread of answers in the response population. If all users answers the same, then SD=O. SD is calculated as the statistical standard deviation for the sample of fractional scores (achieved/maximum) at each particular question.

**Discrimination Index (DI)** : This provides a rough indicator of the performance of each item to separate proficient vs. less-proficient users. This parameter is calculated by first dividing learners into thirds based on the overall score in the quiz. Then the average score at the analyzed item is calculated for the groups of top and bottom performers, and the average scored substracted. The matematical expression is: $DI = (X_{top} - X_{bottom}) / N$

where $X_{top}$ is the sum of the fractional credit (achieved/maximum) obtained at this item by the 1/3 of users having tha highest grades in the whole quiz (i.e. number of correct responses in this group), and $X_{bottom}$) is the analog sum for users with the lower 1/3 grades for the whole quiz. This parameter can take values

between + 1 and -1. If the index goes below 0.0 it means that more of the weaker learners got the item right than the stronger learners. Such items should be discarded as worthless. In fact, they reduce the accuracy of the overall score for the quiz.
Discrimination Coefficient (DC) : This is another measure of the separating power of the item to distinguish proficient from weak learners. The discrimination coefficient is a correlation coefficient between scores at the item and at the whole quiz. Here it is calculated as:

$$DC = Sum(xy) / (N * sx * sy)$$

where Sum(xy) is the sum of the products of deviations for item scores and overall quiz scores, N is the number of responses given to this question sx is the standard deviation of fractional scores for this question and, sy is the standard deviation of scores at the quiz as a whole. Again, this parameter can take values between + 1 and -1. Positive values indicate items that do discriminate proficient learners, whereas negative indices mark items that are answered best by those with lowest grades. Items with negative DC are answered incorrectly by the seasoned learners and thus they are actually a penalty against the most proficient learners. Those items should be avoided. Note that, if all learners get exactly the same score for this question, then sx is zero, and DC will be undefined. This is indicated as DC= -999.00. The advantage of Discrimination Coefficient vs. Discrimitation Index is that the former uses information from the whole population of learners, not just the extreme upper and lower thirds. Thus, this parameter may be more sensitive to detect item performance.

Matching questions
After an optional introduction, the respondent is presented with several sub-questions and several jumbled answers. There is one correct answer for each question. The respondent must select an answer to match each sub-question. Each sub-question is equally weighted to contribute towards the grade for the total question.
Match Grades : Imported grades must match one of the fixed list of valid grades, as follows ... negative values of the above list are also permitted. There are two settings for this switch. They affect how the import routine treats values that do not exactly match one of the values in the above list

- Error if grade not listed : If a question contains any grades not found in the list an error is displayed and that question will not be imported.
- Nearest grade if not listed : If a grade is found that does not match a value in the list, the grade is changed to the closest matching value in the list

Note: some custom import formats write directly to the database and may bypass this check

Shuffle
If you set this option to "Yes", then the order of the subquestions is randomly shuffled each time a student starts an attempt at a quiz containing this question - provided that "Shuffle within questions" in the Quiz settings is set to "Yes". The intention is simply to make it a little harder for students to copy from each other.
Maximum grade
The maximum grade you set for a quiz is what all grades are scaled to. For example, you might set the max grade to 20, because the quiz is worth 20% of the whole course. Even though you might have 10 questions in your quiz worth a total of 50 marks, all grades out of 50 will be "scaled down" to the quiz max grade of 20.
Quizzes : This module allows the teacher to design and set quiz tests, consisting of multiple choice, true-false, and short answer questions. These questions are kept in a categorised database, and can be re-used within courses and even between courses. Quizzes can allow multiple attempts. Each attempt is automatically marked, and the teacher can choose whether to give feedback or to show correct answers. This module includes grading facilities.
Embedded answers (Cloze) : This very flexible question type is similar to a popular format known as the Cloze format. Questions consist of a passage of text (in Moodle format) that has various sub-questions embedded within it, including There is currently no graphical interface to create these questions - you need to specify the
question format using the text box or by importing them from external files. Here is an example of the input text used to specify such a question:
Multiple Choice questions : In response to a question (that may include a image) the respondent chooses from multiple answers. There are two types of multiple choice questions - single answer and multiple answer. Singleanswer questions allow one and only one answer to be chosen. Generally all the grades for such a question should be

positive. Multiple-answer questions allow one or more answers to be chosen - each answer may carry a positive or negative grade, so that choosing ALL the options will not necessarily result in good grade. If the total grade is negative then the total grade for this question will be zero. Careful, it is possible to create questions that have scores greater than 100%. Finally, each answer (right or wrong) should include feedback - this feedback will be shown to the respondent next to each of their answers (if the quiz itself is configured to show feedback).

**Shuffle answers** : If you set this option to "Yes", then the order of the answers is randomly shuffled each time a student starts an attempt at a quiz containing this question - provided that "Shuffle within questions" in the Quiz settings is set to "Yes". The intention is simply to make it a little harder for students to copy from each other. **Numerical questions** : From the student perspective, a numerical question looks just like a short-answer question. The difference is that numerical answers are allowed to have an accepted error. This allows a continuous range of answers to be set. For example, if the answer is 30 with an accepted error of 5, then any number between 25 and 35 will be accepted as correct. Like with short answer questions, different answers, or the same answer with different precisions can be given. In this case, the first matching answer is used to determine the score and the feedback. To provide feedback for responses that do not match any of the answers you entered, provide some feedback with a '*' in the answer box.

**Overall feedback** : The overall feedback is some text that is shown to a student after they have completed an attempt at the quiz. The text that is shown can depend on the grade the student got.

- For example, if you enter:
- Grade boundary: 100%
- Feedback: Well done
- Grade boundary: 40%
- Feedback: Please study this week's work again

-
• Grade boundary: 0%

Then students who score between 100% and 40% will see the "Well done" message, and students who score between 39.99% and 0% will see the other message. That is, the grade boundaries define ranges of grades, and each feedback string is displayed to scores within the appropriate range. The grade boundaries can be specified either as a percentage, for example "31.41 %", or as a number, for example "7". If your quiz is out of 10 marks, a grade boundary of 7 means 7 /10 or better.

**Overview Download** : You may want to download the data displayed in the on-screen table for further analysis. You can choose between two file formats for downloaded data. In each case data will be presented as a table with appropriate titles, as on the screen. If the table is paged, all data for all pages will be downloaded in a single file. **Excel Spread: sheet format:** You will get an .xls spreadsheet document.

**Text format** : In this case, data will be stored as a regular text file. A line for each row in the table with data separated by tabstops.

**Penalty factor** : You can specify what fraction of the achieved score should be subtracted for each wrong response. This is only relevant if the quiz is run in adaptive mode so that the student is allowed to make repeated responses to the question. The penalty factor should be a number between 0 and 1. A penalty factor of 1 means that the student has to get the answer right in his first response to get any credit for it at all. A penalty factor of 0 means the student can try as often as he likes and still get the full marks.

**Apply penalty** : If a quiz is run in adaptive mode then a student is allowed to try again after a wrong response. In this case you may want to impose a penalty for each wrong response to be subtracted from the final mark for the question. The amount of penalty is chosen individually for each question when setting up or editing the question. This setting has no effect unless the quiz is run in adaptive mode.

**Display in a "secure" window** : The "secure" window tries to provide a little more security for quizzes (making copying and cheating more difficult) by restricting some of the things that students can do with their browsers. What happens is that:

- Javascript is made a requirement.
- The quiz appears in a new fullscreen window.
- Some mouse actions on the text are prevented.
- Some keyboard commands are prevented.

NOTE: This security is NOT watertight. Do NOT rely on these protections as your sole strategy. It is impossible to implement complete protection of quizzes in a web environment so please do not rely on this option if you are really worried about students cheating. Other strategies you can try are to create really large databases of questions from which you randomly choose questions, or even better, rethink your overall assessment to put more value on

constructive forms of activity such as forum discussions, glossary building, wiki writing, workshops, assignments etc.

Question datasets : A dataset is a collection of data used to create a question (such as a calculated question), where it is inserted in place of a variable within the question. You can create a "private" dataset for a specific question, or a "reusable" dataset that can be used within all questions within a category.

When creating a question that uses datasets, you'll be prompted with two screens. The first screen allows you to assign a particular dataset to be substituted for each variable. The second screen allows you to add and remove sets of numbers in the dataset. The numbers used for individual questions presented to students will be selected from this set.

Questions per page : For longer quizzes it makes sense to stretch the quiz over several pages by limiting the number of questions per page. When adding questions to the quiz page breaks will automatically be inserted according to the setting you choose here. However you will also be able to move page breaks around by hand later on the editing page.

Question text : Different question types all display differently, but they all start with some text which is entered here. Depending on the question type, there may be more settings to control the rest of the question display lower down this form.

Creating a new question: You can add a variety of different types of questions to a category:

Multiple Choice : In response to a question (that may include a image) the respondent chooses from multiple answers. There are two types of multiple choice questions - single answer and multiple answer.

Short Answer : In response to a question (that may include a image), the respondent types a word or phrase. There may several possible correct answers, with different grades. Answers may or may not be sensitive to case.

- Numerical : From the student perspective, a numerical question looks just like a short-answer question. The difference is that numerical answers are allowed to have an accepted error. This allows a continuous range of answers to be set

- True/False : In response to a question (that may include a image), the respondent selects from two options: True or False.

- Matching : A list of sub questions is provided, along with a list of answers. The respondent must "match" the correct answers with each question.

- Embedded Answers (Cloze) : These very flexible questions consist of a passage of text (in Moodie format) that has various answers embedded within it, including multiple choice, short answers and numerical answers.

- Random Short-Answer Matching : From the student perspective, this looks just like a Matching question. The difference is that the subquestions are drawn randomly from Short Answer questions in the current category.

- Random : A Random question in a quiz is replaced by a randomly-chosen question from the category that was set

- Description : This is not a real question. It simply prints some text (and possibly graphics) without requiring an answer. This can be used to provide some information to be used by a following group of questions, for example.

- Calculated : Calculated questions offer a way to create individual numerical questions by the use of wildcards that are substituted with individual values when the quiz is taken.

- Essay : In response to a question (that may include an image) the respondent writes an answer in essay format

Random Question : Random Questions may be added to any category. When you add a Random Question to a quiz, then it will be replaced with a randomly-chosen question from the same category - for each attempt. This means that different students are likely to get a different selection of questions when they attempt this quiz. When a quiz allows multiple attempts for each student then each attempt is likely to contain a new selection of questions. The same question will never appear twice in an attempt. If you include several Random Questions then different questions will always be chosen for each of them. If you mix Random Questions with non-random questions then the random questions will be chosen so that they do not duplicate one of the non-random questions. This does imply that you need to provide enough questions in the category from which the random questions are chosen, otherwise the student will be shown a friendly error message. The more questions you provide the more likely it

will be that students get different questions on each attempt. The grade for the randomly chosen question will be rescaled so that the maximum grade is what you have chosen as the grade for the Random Question.

Random Short-Answer Matching questions : After an optional introduction, the respondent is presented with several sub-questions and several jumbled answers. There is one correct answer for each question. The respondent must select an answer to match each sub-question. Each sub-question is equally weighted to contribute towards the grade for the total question. The questions and answers are randomly drawn from the pool of "Short Answer" questions in the current category. Each attempt on a quiz may therefore have different questions and answers. You must make sure that the category contains enough unused short-answer questions, otherwise the student will be shown a friendly error message. The more short-answer questions you provide the more likely it is that students will see a new selection on each attempt.

The question reordering tool : The reordering tool displays line number fields at the front of the question list. These line numbers increase in steps of 10 to leave room for you to insert questions in between. You can then reorder the questions by changing the line numbers and clicking "Save changes". The questions will be reordered according to the line numbers you specified. Line numbers do not have to be integers, you can also use numbers with a decimal point if you find that convenient. Page breaks are given line numbers as well, to allow you to move them around in the same manner. If you have unticked the "Show page breaks" box then you will not see the page breaks and the corresponding line numbers are not displayed, explaining the gaps in the line number sequence that you may observe.

Each attempt builds on the last : If multiple attempts are allowed and this setting is set to Yes, then each new attempt contains the results of the previous attempt. This allows a quiz to be completed over several attempts. To show a fresh quiz on every attempt, select No for this setting.

Require a password : This field is optional . If you specify a password in here then participants must enter the same password before they are allowed to make an attempt on the quiz.

Require network addresses : This field is optional.

You can restrict access for a quiz to particular subnets on the LAN or Internet by specifying a comma-separated list of partial or full IP address numbers. This is especially useful for a proctored quiz, where you want to be sure that only people in a certain room are able to access the quiz. For example: 192.168. , 231.54.211.0/20, 231.3.56.211, 231.3.56.10-20

There are four types of numbers you can use (you can not use text based domain names like example.com):

1. Full IP addresses, such as 192.168.10.1 which will match a single computer (or proxy).
2. Partial addresses, such as 192.168 which will match anything starting with those numbers.
3. CIDR notation, such as 231.54.211.0/20 which allows you to specify more detailed subnets.
4. A range of IP addresses 231.3.56.10-20 The range applies to the last part of the address, so this means all the IP addresses from 231.3.56.10 to 231.3.56.20.

Spaces are ignored.

Responses Download

You may want to download the data displayed in the on-screen table. You can choose between two file formats for downloaded data. In each case data will be presented as a table with appropriate titles, as on the screen but without the user pictures. If the table is paged or ordered on screen, all data for all pages will always be downloaded in a single file. Users with no attempt for this quiz will be included in the file if you check the corresponding option. Excel Spreadsheet format: You will get an .xls spreadsheet document.

Text format : In this case, data will be stored as a regular text file. A line for each row in the table with data separated by tabstops.

Responses Options

Page size: You choose how many attempts per page you want to see displayed on screen.

Show students with no attempts: It may be convenient to not only show students with attempts for this quiz but also students that not yet attempted it.

Allow review : This option controls whether and when students will be able to review their past attempts at this quiz. Allow review once quiz is closed : If you enable this option, then students will be able to review their past attempts at this quiz. This is only enabled once the quiz is closed.

Allow review : These options control what information users can see when they review a quiz attempt or look at the quiz reports. Immediately after the attempt means within two minutes of the attempt being finished by the user

clicking 'Submit all and finish'. Later, while the quiz is still open means after this, and before the quiz close date. After the quiz is closed means after the quiz close date has passed. If the quiz does not have a close date, this state is never reached. Users with the capability 'View hidden grades' [moodle/grade:viewhidden] (typically teachers and administrators) are not affected by these settings and will always by able to review all information about a student's attempt at any time.

**Remote Questions (RQP)** : The Remote Question Protocol may be used to include questions in a quiz with all processing occurring on a remote server. Questions may be included in any format for which a server is available without any change to Moodle.

**Short Answer questions** : In response to a question (that may include a image) the respondent types a word or short phrase. There may be several possible correct answers, each with a different grade. If the "Case sensitive" option is selected, then you can have different scores for "Word" or "word". You can use the asterisk character (*) as a wildcard to match any series of characters. For example, use ran*ing to match any word or phrase starting with "ran" and ending with "ing". If you really do want to match an asterisk then use a backslash like this: \* Without wildcards the answers are compared exactly, so be careful with your spelling!

**Shuffle the choices** : If you enable this option, then the order of choices within each question will be randomly shuffled each time a student attempts this quiz. Of course, this only applies to questions that have multiple options displayed, such as multiple choice or matching questions. The intention is simply to make it a little harder for students to copy from each other. This option is not related to the use of Random Questions.

**Shuffle questions** : If you enable this option, then the order of questions in the quiz will be randomly shuffled each time a student attempts the quiz. This is not related to the use of Random Questions, this is only about the displayed order of questions. The intention is to make it a little harder for students to copy from each other.

**Shuffle within questions** : If you enable this option, then the parts making up the individual questions will be randomly shuffled each time a student starts an attempt at this quiz, provided the option is also enabled in the question settings. The intention is simply to make it a little harder for students to copy from each other. This only applies to questions that have multiple parts, such as Multiple Choice or Matching Questions. For multiple choice questions the order of the answers is shuffled only when this option is set to "Yes". For matching type questions the answers are always shuffled, this setting controls whether in addition the order of the question-answer pairs is shuffled. This option is not related to the use of Random Questions.

**Stop on error** : Questions are imported in two passes. First the imput file is 'parsed' and checked for validity. Then it is written to the database. If this option is selected (default) and an error is detected in the parsing pass then no attempt will be made to write to the database. If it is not checked, an attempt will be made to write any valid questions to the database.

**Time Delay between first and second attempt** : If you set a time delay, then a student has to wait for that time before they can attempt a quiz after the first attempt.

**Time Delay between additional quiz attempts** : If you set a time delay here, then a student has to wait for that time before they can attempt their third or later attempts.

**Time limit** : By default, quizzes do not have a time limit, which allows students as much time as they need to complete the quiz. If you do specify a time limit, then several things are done to try and ensure that quizzes are completed within that time:

- Javascript support in the browser becomes mandatory - this allows the timer to work correctly
- A floating timer window is shown with a countdown
- When the timer has run out, the quiz is submitted automatically with whatever answers have been filled in so far
- If a student manages to cheat and spends more than 60 seconds over the allotted time then the quiz is automatically graded zero

**Opening and closing the quiz** : You can specify times when the quiz is accessible for people to make attempts. Before the opening time, and after the closing time, the quiz will be unavailable.

**True/False questions:** In response to a question (that may include a image) the respondent chooses from True or False. If feedback is enabled, then the appropriate feedback message is shown to the respondent after answering the quiz. For example, if the correct answer is "False", but they answer "True" (getting it wrong) then the "True" feedback is shown.