The question bank:
How we got here. What we should never do again!

Tim Hunt

What we are talking about

Moodle QA Testing Site

THEME ▾   English (en) ▾

🔍   🔔   💬   **Terri Teacher**

Activity examples

⚙ ▾

General

Welcome to the Activity examples course!

Note: This is NOT how you should lay out a real course; we are organising by activity type here just to help you find examples of different features.

📚 News forum

Assignments

Assignments enable teachers to grade and give comments on uploaded files and assignments created on and off line.
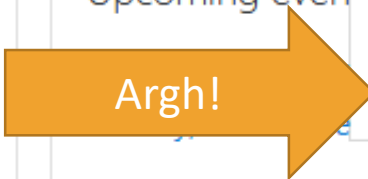
📄 Online text assignment ☑

📄 Assignment with file submissions ☑

Latest announce

Add a new topic...

(No announcement

Upcoming even

💬 A repeating chat
Monday, 19 October, 1:00 PM

📄 Offline assignment is due
Thursday, 22 October, 2:00 PM

📊 Lesson

⚙ **Edit settings**

⚙ **Course completion**

▼ **Filters**

⚙ **Gradebook setup**

📄 **Backup**

⬆ **Restore**

⬆ **Import**

← **Reset**

🗑 **Recycle bin**

Argh! ➡

⚙ **More...**

☰

Activity examples

👥 Participants

🛡 Badges

☑ Competencies

⊞ Grades

📁 General

📁 Assignments

📁 Chats

📁 Choices

📁 Databases

📁 Feedback

📁 Forums

📁 Glossaries

Questions | Categories | Import | Export

Question bank

Select a category: [Default for New Features (5) ⬍]

No tag filters applied

[Filter by tags... ▼]

☐ Show question text in the question list

Search options ▾

☑ Also show questions from subcategories

☐ Also show old questions

Create a new question ...

⚙	Edit question
📋	Duplicate
🏷	Manage tags
🔍	Preview
🗑	Delete
⬇	Export as Moodle XML

T ▲ Question

☐ Question name / ID number

Last modified by

First name / Surname / Date

☐ ⠿ Moodle activities **101** **matching** Edit ▾ — Admin User 5 November 2008, 7:54 PM — Terri Teacher 18 October 2019, 5:39 PM

☐ ▦ Embedded answer... **102** **Cloze** ... Edit ▾ Admin User 7 March 2014, 10:27 PM Terri Teacher 18 October 2019, 5:38 PM

☐ ☰ Gree... **103** **multiple choice** **media** ... Edit ▾ Admin User 27 August 2008, 7:57 PM Terri Teacher 18 October 2019, 5:38 PM

☐ ▭ Moodle user **104** **short answer** **easy** Edit ▾ Admin User 5 November 2008, 9:34 PM Terri Teacher 18 October 2019, 5:38 PM

☐ •• Moodle acronym **105** **true/false** Edit ▾ Admin User 5 November 2008, 7:58 PM Terri Teacher 18 October 2019, 5:38 PM

With selected:

This site will be reset in 52 mins 52 secs

Activity examples

Editing a Matching question

General

Current category Default for New Features (5) ☑ Use this category

Save in category   Default for New Features (5) ▾

Question name   Moodle activities

Question text   Match the activity to the description.

Default mark   1

General feedback

ID number   101

☑ Shuffle

Answers

Available choices   You must provide at least two questions and three answers. You can provide extra wrong answers by giving an answer with a blank question. Entries where both the question and the answer are blank will be ignored.

Question 1   An activity supporting asynchronous discussions.

Answer   Forum

Question 2   A teacher asks a question and specifies a choice of multiple responses.

Answer   Choice

Question 3   A bank of record entries which participants can add to.

Answer   Database

Question 4   A collection of web pages that anyone can add to or edit.

Answer   Wiki

Question 5

Answer   Chat

Blanks for 3 more questions

Combined feedback

Multiple tries

Tags

Created / last saved

Save changes and continue editing   🔍 Preview

Save changes   Cancel

There are required fields in this form marked ❗.

Edit

Question **1**

Not yet answered

Marked out of 1.00

Match the activity to the description.

A bank of record entries which participants can add to.   Choose... ⇕

A collection of web pages that anyone can add to or edit.   Choose... ⇕

An activity supporting asynchronous discussions.   Choose... ⇕

A teacher asks a question and specifies a choice of multiple responses.   Choose... ⇕

Start again   Save   Fill in correct responses   Submit and finish   Close preview

Technical information ❓ ▸

Download this question in Moodle XML format

▾ Collapse all

▾ **Attempt options**

How questions behave ❓   Deferred feedback ⇕

Marked out of   1

Start again with these options

Preview

▾ **Display options**

Questions | **Categories** | Import | Export

Edit categories❓

Question categories for 'Course: Activity examples'

- **3.0 New question types (5)** 🗑 ⚙ ⬇
- **Default for HMQ (0)** 🗑 ⚙ ⬆ ⬇ ➡
  - ○ **pre-written examples (4)** 🗑 ⚙ ⬅
- **Default for New Features (5)**
  The default category for questions shared in context 'New Features'.
  🗑 ⚙ ⬆ ⬇ ➡
- **Default for P&C Council (10)**
  The default category for questions shared in context 'P&C Council'.
  🗑 ⚙ ⬆ ⬇ ➡
- **Default for QE (10)**
  The default category for questions shared in context 'QE'.
  🗑 ⚙ ⬆ ⬇ ➡
- **Default for Questions (8)**
  The default category for questions shared in context 'Questions'.
  🗑 ⚙ ⬆ ➡

▾ **Add category**

Parent category   ❓   Default for New Features (5) ⬍

Questions   Categories   Import   **Export**

Export questions to file ❓

▾ Collapse all

▾ **File format**

❗   ⚪ Aiken format   ❓
⚪ GIFT format   ❓
⚪ Moodle XML format   ❓
⚪ XHTML format   ❓

▾ **General**

Export category   ❓ | Default for New Features (5)   ⬍ |

☑ Write category to file ☑ Write context to file

Export questions to file

There are required fields in this form marked ❗ .

This site will be reset in 41 mins 56 secs

Questions   Categories   **Import**   Export

Import questions from file ❓

▶ Expand all

▼ **File format**

❗ ○ Aiken format ❓
○ Blackboard ❓
○ Embedded answers (Cloze) ❓
○ Examview ❓
○ GIFT format ❓
○ Missing word format ❓
○ Moodle XML format ❓
○ WebCT format ❓

▶ **General**

▼ **Import questions from file**

Import   ❗

| Choose a file... | Maximum size for new files: 256MB |

⬇

This site will be reset in 47 mins 42 secs

Activity ex

Editing quiz:

Questions: 5 | This quiz is

10.00   Save

Repaginate   Select   Total of marks: 38.00

Add from the question bank to page 1   ✕

Select a category: Default for New Features (5)   ⇕

The default category for questions shared in context 'New Features'.

No tag filters applied

Filter by tags...   ▼

Search options ▾
☑ Also show questions from subcategories

☐ Also show old questions

☐ T▲ Question   ☐ Shuffle ❓

➕ ☐ ⠿ **Moodle activities** `101` `matching` Match the activity to the description. 🔍

➕ ☑ ⠿ **Embedded answer (Cloze)** `102` `Cloze` `tricky` This is an example of an embedded answers (Cloze) type 🔍

➕ ☐ ⠿ **Greeting** `103` `multiple choice` `media` `language` bonjour.mp3 What language is being spoken? 🔍   7.00 ✏️

➕ ☑ ▭ **Moodle user** `104` `short answer` `easy` Anyone who uses Moodle is a ... 🔍   5.00 ✏️

➕ ☐ ∴ **Moodle acronym** `105` `true/false` Moodle is an acronym for Modular Object-Oriented Dynamic Learnir 🔍   10.00 ✏️

Add selected questions to the quiz   7.00 ✏️

✛ 5 ✛ ⚙ **Types of geography** Drag the words relating to each type of geography to the correct notepad. This is an example of a Dra... 🔍 🗑 9.00 ✏️

Add ▾

History

Timeline - 2020

2003	Quiz added to Moodle 1.1. First paid-for feature.
2004	Question types become a plugin type (within quiz)
2005	Adaptive behaviour added (v1.5)
2006	Question bank & types moved out of quiz (sort-of)
2006	Tim Hunt takes over as maintainer

https://docs.moodle.org/dev/History_of_the_Moodle_quiz_and_question_bank

Timeline - 2021

2007 — Jamie Pratt re-implements question bank (v1.9)

2010 — Updates to handle new files, nav & backup in 2.0

2011 — New question engine. Behaviours. (v2.1)

2015 — Drag-drop types added to core

2021 — We really must fix the Question bank!

How the question bank works now

Database tables – core
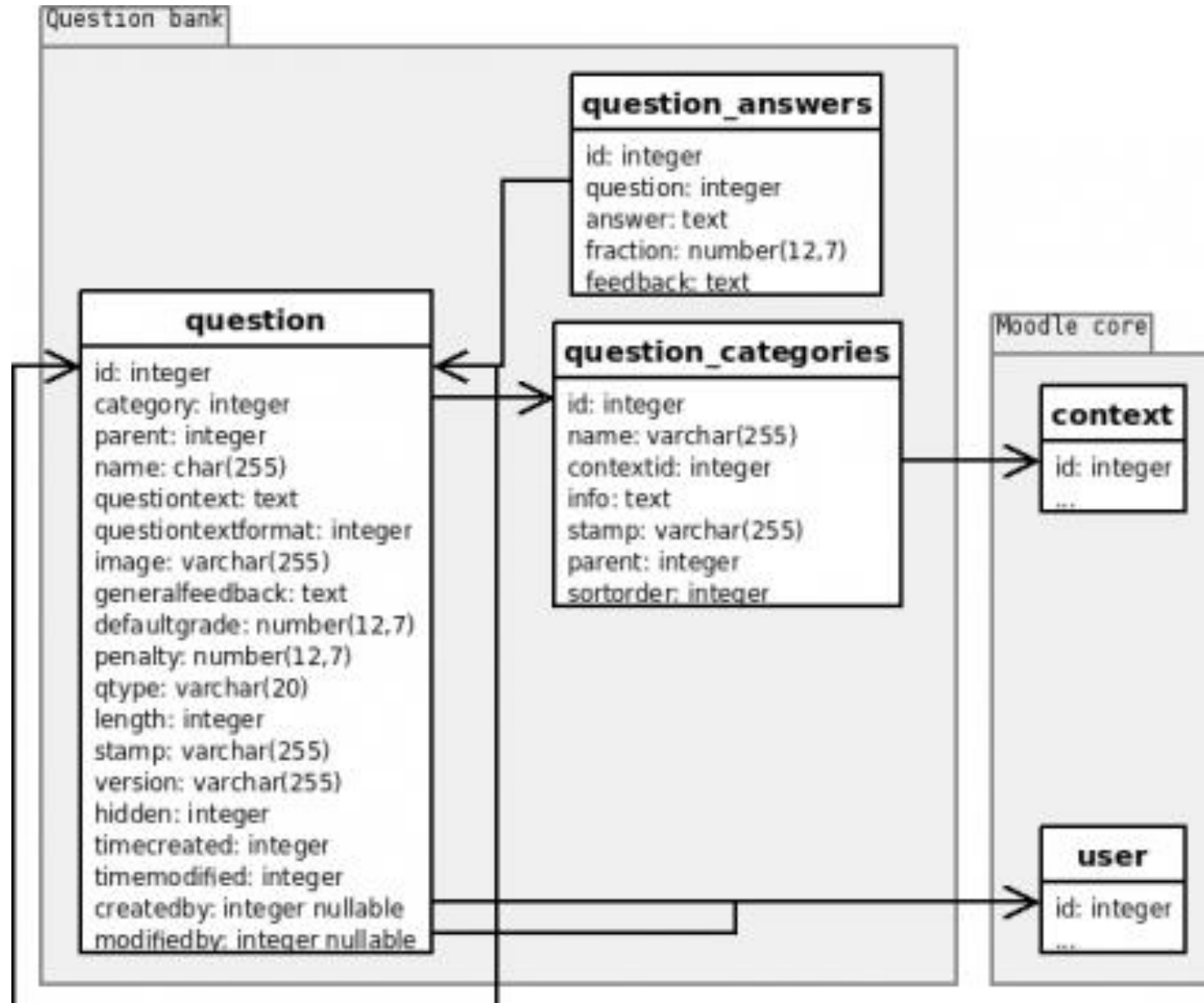
Database tables – with type-specific (part)

files	[table]
...	
< 3	0 rows	3 >

qtype_ddimageortext [table]
...
< 1	0 rows

question_dataset_definitions [table]
...
< 1	0 rows	1 >

qtype_ddimageortext_drags [table]
...
< 1	0 rows

question_categories [table]
...
< 1	0 rows	4 >

question [table]
...
< 4	0 rows	28 >

qtype_ddimageortext_drops [table]
...
< 1	0 rows

badge_external_backpack [table]
...
0 rows	1 >

badge_backpack [table]
...
< 2	0 rows	2 >

qtype_ddmarker [table]
...
< 1	0 rows

tag	[table]
...	
< 2	0 rows	3 >

qtype_ddmarker_drags [table]
...
< 1	0 rows

qtype_ddmarker_drops [table]
...
< 1	0 rows

user_devices [table]
...
< 1	0 rows	1 >

qtype_essay_options [table]
...
< 1	0 rows

In memory representations
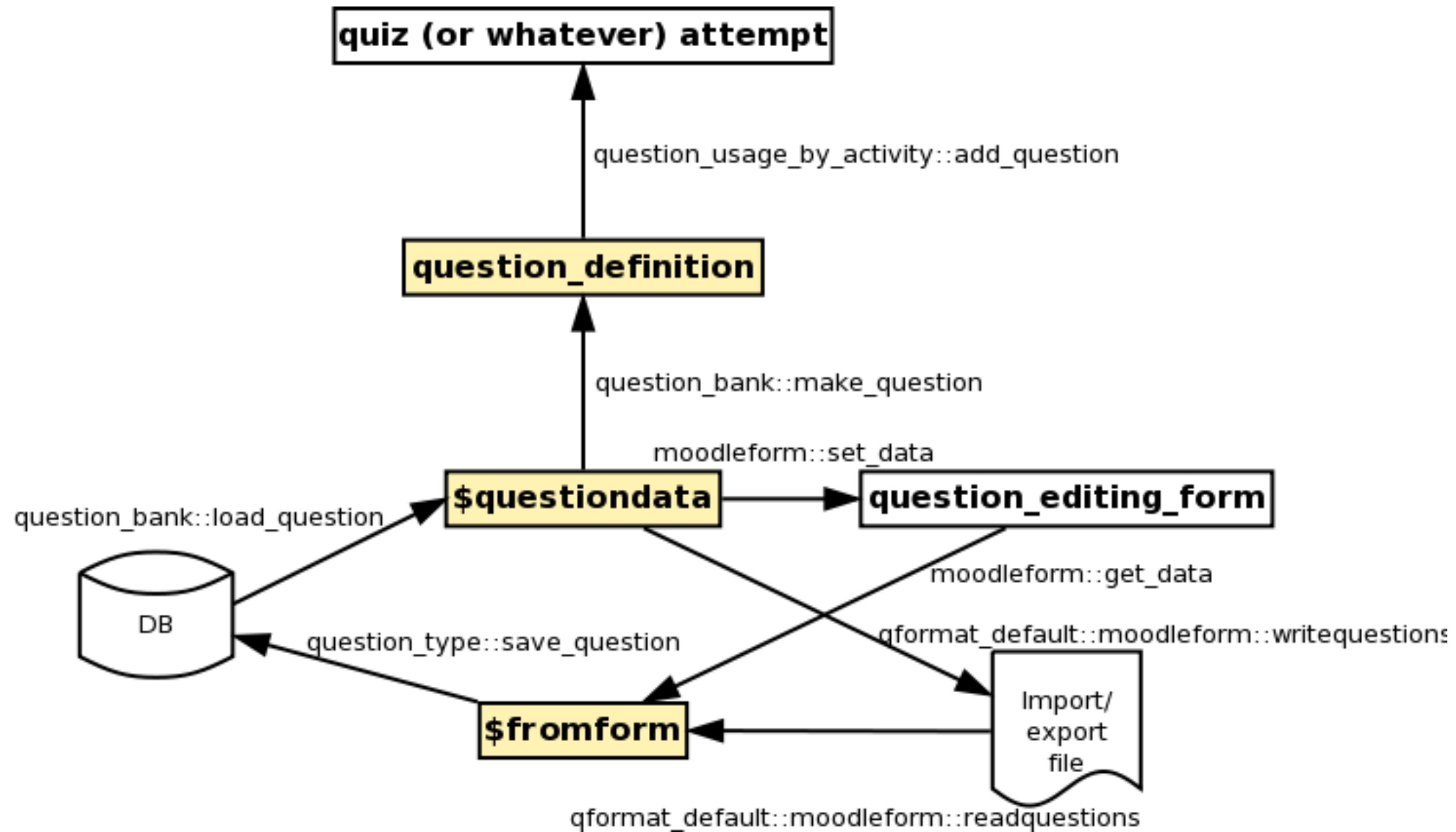
Question bank display

Moodle QA Testing Site THEME ▾ English (en) ▾

Question bank

Select a category: Default for New Features (5)

The default category for questions shared in context 'New Features'.

No tag filters applied

Filter by tags... ▾

☐ Show question text in the question list

Search options ▾
☑ Also show questions from subcategories
☐ Also show old questions

Create a new question ...

	T ▲ Question		Actions	Created by	Last modified by
☐		Question name / ID number		First name / Surname / Date	First name / Surname / Date
☐ ⋮≡	Moodle activities	101 matching	Edit ▾	Admin User 5 November 2008, 7:54 PM	Terri Teacher 18 October 2019, 5:39 PM
☐ ▦	Embedded answer (Cloze)	102 Cloze tricky	Edit ▾	Admin User 7 March 2014, 10:27 PM	Terri Teacher 18 October 2019, 5:38 PM
☐ ⋮≡	Greeting	103 multiple choice media language	Edit ▾	Admin User 27 August 2008, 7:57 PM	Terri Teacher 18 October 2019, 5:38 PM
☐ ▭	Moodle user	104 short answer easy	Edit ▾	Admin User 5 November 2008, 9:34 PM	Terri Teacher 18 October 2019, 5:38 PM
☐ ••	Moodle acronym	105 true/false	Edit ▾	Admin User 5 November 2008, 7:58 PM	Terri Teacher 18 October 2019, 5:38 PM

With selected:

Delete | Move to >> | Default for New Features (5)

This site will be reset in 27 mins 53 secs
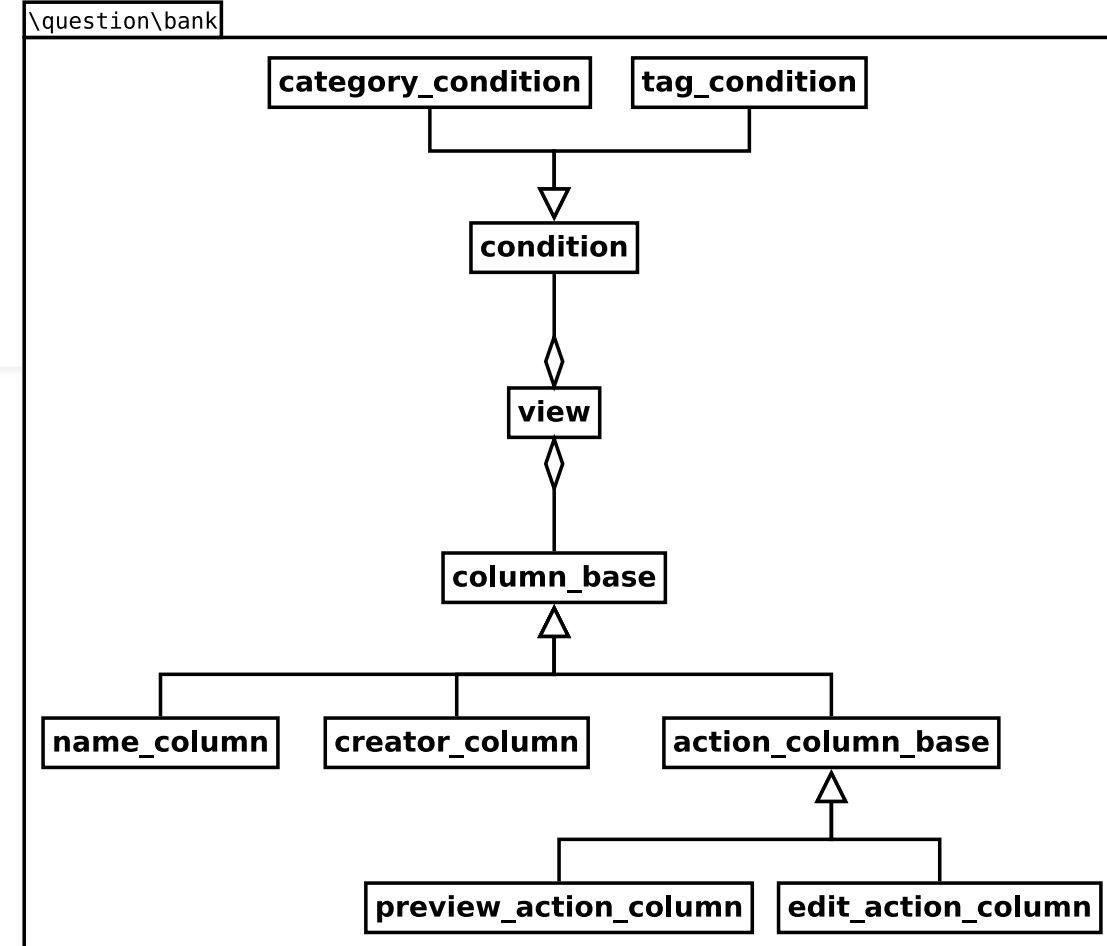
Problems

Problems

1. MDL-41924 backing up a quiz that uses any questions from a shared back includes the whole of that bank.

2. MDL-69306 Duplicated quiz uses the same questions from the question bank → dataloss.

3. Sharing questions between courses not actually usable.

4. Even if you do understand site-wide roles well enough to use it, there is only one 'space' to use for sharing.

5. Student attempts quiz. Teacher edits question. Pain!

6. Moodle 3.9 adds a 'Content bank'. Does it make sense if that is separate from the question bank?
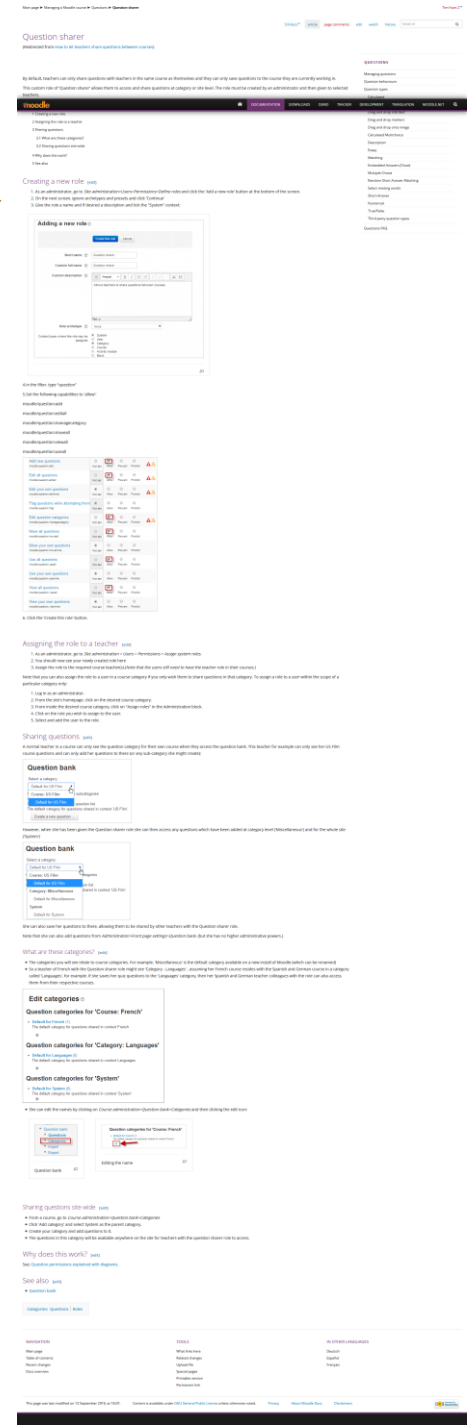
Requirements

Scenario 1 – basic quiz use

1. Antonia is teaching French and wants to give her students practice.
2. She creates a new quiz Week 1 and adds some questions.
3. Her students learn.   ← This bit works fine already

But!

4. Antonia duplicates the quiz in Week 2 of the course.
5. She edits the questions in that quiz to test the Week 2 learning.
6. She and her students are surprised to find that the week 1 quiz is now broken. ☹

Scenario 2 – shared question bank

1. The maths faculty teach their own students and also scientists
2. They want a shared question bank of questions to use everywhere

↑ This works now, sort of

But!

3. The language faculty hear about this and want the same.
4. But maths teachers don't want to see the language questions,
5. and language teachers don't want to see the maths questions.

Scenario 2 – shared question bank (continued)

Also

6. To help collaboration, staff want to have comments on questions

7. They want the system to keep all versions of each question so changes can be undone.

8. To help manage the shared bank, they want to easily see where each question is used.

Scenario 3 – creating exam questions

1. Tim is using Moodle for his end-of-year exams.

2. University policy requires that the question are in a separate bank
   - So they cannot accidentally be added to a practice quiz.

3. Policy also requires Luca to reviews and approve each question before it can be added to the quiz.

Possible design

Note!

- Currently (October 2020) this is a proposal that is still being worked on

- Initially please give feedback via
  - Email (T.J.Hunt@open.ac.uk)
  - Telegram chat

- After feedback from key stakeholders, I am likely to post this in the quiz forum for wider discussion

Question bank

A) Question bank should be an activity

- At the moment, we can have bits of question bank at Activity, Course, Course category and System level
  - Unnecessarily complicated
  - There is only one system context, so can only be one shared question bank

- If a question bank is an activity, we can still have one for the course
- Want a shared question bank for a particular group of teachers?
  - Make a course for them and add one or more question banks there
  - This is probably easier for people to understand than Question sharer role
- This type of activity will only be visible to teacher (by default)

B) Question bank should be built from plugins

- We are half-way there. Each question bank column is a PHP class
  - But, they are not proper plugins yet, and they should be
  - Also, search conditions, actions, and pages like previewing a question

- This helps us solve many desired requirements:
  - Show in the question bank where a question is used
  - Make the statistics from quiz attempts at that question available in the question bank
  - Store the state of a question in the workflow

C) We need different types of question bank

- Sometimes we just want a basic question bank like now

- At other times we want a complex question bank, with an approval workflow where questions must be approved before they are used

- If Question banks are a type of activity, we can have different ones for different uses

- Is StudentQuiz already an example of this?
  - A question bank with collaboration features

D) Admins able to configure the Q bank

- Similar to how the admin can configure the Atto toolbar
  - But, perhaps with better UI!
    - Perhaps the same better UI can be used for Atto config too?

- Separate config for each type of Q bank

- Or, perhaps let each teacher customise their view of the question bank
  - Within limits?

Question versioning

E) Bank should keep every version of every Q

- Makes shared question banks much safer

- Deals, once and for all, with issues like
  - MDL-66095 Errors (including breaking quiz cron) if drag-drop onto image questions edited after being attempted
  - And many similar issues for other question types

- UI to access this will add complexity
  - This needs to be minimised

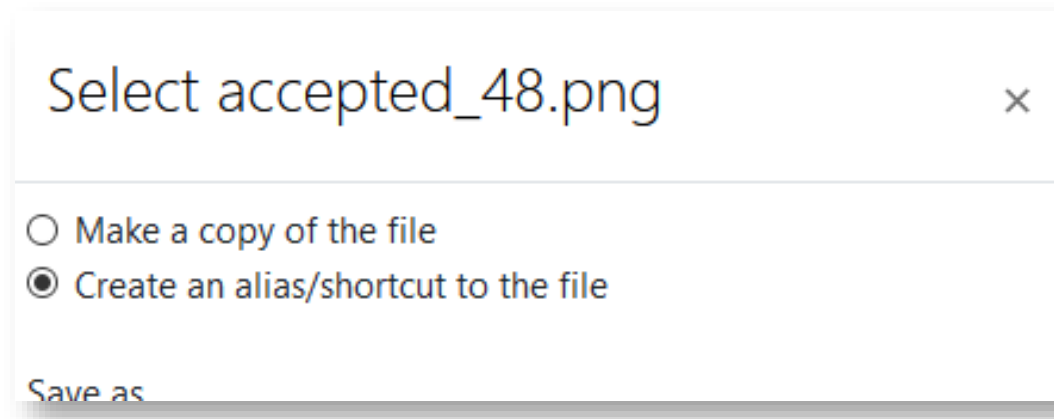- Must do this with minimum pain for question type developers

Question bank and quizzes

F) Need a clear relationship quiz <-> q bank

- To deal with issues like
  - MDL-69306 Duplicated quiz uses the same questions from the question bank: can confuse teachers if they expect questions were copied too

- Probably do it like files →

Select accepted_48.png   ×

○ Make a copy of the file
◉ Create an alias/shortcut to the file

Save as

- Must ensure this sorts out the backup problem
  - MDL-41924 Minimise questions included with quiz backups (or duplication)

G) Can pick questions from any bank

- When building a quiz, you can select questions from any question bank you have access to

- Except: restrictions can be imposed
  - "Quiz 'Final exam' can only use question from 'Final exam questions' managed question bank"

To be decided

We need answers to these questions

- Should the question bank merge with the new **content bank?**
  - Deeply, all the way down
  - or should we just put it in a similar place in the user-interface?

- How does question versioning work (**DB structure** and user-interface)?

- What do all the other bits of **user interface** look like?

- How exactly does the link between quiz (and other activities) and question bank work?
  - And how does that solve the **backup** issues?

We can't do everything at once

- There are lots of other things that people want
  - Almost all sensible requests

- The focus now must be on big changes that can only go into 4.0
  - The proposed changes give more power to plugins
  - Making it easier to meet particular requirements in future

- Many of the other things people want are unrelated to these changes
  - So then can be worked on in parallel (by other people. We are busy!)