

Demo Features Guide: e-Exam System v5

This document provides a walk through of the main features of the e-Exam System v5.

This is a work in progress! Last Updated 22 August 2014

Acknowledgements

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The views expressed on this website and in the associated publications do not necessarily reflect the views of the Australian Government Office for Learning and Teaching or participating institutions.

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Get Started

Refer to the boot and set-up guide to match your hardware. Guides are available for: windows 8 [W8], automating the start up on 'Windows' hardware [Wa], manually starting up on 'Windows' hardware [Wm], or starting up using Apple hardware [A]; with a list of common boot keys in guide Wk. It is advisable that students have set-up their laptop well in advance of the exam day!

The Ubuntu boot sequence appears like so. When the Ubuntu logo is visible you are on your way!










After the boot sequence is complete the desktop appears.



Depending on the configuration the buttons on the left menu bar will vary.

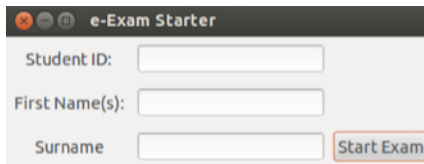
The configuration options for exam modes are 'paper' for word document based exams, 'Moodle' for computer marked question based exams that utilise the on-board LMS, 'remote' for exams based on a networked LMS server and 'demo' where all modes are available at once.

The available buttons are:

Icon	Button Label	Description
	Dash Home	Enables access to additional applications and control panel.
	Shut Down	Shuts down the system.
	Moodle Exam	On-board LMS for computer marked question types. Used for 'moodle' mode exams.
	Questions & Materials	Word document type exams and associated materials. Used for 'paper' mode exams.
	Answers	Answers area where student responses to word document exams are saved. Used for 'paper' mode exams.
	Blackboard	Remote LMS. Used for 'remote' mode exams.
	Trash	Delete unwanted items.

Note: when a mode is set the buttons that apply to the other modes are hidden. The Dash Home, Shutdown and Trash buttons are always visible.

Depending on the exam mode, the 'e-Exam Starter' dialog box may be present in the centre of the screen. This is the recommend method for starting an exam for 'paper' and 'moodle' mode exams.



The 'remote' mode also uses a 'Begin Exam' dialog to remind users to connect to the network first.

Demo mode

The demo mode makes available multiple exam modes and features in the one system.

It is intended that production systems used for real exams will utilise one of the specific exam modes. When a particular mode is configured this will remove the unused buttons and thus minimise potential confusion for students.

The screen below will displayed if the system is in general demo mode. Each mode is available but must be started manually via the relevant button. Note: The 'e-Exam Starter' dialog is not available.



e-Exams using paper equivalent & post-paper strategies

Ideal for situations where stakeholders are new to e-Exams

Caters to two main scenarios:

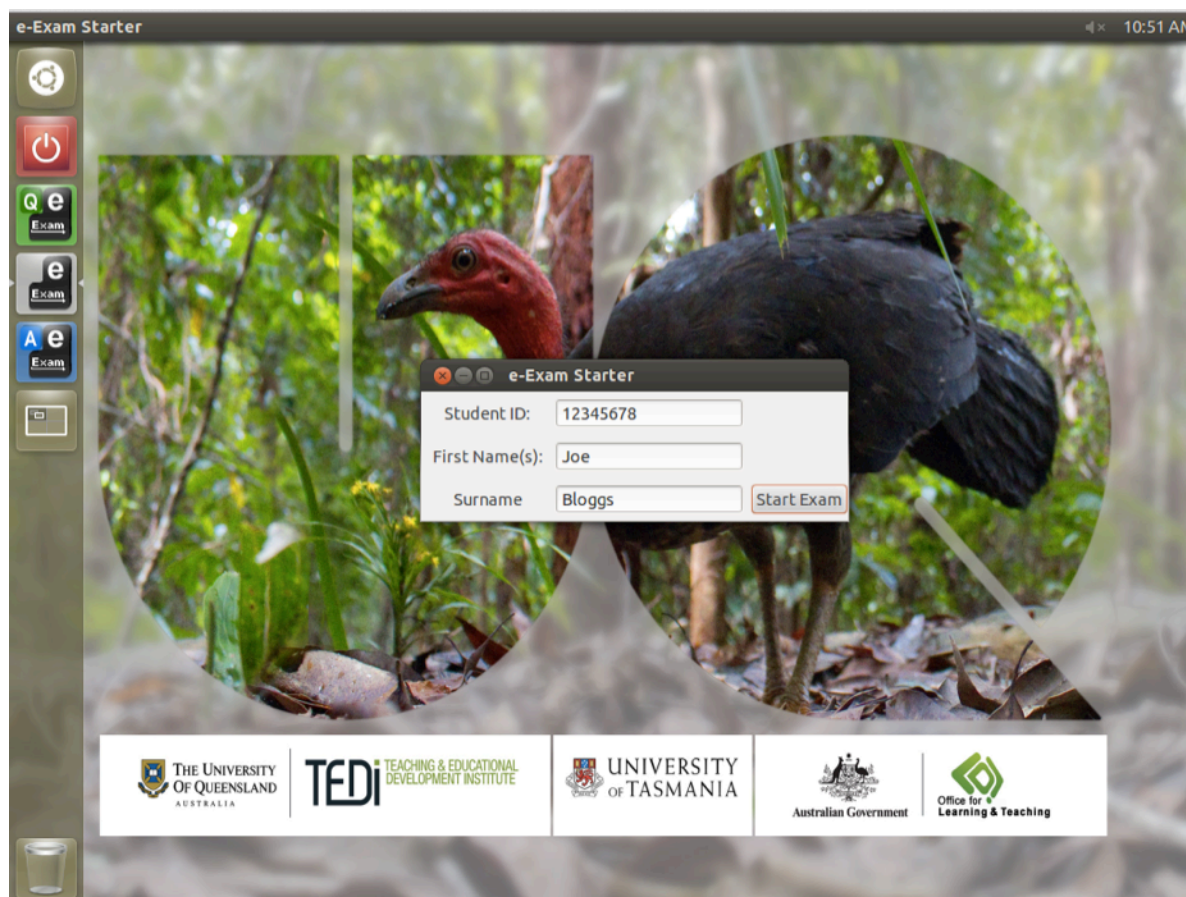
1. Paper equivalent exams where students have a choice of keyboard or pen-on-paper responses. This limits question types to what is possible on paper.
2. Post-paper exams, which go beyond what is possible with paper-based exams. This may include long form essay questions that integrate multimedia, simulations, and virtual lab experiments into the question prompt or where student responses could include graphics, spread sheets, computer code, accounting package files, CAD files to name a few.

Using a word processor provides a flexible environment in which to run both of these scenarios. The e-Exam system provides an on-board office suite (Libre Office) that can read and write Microsoft Office documents and spread sheets.

We recommend that teachers prepare exam question papers and materials with the .doc and .xls file formats to minimise compatibility issues (avoid docx and xlsx as these can cause issues with Libre Office).

Automated opening procedure

When the system is configured for 'paper' mode (that uses a word document style exam) then the following screen will appear after start up. Also note the reduced number of buttons on the side menu bar.

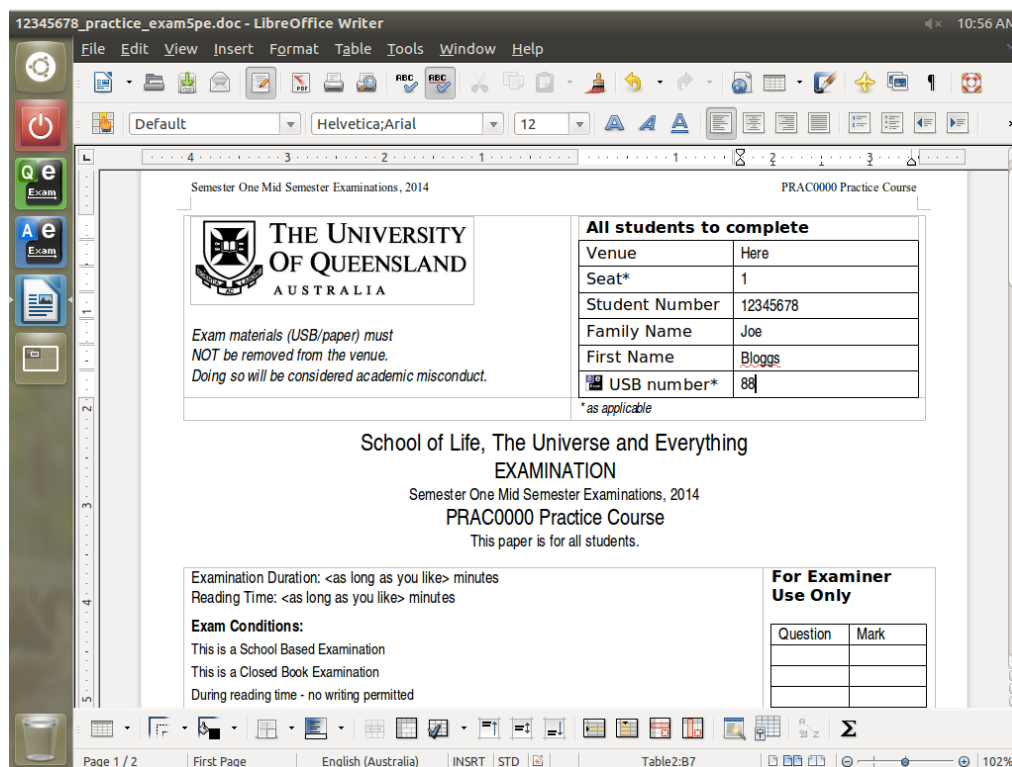


To start the exam students type their details into the 'e-Exam Starter' dialog and click 'Start Exam'.

This will then open the question paper directly.

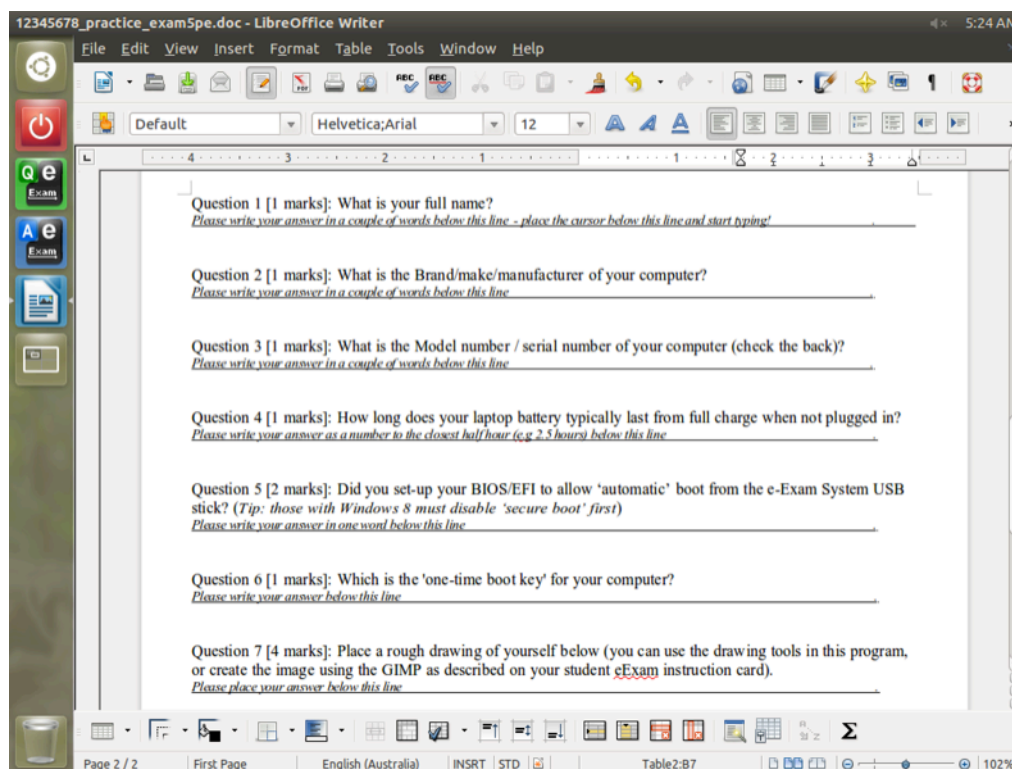
The system makes a copy of the original question paper and places this into the Answers area with their student ID prefixed to the file name. This is the document into which students will type their responses.

Once open, the first thing for students to do is to fill in their details at the top of the first page. Students should read the cover sheet details carefully as details may vary between exams.



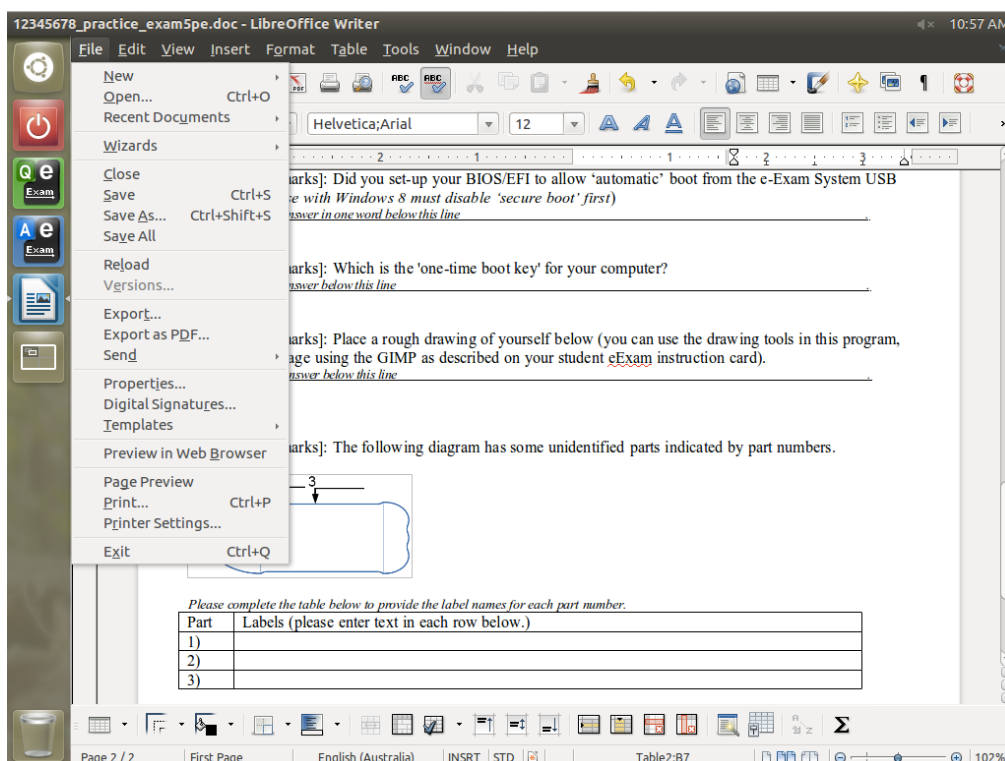
Next, scroll down to find the questions.

Type into the spaces indicated. Again details can vary between exams. Students may need to place responses under the line or inside boxes or tables.



Remember to use File > Save regularly!

Note: an auto recovery 'auto save' feature activates each minute, but using File > Save regularly is highly recommended.



When finished answering all of the questions, use File > Save one last time and then File > Exit.

Manual opening procedure

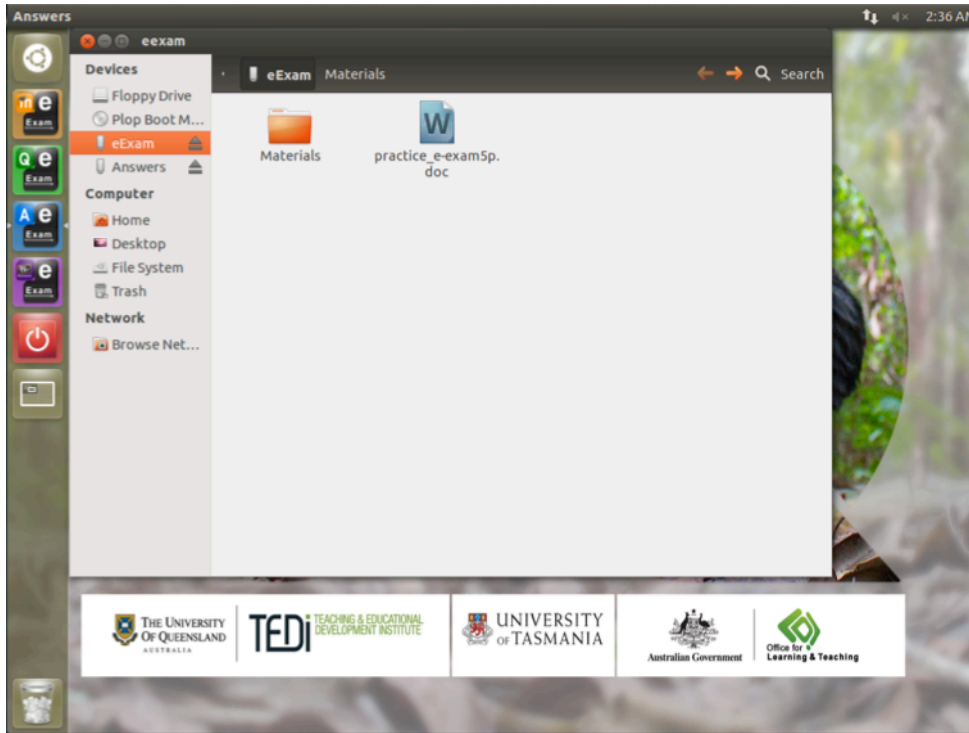
In general 'demo' mode the exam question file can also be accessed manually by choosing the Questions and Materials button.

This manual process also serves as a back up when being used for real exams.

The screen below shows the system in 'demo' mode. Note that the 'Exam Starter' dialog is not present.



Next, Locate the exam question paper and related materials.



Note: in the current demo version, upon clicking the 'Questions & Materials' button it indicates 'answers' as active on the Unity Launcher (side bar) and in the window title bar. However, it does indeed open the eExam partition. [We need to trouble shoot this niggle!].

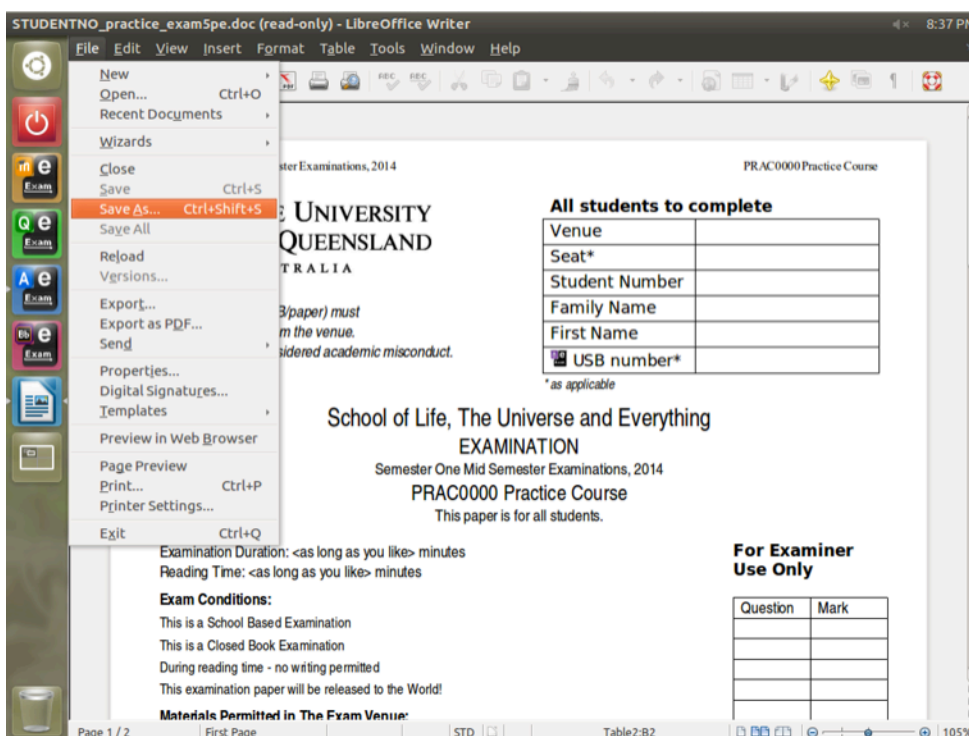
Clicking on the 'Answers' button works as it should.

Note: the Floppy drive and CD visible in these screen images won't be visible or accessible when booting from a USB stick.

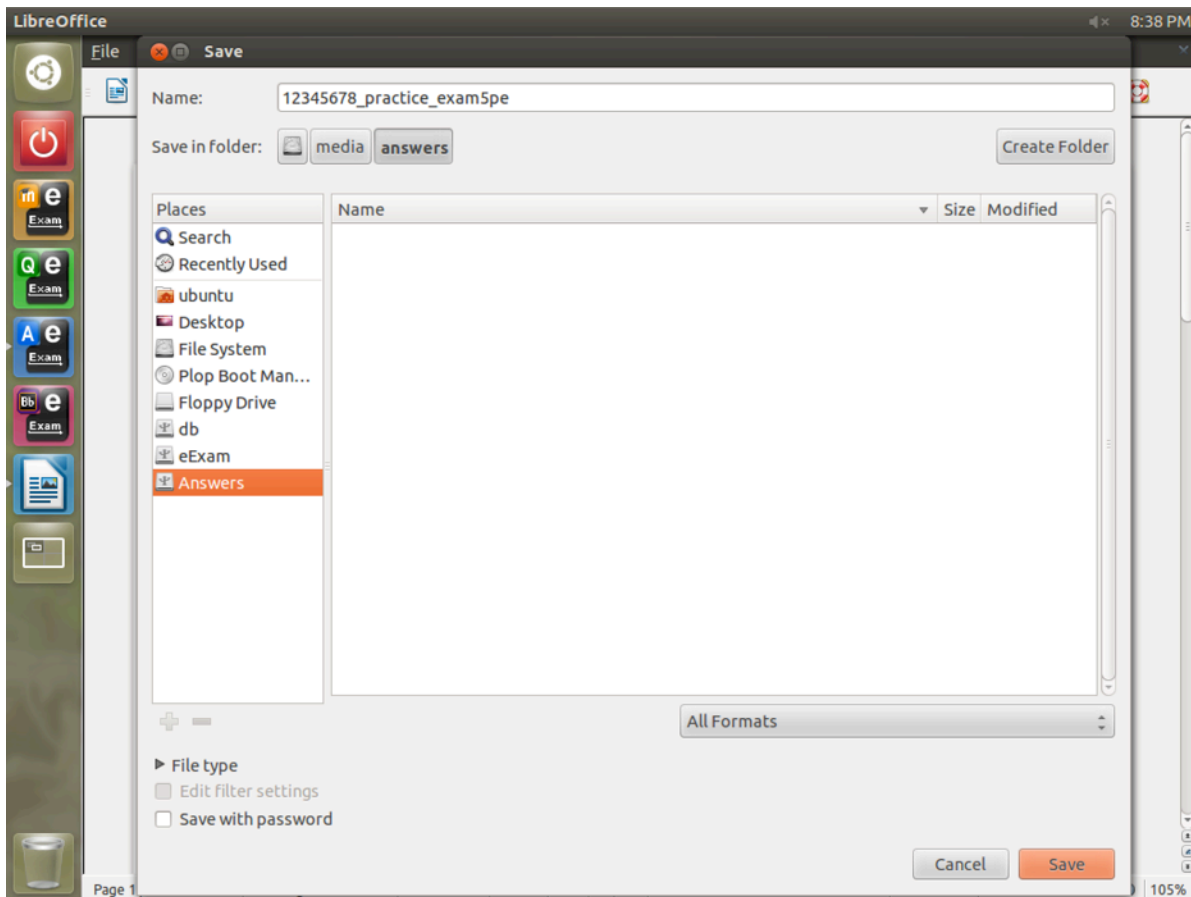
Any icons for local hard disk drives and CD drives in the host computer are inaccessible as are secondary USB/removable storage devices in order to remove a potential channel for cheating. Clicking such these icons results in an 'access denied' message.

Double click on the exam question paper. It will open in the Libre Office Writer.

Perform a File > Save-As.



Direct the file onto the Answers area. Be sure to prefix the file name with the student ID.

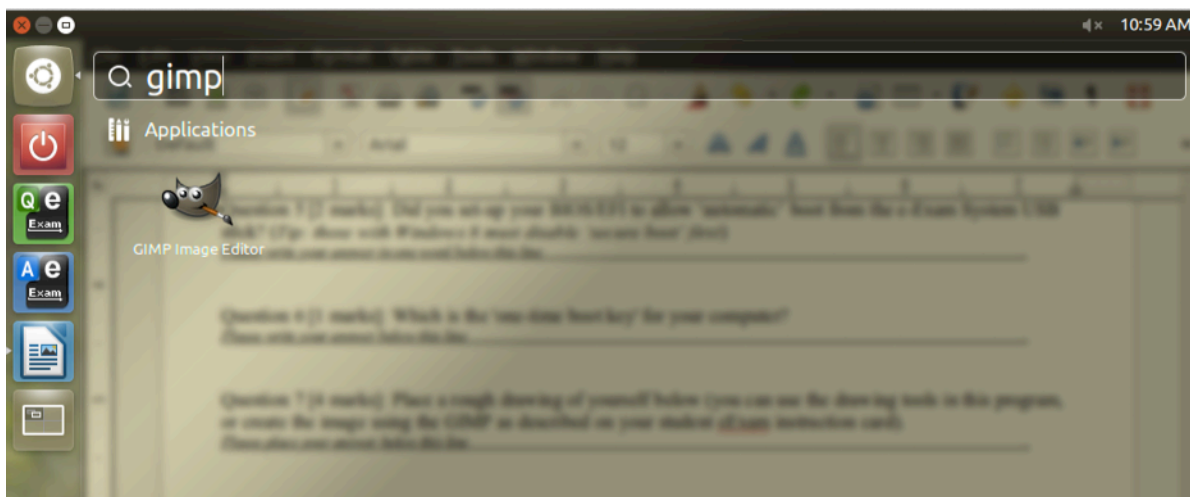


Users can now respond by typing answers into the relevant areas of the document.

Drawing diagrams

There is also a drawing application (GIMP) available to create basic diagrams (which can then be copied and pasted back onto the answers file).

To open the drawing application click on the 'Dash Home' button and type GIMP into the search field, then press the 'enter' key.

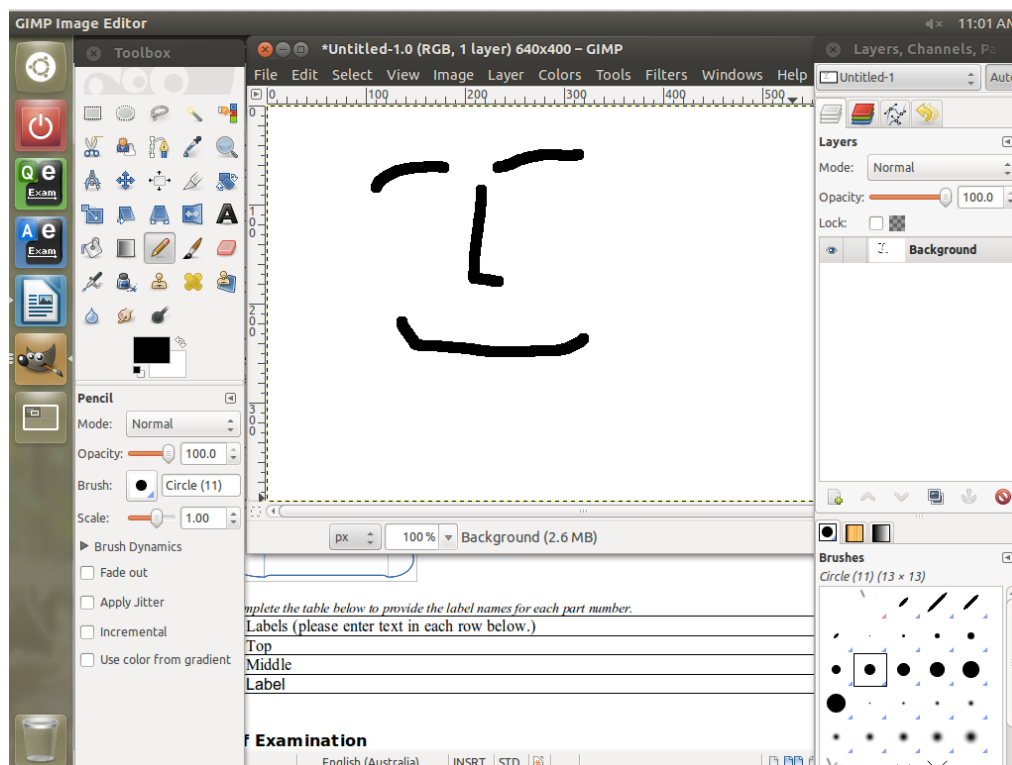


The GIMP software will then open.

When the GIMP opens, choose File > New. The default size canvas will be fine.

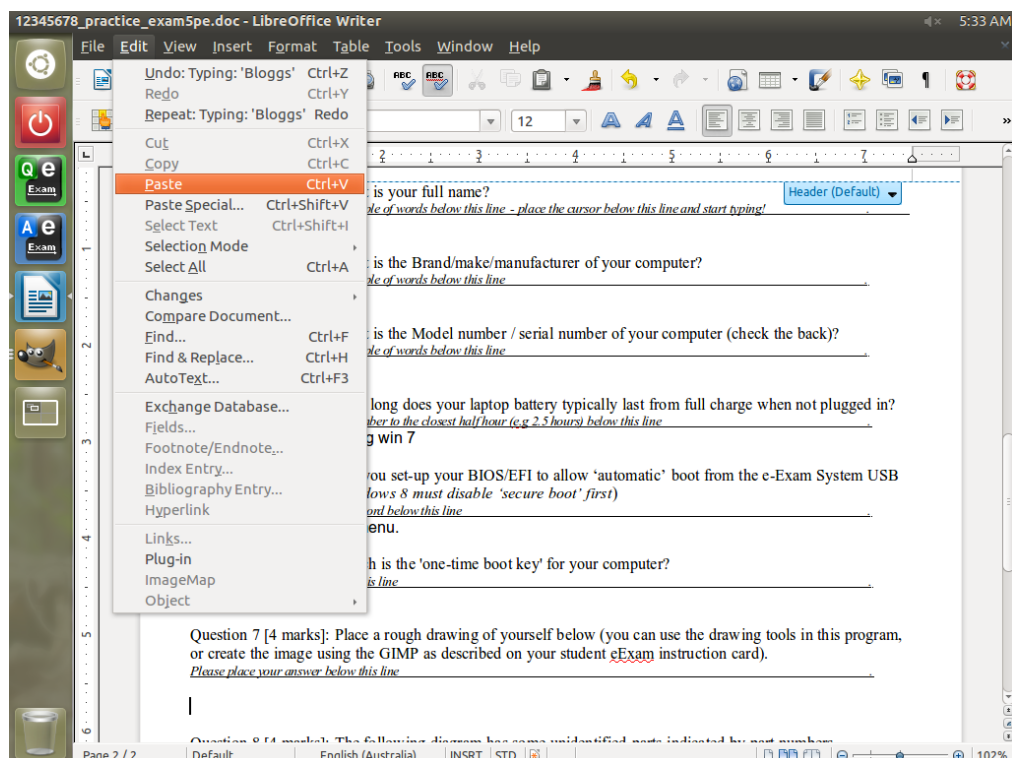
Then in the new canvas, use the tools to create the diagram.

When you are done, use Edit > Copy (you may first want to use the selection tool to select around the image otherwise the entire canvas area will be copied).



Then return to the word processor.

Place the cursor where you want the image to appear. Then use Edit > Paste.



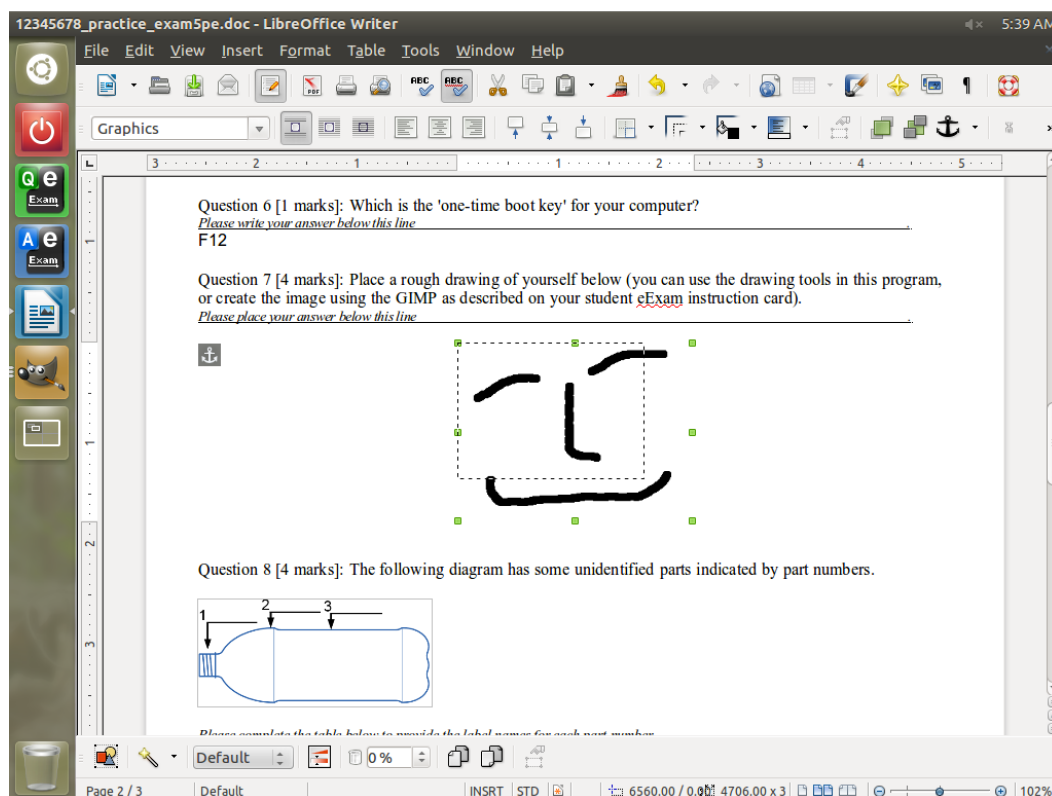
The text flow property of the image may need adjusting so that it doesn't overlap.

To do so, click the newly pasted image.

The graphics tool bar will appear on which text wrap style can be selected.

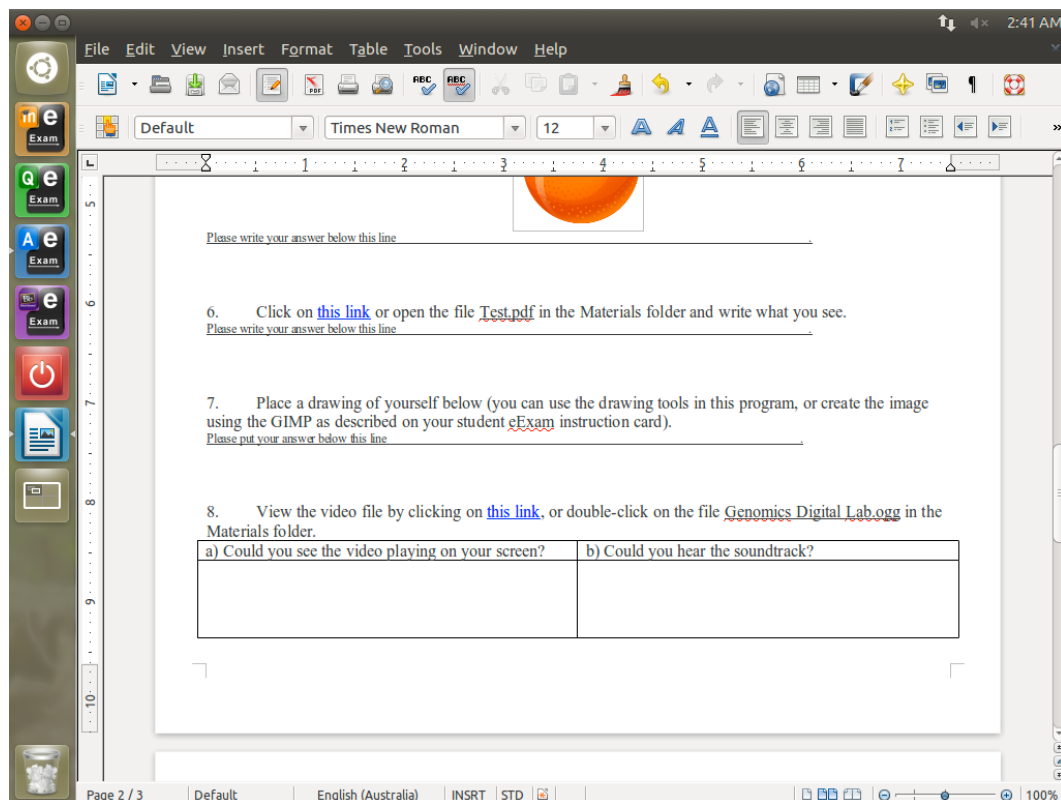


The image can be resized by selecting the image and then manipulating the resize handles located around its edge.

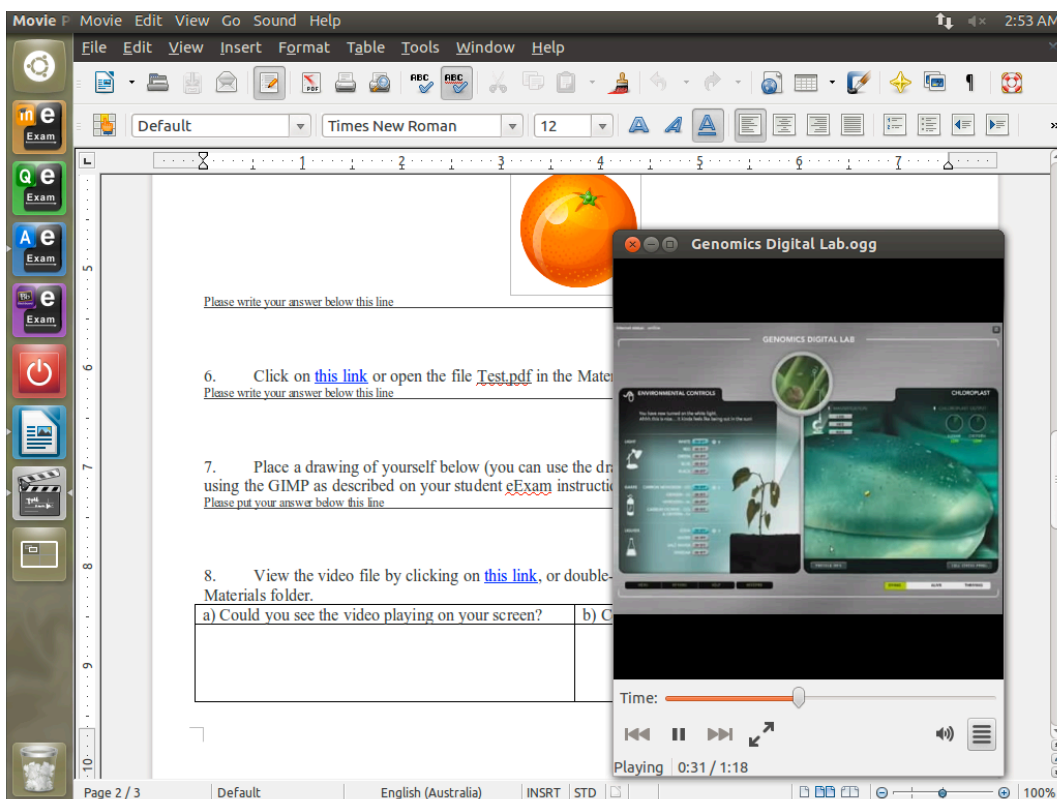


Multimedia

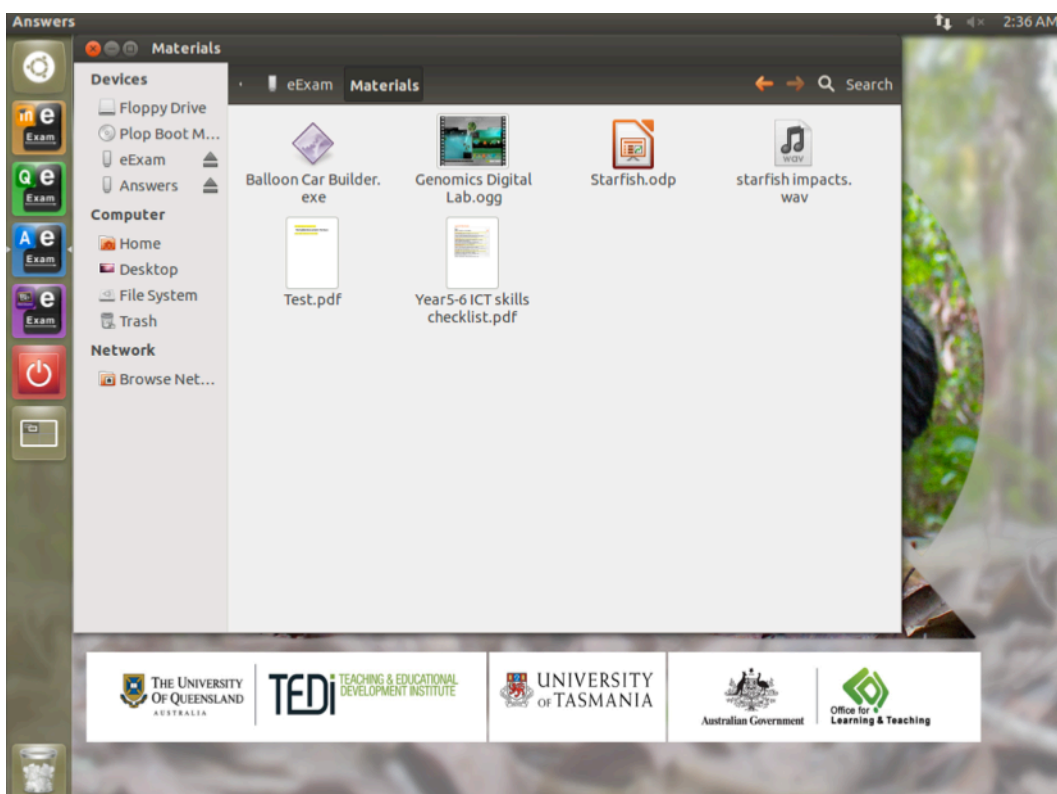
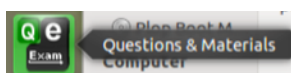
In post-paper exams embedded links may be used that lead to additional reference documents, multimedia and even additional software.



On links to multimedia can be activated by holding down the CTRL key and clicking the link (or right click and choose 'open link'). The file will open in the relevant application (e.g. media player).

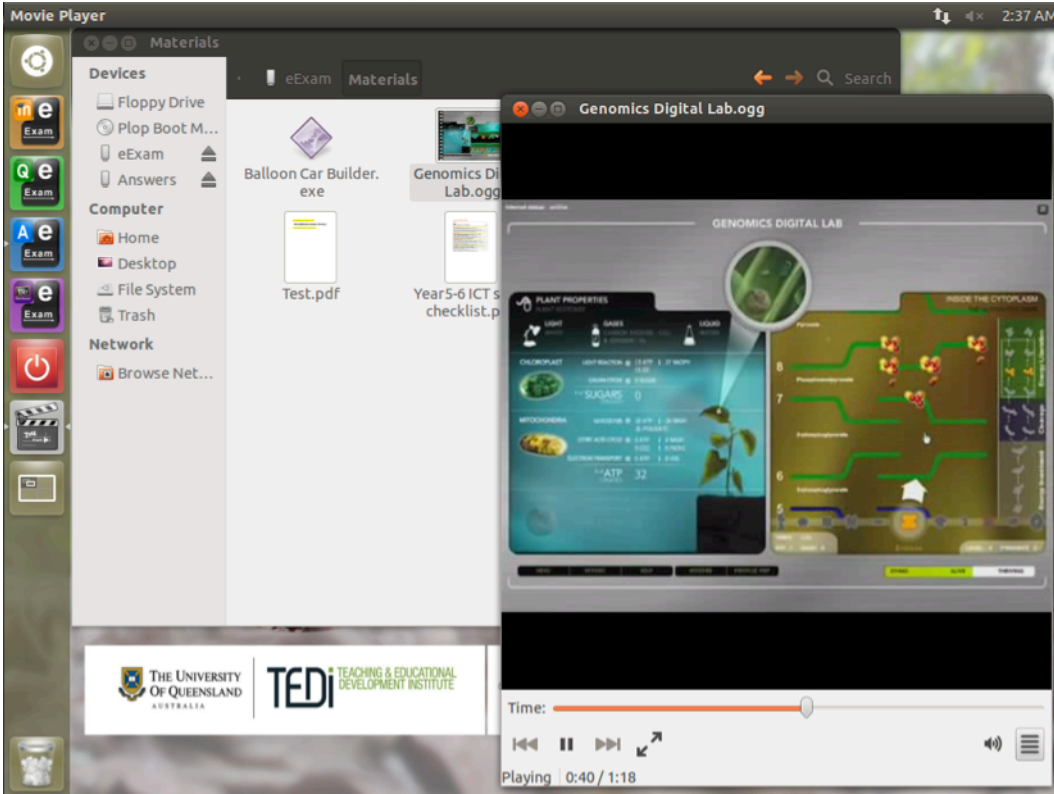


These files can also be found by going to the 'Materials' folder within the Questions and Materials area. Click the 'Questions and Materials' (Q) button on the side bar.

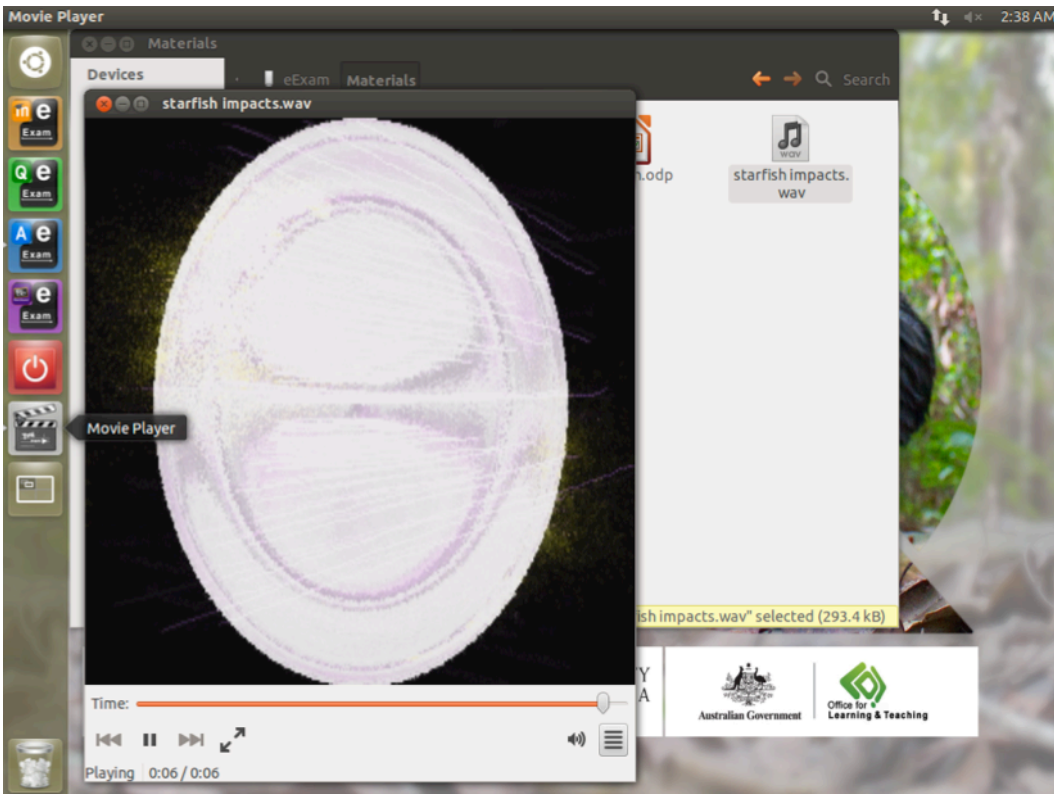


Inside the Materials folder, double a click a file to open it.

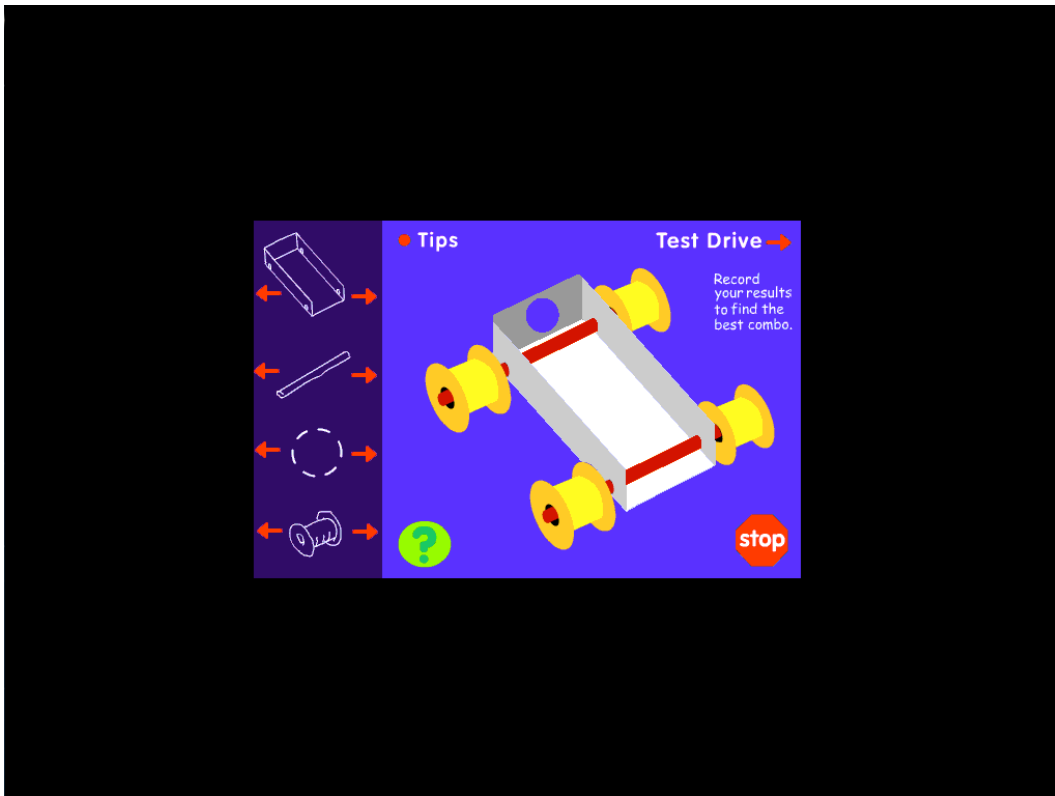
The file will be opened in the appropriate player or viewer.



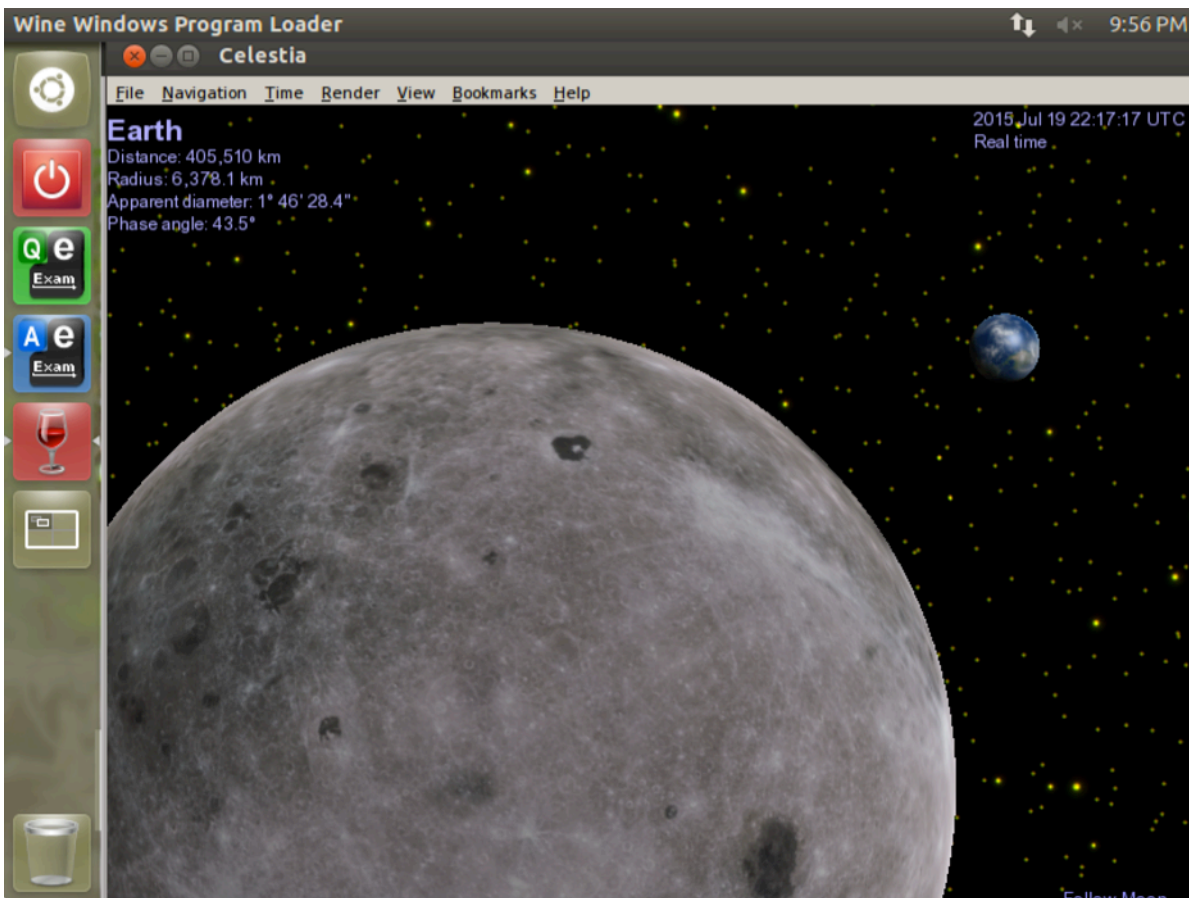
Play a sound file.



Start a windows simple Application (Balloon Car Racer - this runs using WINE).

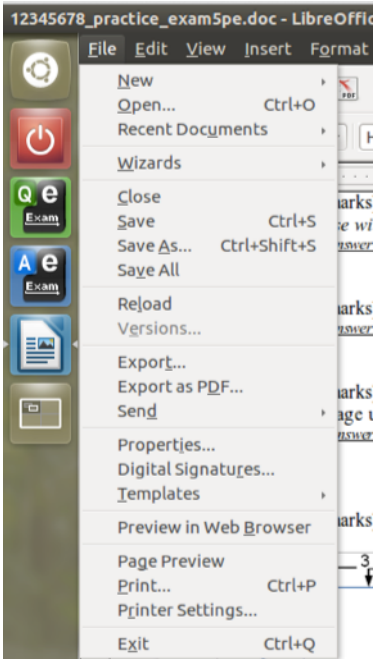


Start a complex Windows application (Celestia portable version – using WINE)



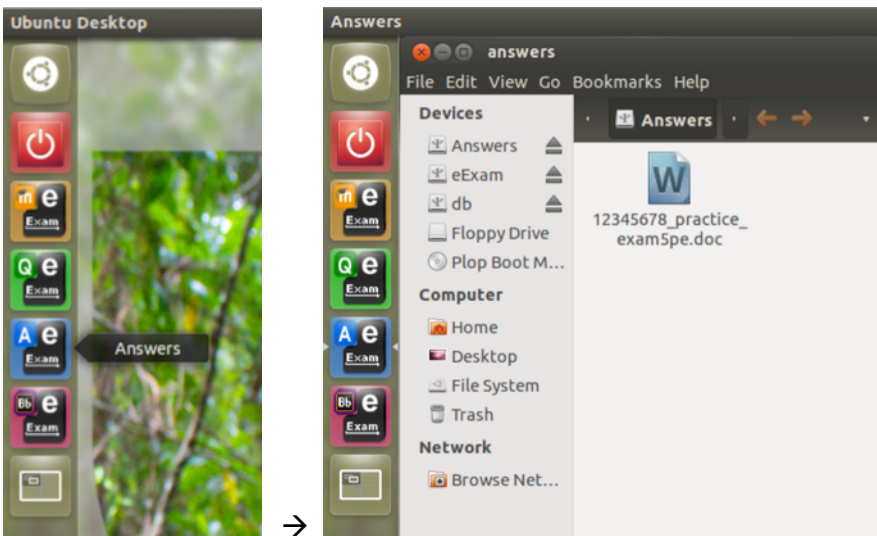
When finished writing

Perform a last File > Save and then use File > Exit



Manually checking saved answers

It is a good idea to double check that the answers were saved into the Answers area by clicking the 'Answers' button on the side bar.



The document that contains question responses should appear in the answers area.

e-Exams with computer marked question types using on-board LMS

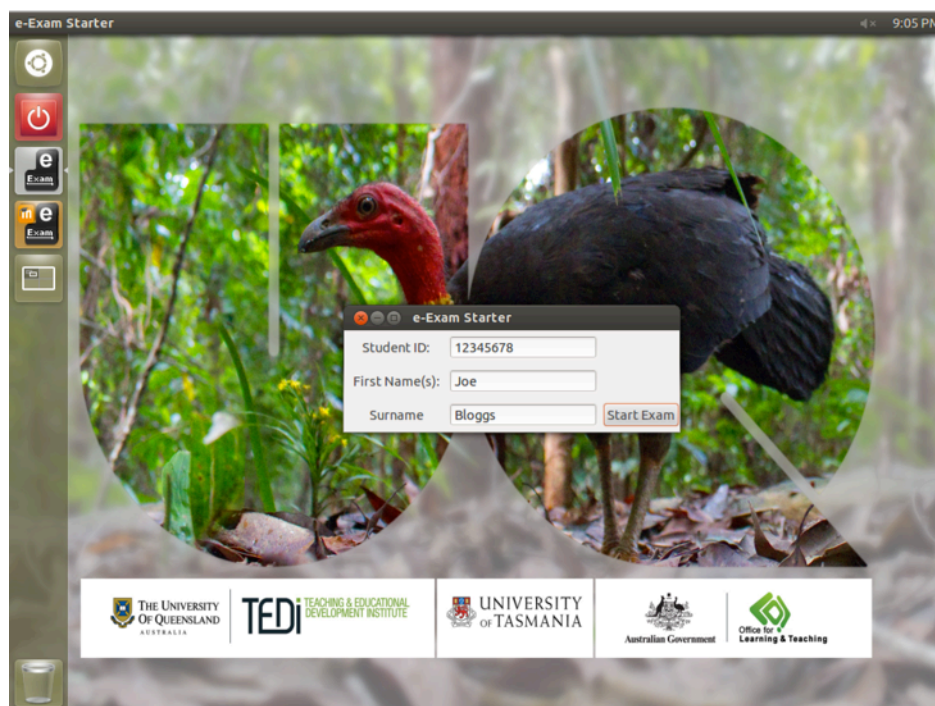
On-board LMS (Moodle 2.5) running on 'localhost'.

Automatic opening procedure

When the system is configured for an on-board LMS style exam then the following screen will appear after start up. Also note the reduced number of buttons on the side menu bar.

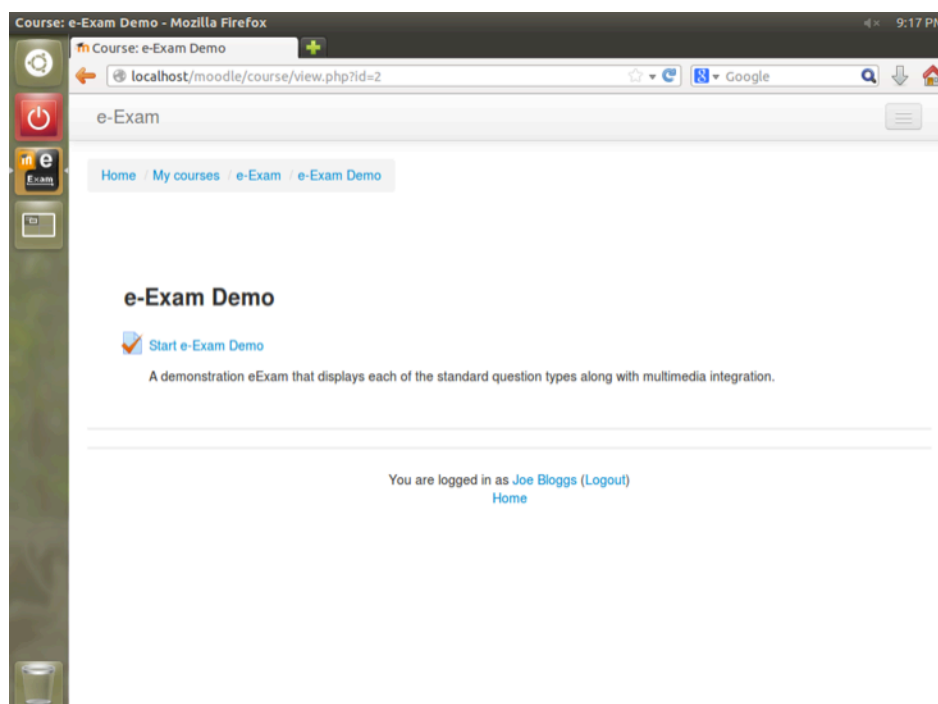
Students should fill in their details and click the 'Start Exam' button.

Note: please only enter numbers into the student ID box.



The browser will be launched and the student will land on the start page for the exam having been automatically logged in.

The requested student data is used establish an account on-the-fly and to log the student into the system automatically. The student ID number becomes the unique identifier for the data file and must be numerical only (no alpha characters).

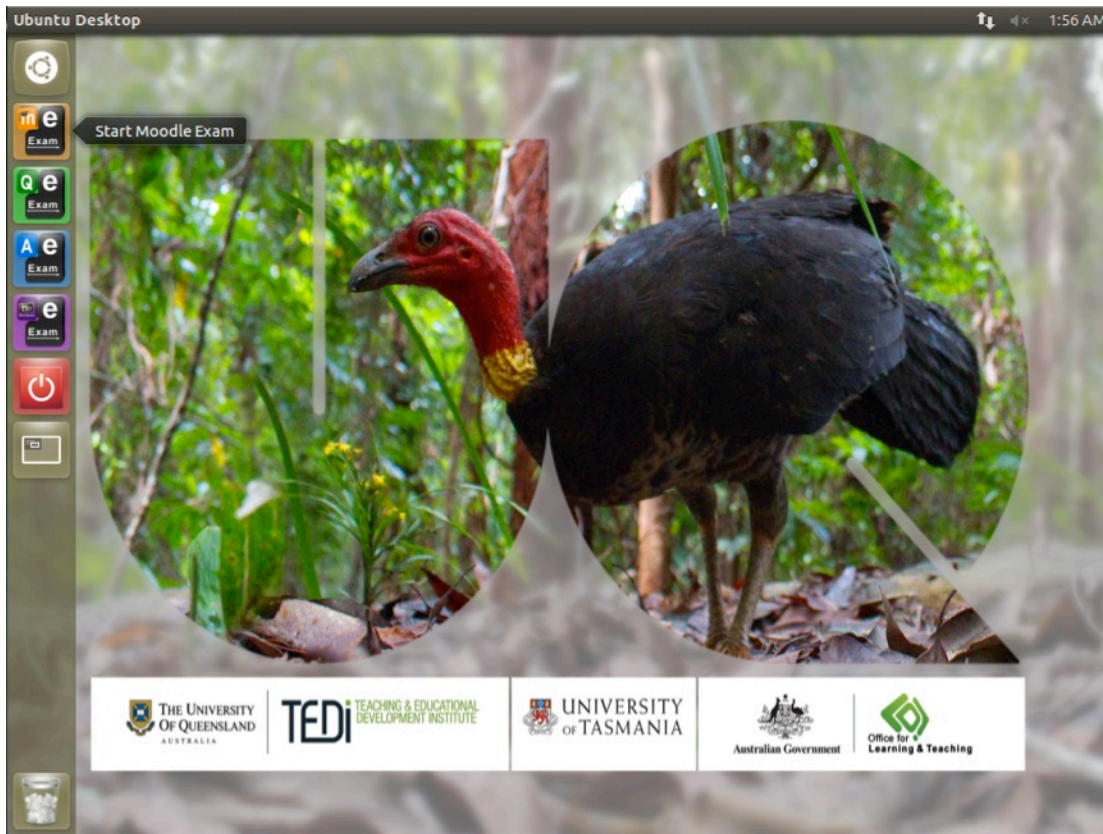


The student can then click through the links to the exam to begin (see 'start the exam' section).

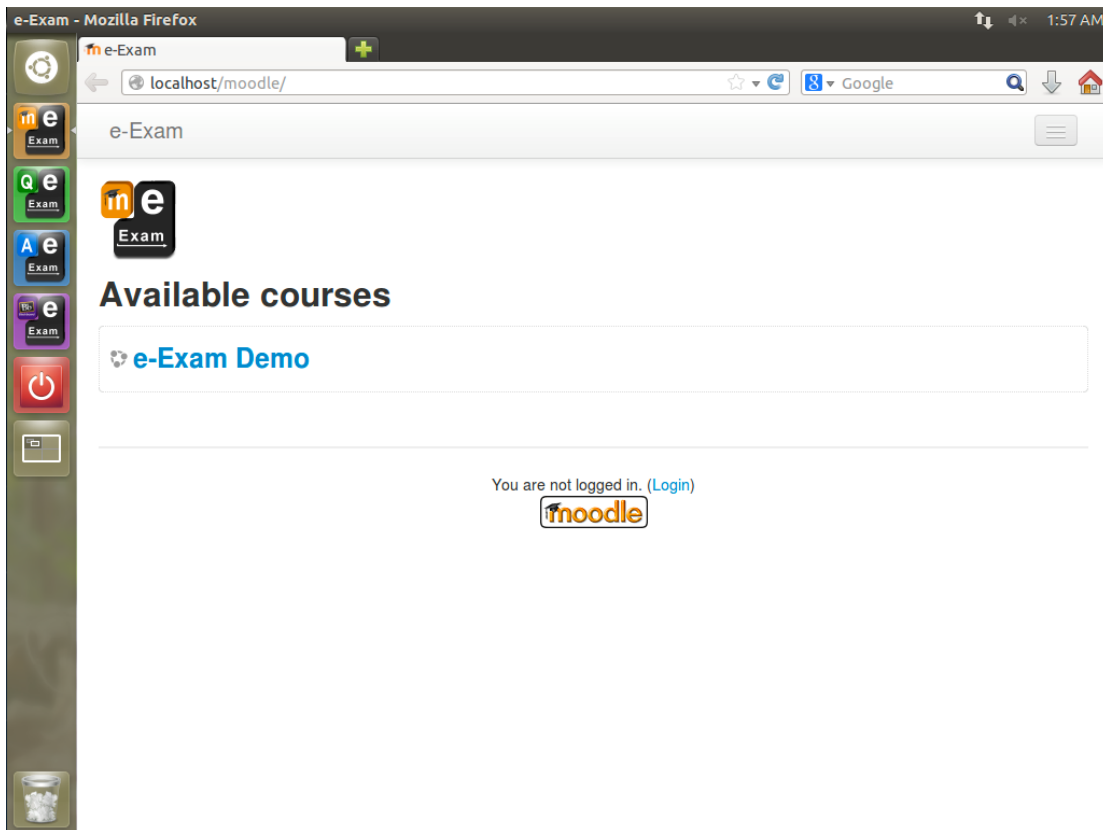
Manual opening procedure

This is used in demo mode only.

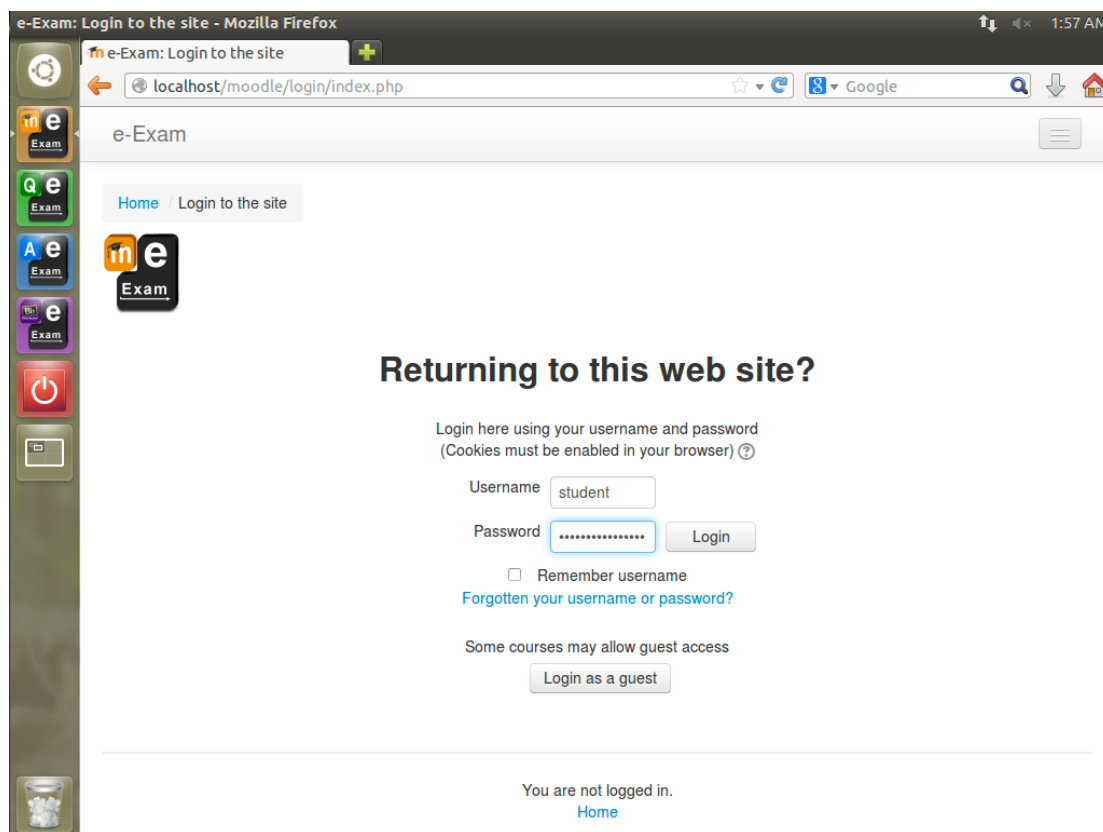
Click on the orange e-Exam icon to launch the on-board LMS (Moodle).



Follow the bold links to start the exam.

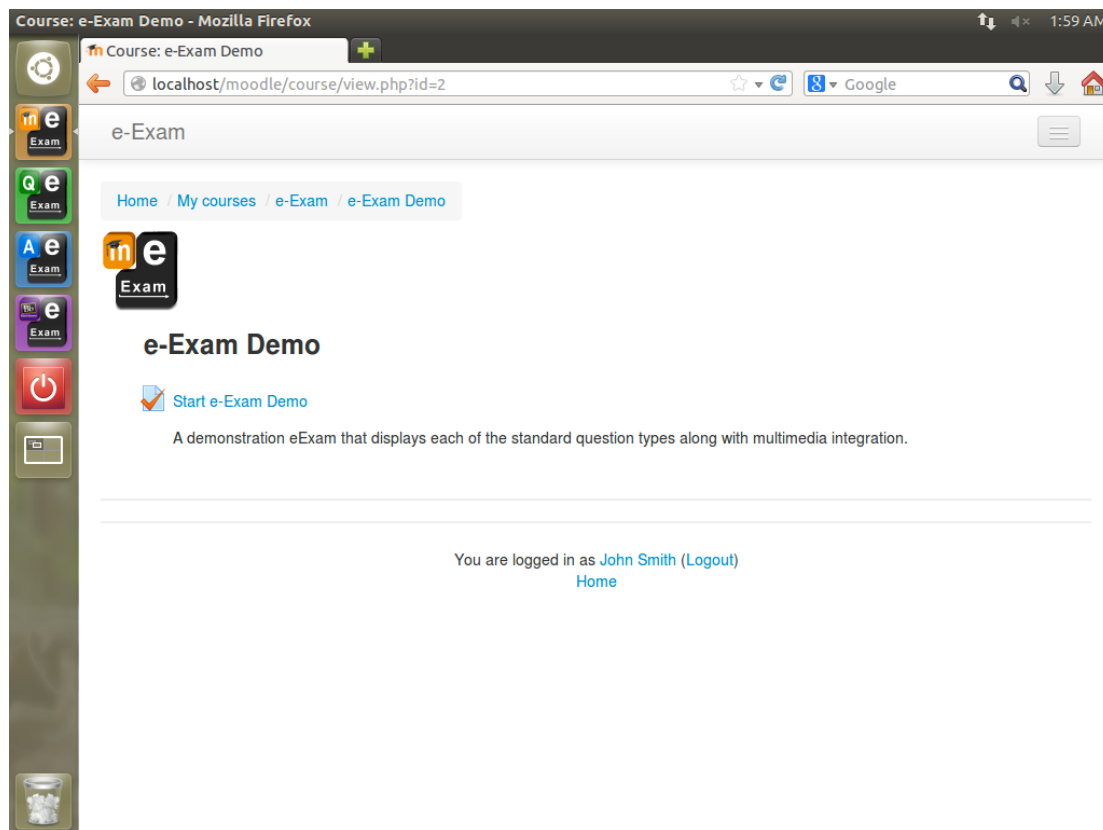


Fill in the demo student account details to login.



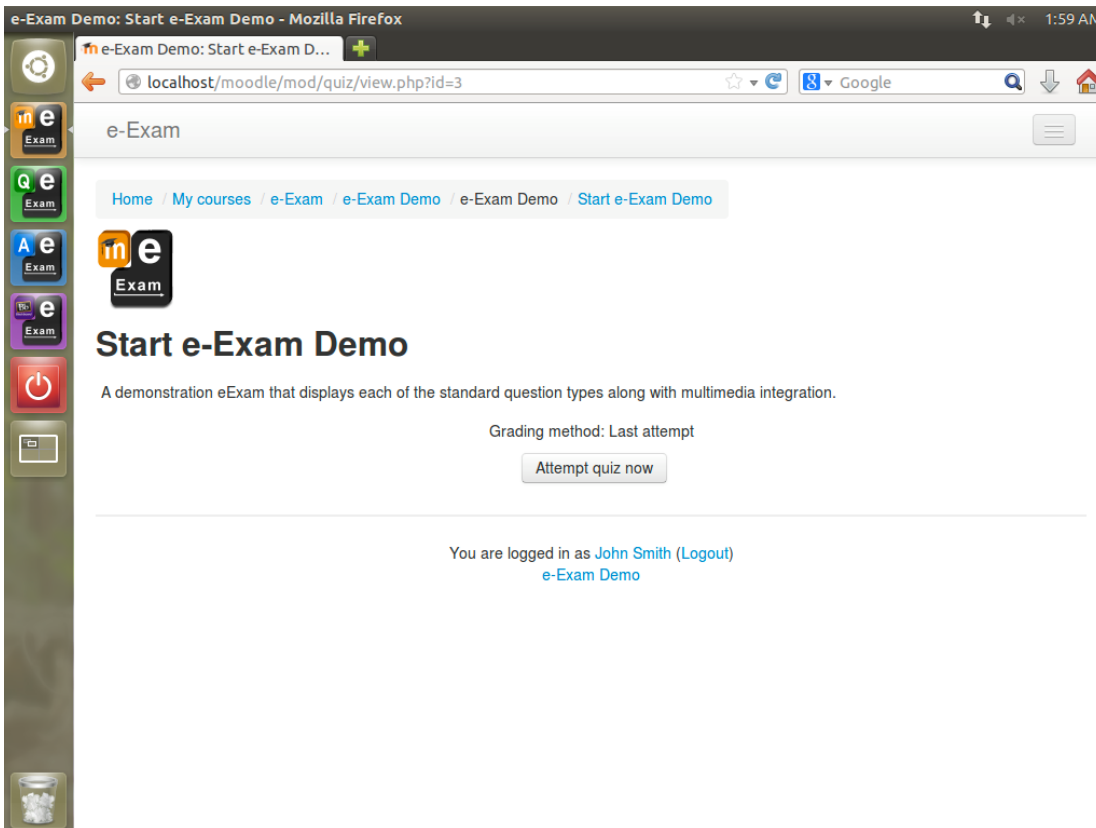
Login required for demo system: Student -> StudentAccount1#

Note: in an exam situation the system must be configured to the 'moodle' exam type. This will cause the e-Exam Starter dialog to appear requesting the student ID number. This in turn ensures the data file for each student can be uniquely identified by their student ID number.



Start the exam

Start the exam (Moodle Quiz in this case)



Click the 'Attempt quiz now' button.

The quiz will begin. There are a number of possible settings that define how the quiz is displayed. These use standard Moodle settings. E.g. all questions on one page, or one-by-one with back tracking permitted or not.

The example below displays all questions on one page.

Start e-Exam Demo - Mozilla Firefox

localhost/moodle/mod/quiz/attempt.php?attempt=2

e-Exam

Home / My courses / e-Exam / e-Exam Demo / e-Exam Demo / Start e-Exam Demo

QUIZ NAVIGATION

John Smith

1 2 3 4 5
6 7 8 9 10 11
12 13 14

Finish attempt ...

Information
Flag question

All questions in this demonstration exam, except for number 7 which an essay question, are computer marked.

This demonstration displays all questions on one page, permits multiple attempts and provides feedback on correct and incorrect responses after the completion of the exam.

These settings can be changed as needed.

Question 1
Not yet answered
Marked out of 1.00
Flag question

Moodle is the most popular LMS in the world today.

Select one:

True
 False

Question 2
Not yet answered
Marked out of 1.00
Flag question

What do you call a question format in which students must uniquely associate a set of prompts with a set of options?

Answer:

Information
Flag question

All questions in this demonstration exam, except for number 7 which an essay question, are computer marked.

This demonstration displays all questions on one page, permits multiple attempts and provides feedback on correct and incorrect responses after the completion of the exam.

These settings can be changed as needed.

Question 1
Not yet answered
Marked out of 1.00
Flag question

Moodle is the most popular LMS in the world today.

Select one:

True
 False

Question 2
Not yet answered
Marked out of 1.00
Flag question

What do you call a question format in which students must uniquely associate a set of prompts with a set of options?

Answer:

Question 3
Not yet answered
Marked out of 1.00
Flag question

What was the version of Ubuntu was released in April 2012?

Answer:

Question 4
Not yet answered
Marked out of 1.00
Flag question

Which of the following computer form factors are NOT supported by the e-exam system?

Select one:

- a. Macbook Air
- b. Tablet (e.g Android or iOS)
- c. Pre-haswell Intel based laptop running Windows or Linux or OSX

Question 5
Not yet answered
Marked out of 1.00
Flag question

Which of the following are possible examination formats with the e-exam system?

Select one or more:

- a. Computer-optional exams where students have a choice between typing their responses into a document or handwriting on paper exam scripts, where the marking is done by humans.
- b. Computer required exams where all students must type their responses into a document or submit electronic files, where questions can involve multimedia prompts, use of simulation tools and software packages but with the majority of marking done by humans.
- c. Computer-required exams where all students must type their responses to essay questions into a document, where questions can involve multimedia prompts, use of simulation tools and software packages and where with the marking is done by computer.
- d. Computer-required exams where all students must type their responses to a range of computer marked question types including, matching, MCQ, TF, numerical, calculated, short text response items where questions can include multimedia prompts, use of simulation tools and software packages.

Question 6
Not yet answered
Marked out of 1.00
Flag question




































Match the correct one-time-boot-key to the model of computer.

ASUS	<input type="text" value="Choose..."/>
Dell (most)	<input type="text" value="Choose..."/>
Gateway (newer)	<input type="text" value="Choose..."/>
Dell Mini 9	<input type="text" value="Choose..."/>
HP/Compaq (newer models)	<input type="text" value="Choose..."/>
Apple Mac (intel based)	<input type="text" value="Choose..."/>

Question 7
Not yet answered
Marked out of 1.00
Flag question

Explain how you can change the boot sequence such that a USB, if present, will be booted before the internal Hard Disk Drive. Include the make and model of the laptop in your answer.

Font family | Font size | Paragraph

B *I* U ABC x₂ x₁ |                                   

Question 8
 Not yet answered
 Marked out of 7.00
 Flag question

For those that can't find the one-time boot key, you can make change to your computer which affect the normal operation of the computer. To do this you need to edit the settings in the so that the USB is positioned at number in the boot priority menu. You will need to press a model specific key to call up the settings area during the early stages of computer start up. The specific instructions for your computer will normally appear briefly after the computer is powered on, so watch carefully or check your computer manufacturer's help information for the correct key to press. If the changes are successfully made then the computer will

- 1. shut down
- 2. go blank
- 3. boot to the e-Exam system
- 4. boot the USB

if the USB stick is correctly inserted prior to

- a. shut down
- b. turning the power on
- c. when restarting

Once loaded, the computer marked question type vesion of the e-Exam system will launch into an onboard LMS called .

Question 9
 Not yet answered
 Marked out of 1.00
 Flag question

What is the surface area of the rectangle in m^2 that has a height of 10.2m and width of 3.9m?

Answer:

Question 10
 Not yet answered
 Marked out of 1.00
 Flag question

What is the area in square meters of a parallelogram with a height of 1.7m and a base length of 3.6m ?

Select one:

- a. 2.52
- b. 6.12
- c. 4.00
- d. 11.12

Question 11
 Not yet answered
 Marked out of 1.00
 Flag question

Calculate the Sin of 8.5 + the cos of 2 x 1.3.

Answer:

Question 12
 Not yet answered
 Marked out of 1.00
 Flag question

How many USB ports are on this side of the laptop?



Answer:

Question 13
Not yet answered
Marked out of 1.00
Flag question

Listen to the audio and choose the appropriate response - what did you hear?

Select one:

- a. The sound of an elephant.
- b. The sound of a bird.
- c. The audio didnt work for me.

Question 14
Not yet answered
Marked out of 1.00
Flag question

Can you play the video and hear the sound?

Select one:

- a. I can play it, but can not hear any sound.
- b. I get nothing
- c. I can play the video and hear the sound.

Next

You are logged in as [John Smith \(Logout\)](#)
[e-Exam Demo](#)

To submit the responses of a section (or whole exam), click the 'next' button.

If this is the end of the exam, an option for the user to 'save and submit' to finalise the exam or 'return to attempt' to continue answering questions will be presented.

3	Answer saved
4	Answer saved
5	Answer saved
6	Answer saved
7	Not yet answered
8	Not yet answered
9	Answer saved
10	Answer saved
11	Answer saved
12	Answer saved
13	Answer saved
14	Answer saved

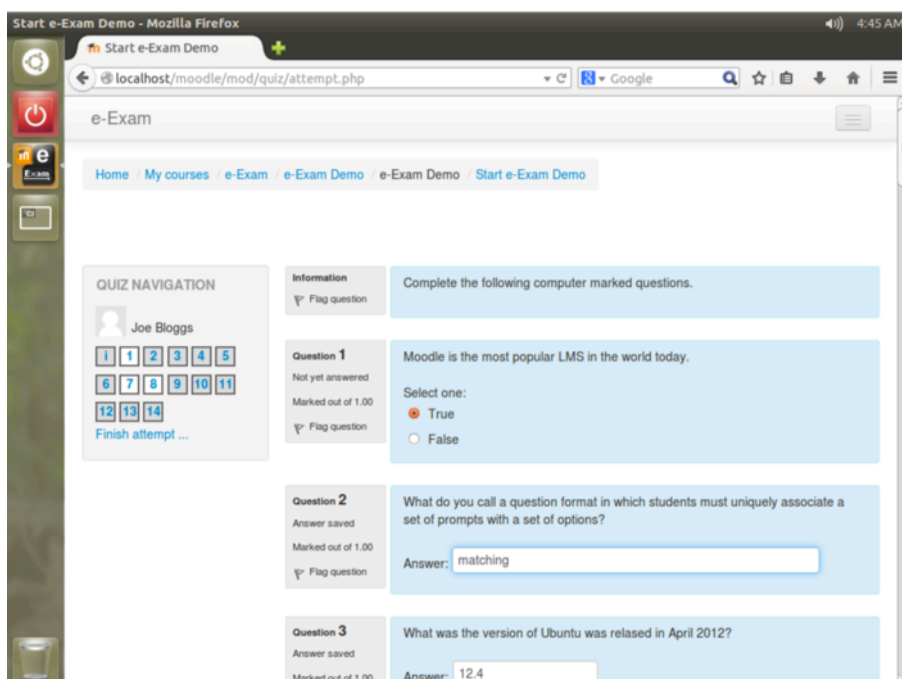
Return to attempt

Submit all and finish

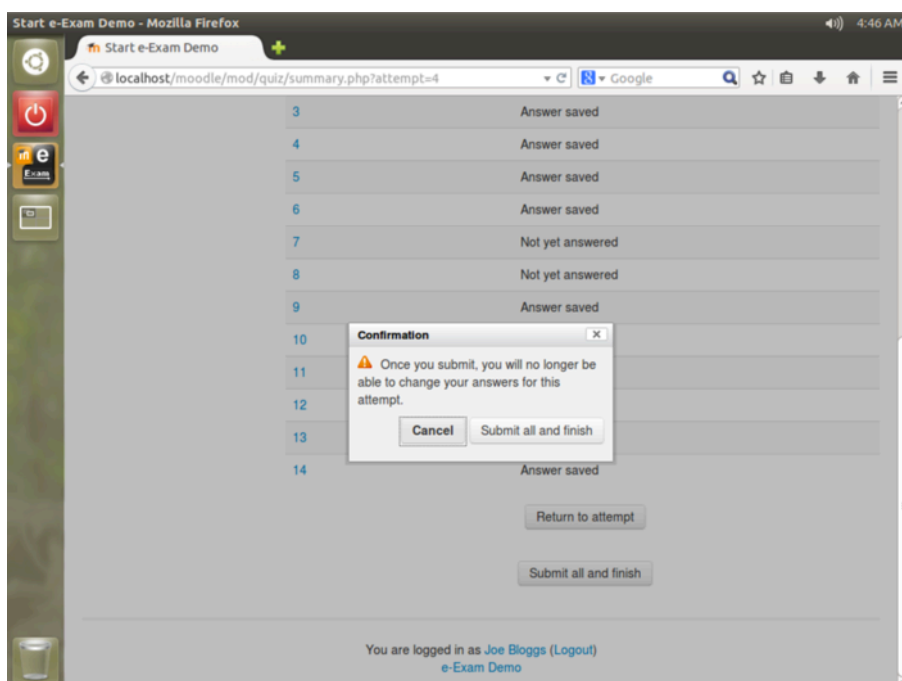
You are logged in as [Joe Bloggs \(Logout\)](#)
[e-Exam Demo](#)

If the user was to click 'return to attempt' the quiz page would be displayed again.

In this case, the quiz navigation block will display an overview of the completed and incomplete questions. The numbered boxes can be clicked to jump to the question.



When the user is ready to finish the quiz, the user should proceed to the 'next' button at the bottom of the page and then on to the 'submit all and finish' button. In this case a confirmation dialog will be presented.



After confirming, a summary of the results may be displayed (if configured).

If so, an overview of the correct, incorrect and missed questions as well as feedback for each response (if configured). Click the 'finish review' link when done.

Start e-Exam Demo - Mozilla Firefox

localhost/moodle/mod/quiz/review.php?attempt=4

e-Exam

Home / My courses / e-Exam / e-Exam Demo / e-Exam Demo / Start e-Exam Demo

QUIZ NAVIGATION

Joe Bloggs

1 2 3 4 5 6 7 8 9 10 11 12 13 14

Finish review

Started on Thursday, 29 May 2014, 6:38 PM

State Finished

Completed on Thursday, 29 May 2014, 6:46 PM

Time taken 7 mins 43 secs

Marks 8.00/20.00

Grade 40.00 out of a maximum of 100.00

Information

Flag question Complete the following computer marked questions.

Question 1

Correct

Mark 1.00 out of 1.00

Flag question Moodle is the most popular LMS in the world today.

Select one:

True ✓

False

Question 14

Correct

Mark 1.00 out of 1.00

Flag question Can you play the video and hear the sound?

Select one:

a. I get nothing

b. I can play it, but can not hear any sound.

c. I can play the video and hear the sound. ✓

Finish review

You are logged in as Joe Bloggs (Logout)

e-Exam Demo

Otherwise the user will be taken to the final summary screen.

The 'summary of attempts' screen may display the final grade achieved (if configured).

Note: If the quiz set set to a single attempt the 're-attempt quiz' button will not be displayed.

e-Exam Demo: Start e-Exam Demo - Mozilla Firefox

localhost/moodle/mod/quiz/view.php?id=4

e-Exam

Home / My courses / e-Exam / e-Exam Demo / e-Exam Demo / Start e-Exam Demo

Start e-Exam Demo

A demonstration eExam that displays each of the standard question types along with multimedia integration.

Grading method: Highest grade

Summary of your previous attempts

Attempt	State	Marks / 20.00	Grade / 100.00	Review
1	Finished Submitted Thursday, 29 May 2014, 6:46 PM	8.00	40.00	Review

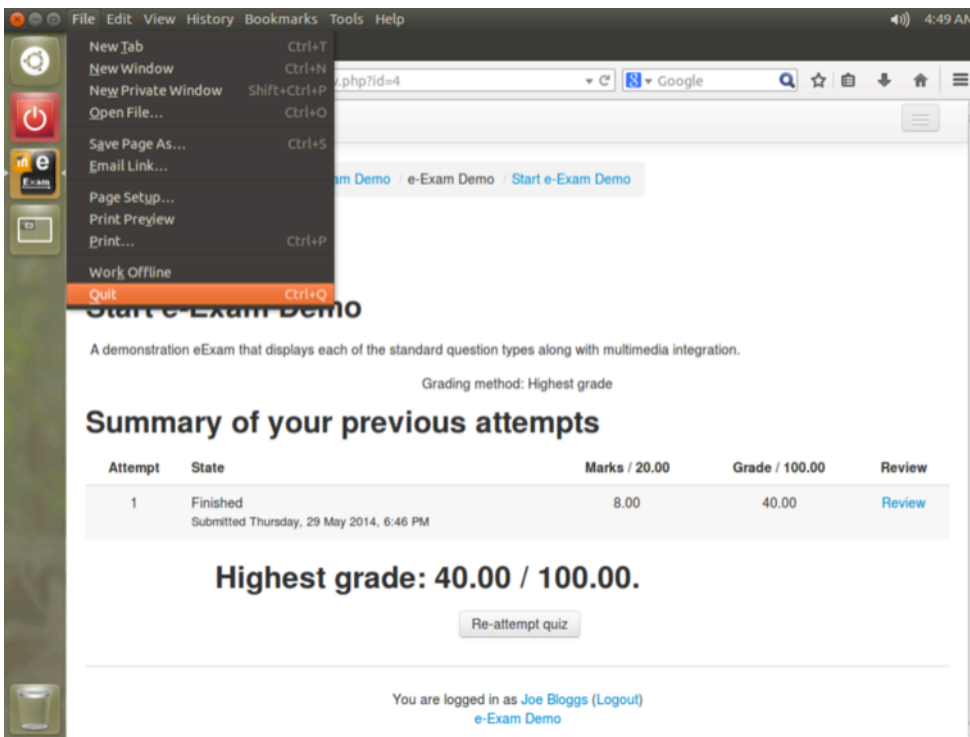
Highest grade: 40.00 / 100.00.

[Re-attempt quiz](#)

You are logged in as Joe Bloggs (Logout)

e-Exam Demo

When finished the user should use File -> Exit to return to the desktop.



Refer to the 'shut down' section (see also 'optional reset feature').

Note: The system will retain student responses upon shutdown.

The USB can also be manually reset by mounting the USB in a second operating system and then deleting the '.eexam.sql' file from the 'db' partition.

To do:

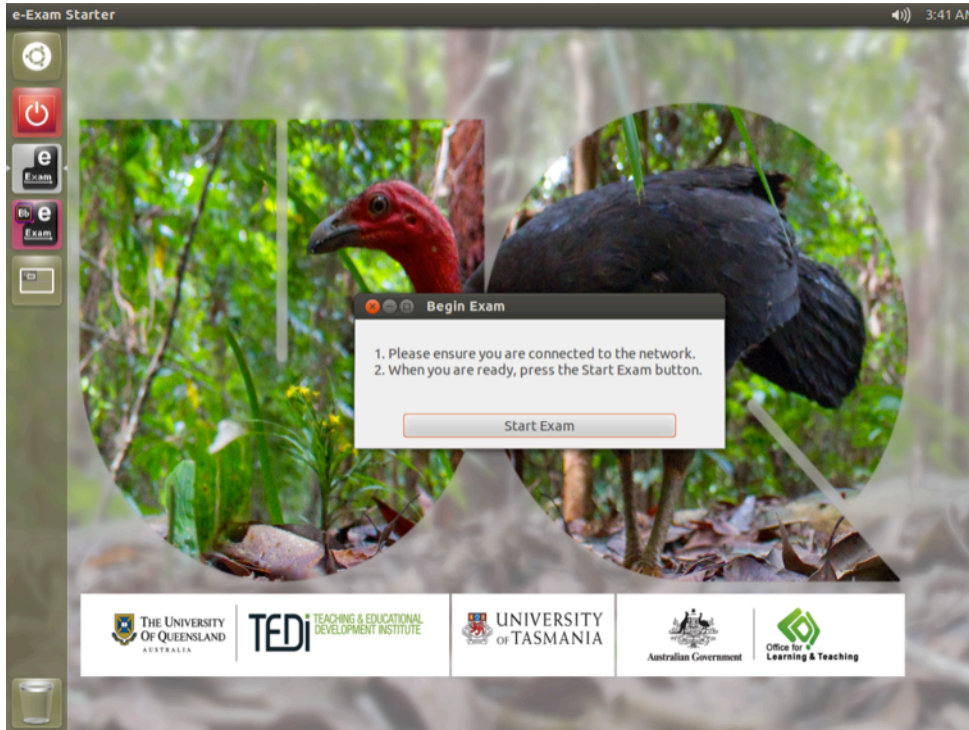
- The responses (contained within the individual database files) will need to be collated after students return the USB sticks.
- A secure transfer via ad-hoc network connections is planned.
- A facility to collate and merge student response sets ready for assessment and review by teachers is planned.

e-Exams using a remote LMS / Institutional LMS (networked)

When configured for 'remote' mode the e-Exam System serves as a restricted gateway to an online LMS. In this case the 'Begin Exam' dialog will appear.

If relying on a wireless network, this mode currently requires the user to manually connect to a relevant network. If on a wired connection, the connection should already be active. In any case the dialog reminds the user to ensure there is an active network connection before they start.

When ready, click the 'start exam' button.



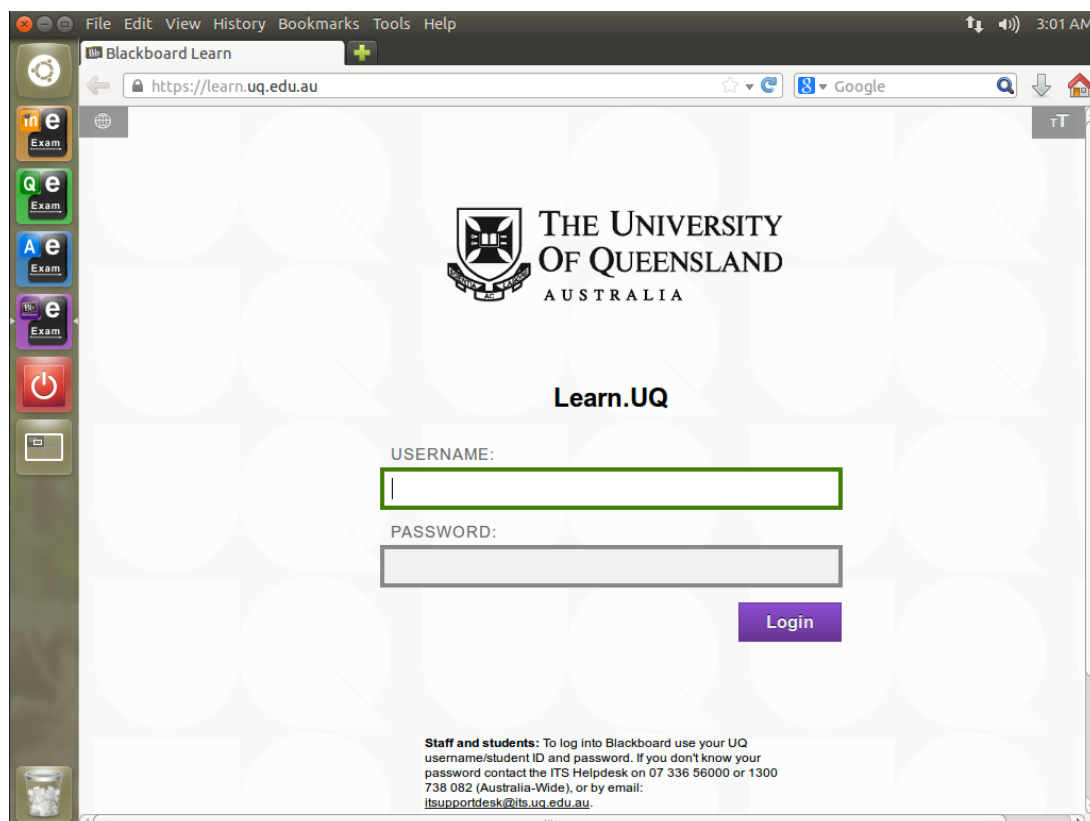
Note: The 'demo' mode also allows connections to a specified remote LMS server (in this case the UQ Blackboard server) and prevents access to other websites/services.

A remote session can be manually started by clicking the 'Blackboard' button on the side bar.



Next, the web browser will open to the web page specified in the configuration file.

In this case the login screen for UQ Blackboard server will appear.



Students would proceed as per normal in the LMS.

Academics would need to set restrictions on the quiz to minimise cheating.

The same approach can be used to establish a restricted client connection to access to any online question engine or LMS.

Network stability needs to be addressed if using this strategy (i.e. as a boot image for lab computers, wired connections or highly redundant wireless).

Recovery

Auto Save for word document exams

The word document exams have an Auto Save feature that occurs each minute to provide a recovery mechanism with minimal loss after a crash.

However there are limitations:

- Auto save will not work to rescue a case where the software application was deliberately exited and the user had clicked 'Discard'.
- The auto save is not a replacement for a proper 'File > Save' so please use this frequently.

Back-up for on-board LMS exams

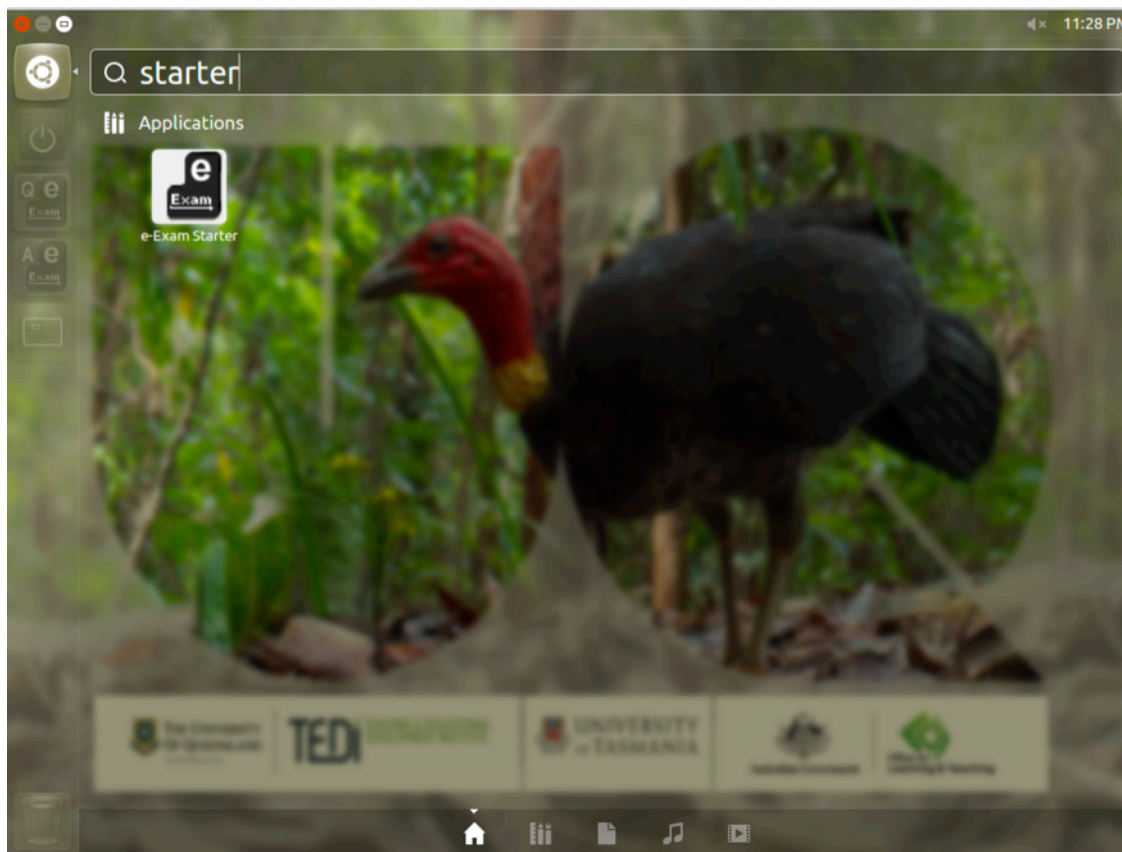
The Moodle database is periodically saved to the USB stick to enable continuation, however it does require the user to have 'submitted' their interim responses to the database. It is important to note that the interim saving of responses in this way does not constitute a final submission. Students must finalise their quiz responses before it is officially handed-in. This is in line with the standard behaviour of Moodle. Setting the quiz to display one question at a time will minimise the chance of loss because each question will be saved when moving onto the next. However, do consider enabling the ability for students to move forward and backwards to any question in the sequence as this will give them confidence to save frequently.

After a software closure

In the event that the word processor or browser is exited early or it crashes it is possible to re-start where you last left off (at the point of the last auto save or full save or database submission).

To bring back the last used question document version you can re-call the 'e-Exam Starter' dialog or open the file from the 'answers' area.

To re-call the 'e-Exam Starter' dialog go to 'Dash Home' (the circle dot button at the top of the side menu bar) and typing in "starter" into the search field.



Press the 'Enter' key or Click on the 'e-Exam Starter' icon. This will bring back the dialog 'e-Exam Starter'.

Alternatively, you can click the 'A' (answers) button on the left menu bar, find the saved answers file (the file with the student id prefixed to it) and double click it to open it.

See the 'continue existing exam' section.

After a full system re-start

In the event of technical faults or low battery it may be necessary to restart or change computers.

The e-Exam System is designed to enable quick recovery mid way through an exam.

The whole recovery procedure should take less time than a toilet break!

The e-Exam System saves all data to the USB stick and this can be used to re-start using a different laptop.

While word document style exams are 'auto saved' each minute this is not a replacement to a proper 'File > Save' so if possible, the latter should always be used before properly shutting down.

Moodle exams are also saved periodically to the USB stick as well as during a graceful shut down (thus always shut down properly if possible.)

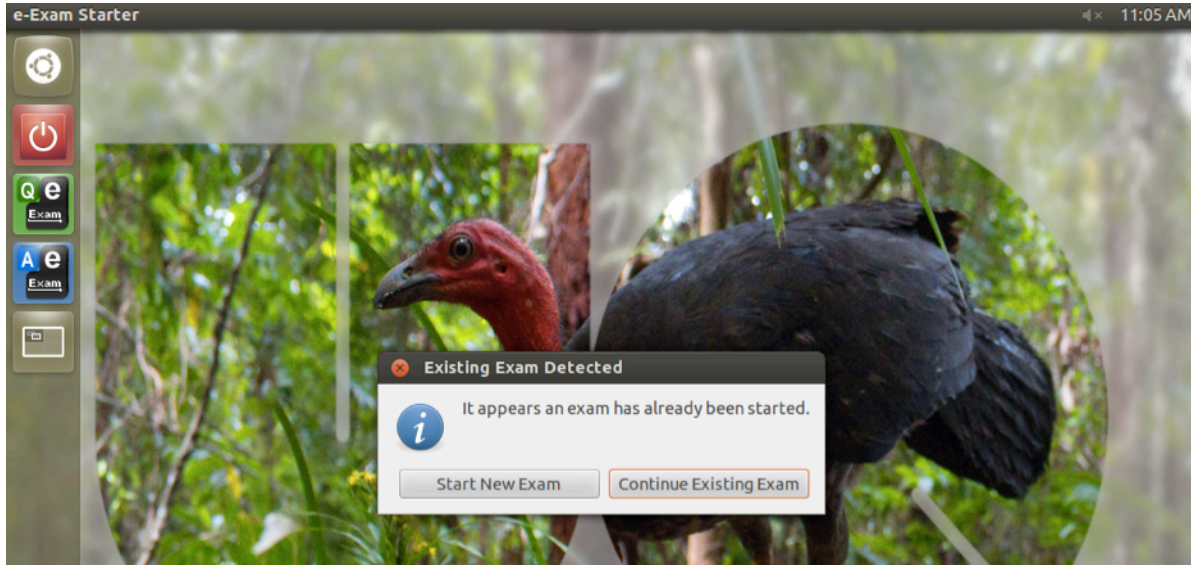
After the computer has powered down, remove the USB stick.

Next use the standard start up procedure to arrive back at the desktop.

Continue to the next section.

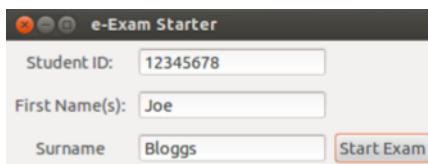
Continue Existing Exam

The 'e-Exam Starter' will detect an existing exam, if present, and ask the user if they want to 'Continue Existing Exam' or 'Start New Exam'.

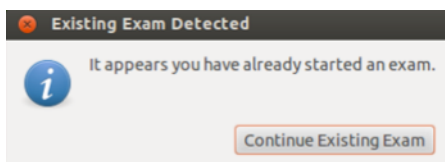


After clicking the 'Continue Existing Exam' button the prior answers document or Moodle quiz will be launched.

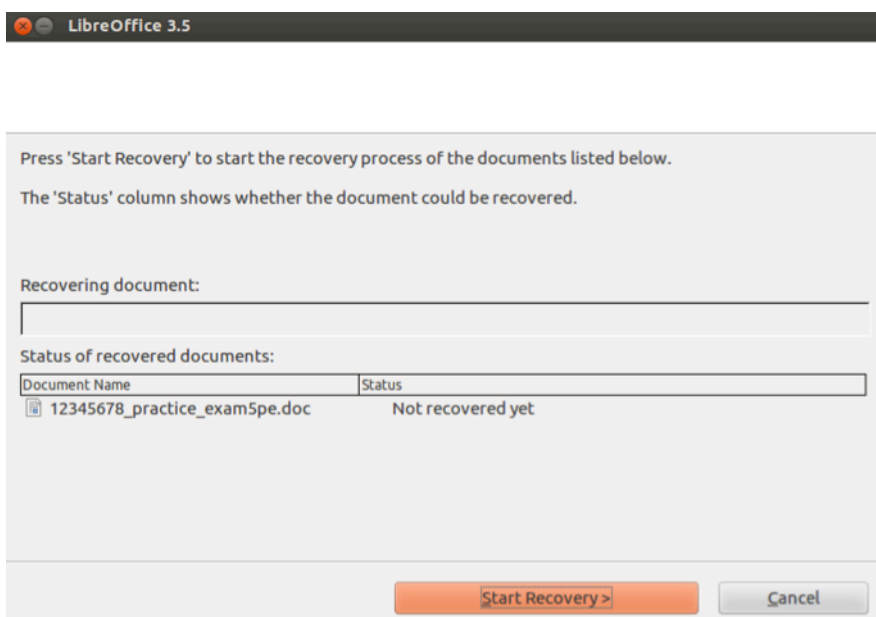
If instead the e-Exam Starter dialog appears, just fill in your same details again.



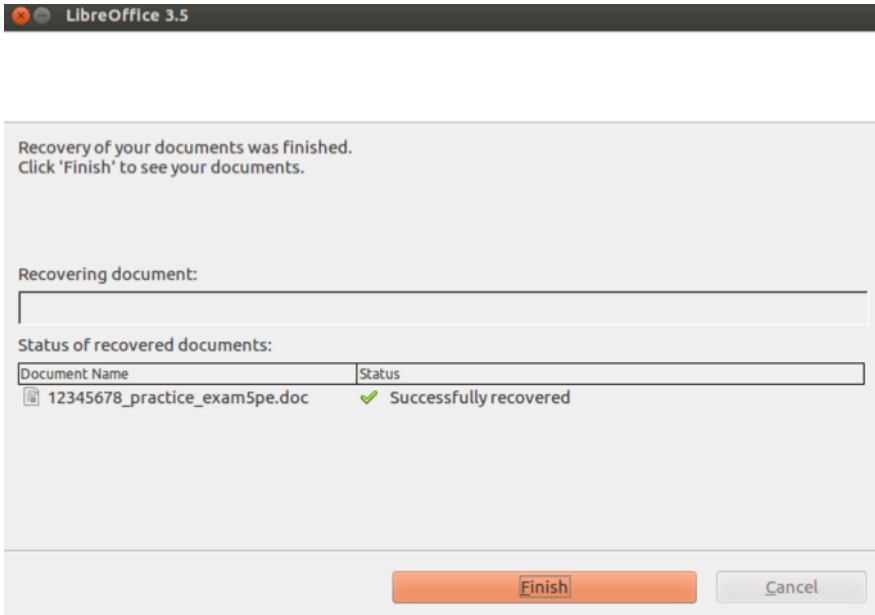
It will then detect a file matching your student ID and the 'Existing Exam Detected' dialog will appear.



In the case of word document exams a recovery dialog may be presented. Click the 'Start Recovery' button.



The dialog will display the result accordingly. Click the 'Finish' button.



The exam answers file will then open allowing the student to continue from the point of the last auto recovery save/full save.

In the case of a 'Moodle' exam, the system will open the web browser and log the student into their previously created account. The student can then continue the Moodle quiz (exam) from the point of the last save.

Shut down

Use the shut down button to gracefully end the exam session.

Demo mode screens are shown below, but the process is the same when configured for a specific exam type (i.e. 'paper' or 'moodle').



Optional reset feature

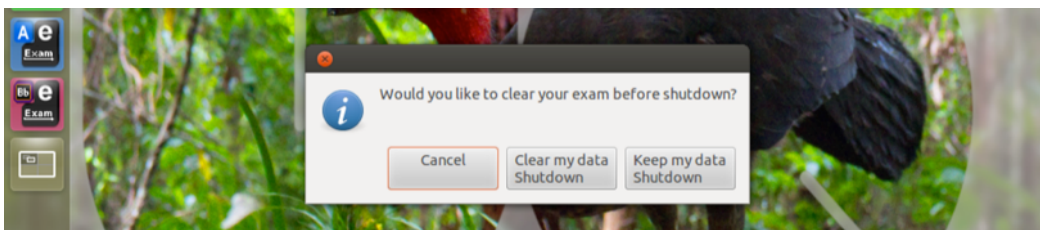
For practice or loan purposes the USB stick can be configured with a special 'reset' feature.

When users are done practicing, they should use the 'clear my data' button to re-set the USB stick ready for the next person to use it.

Important! *This feature should not be made available during a real exam!*

When configured with the 'reset' feature a dialog will appear giving users a choice to clear all their data or keep it. The choices are:

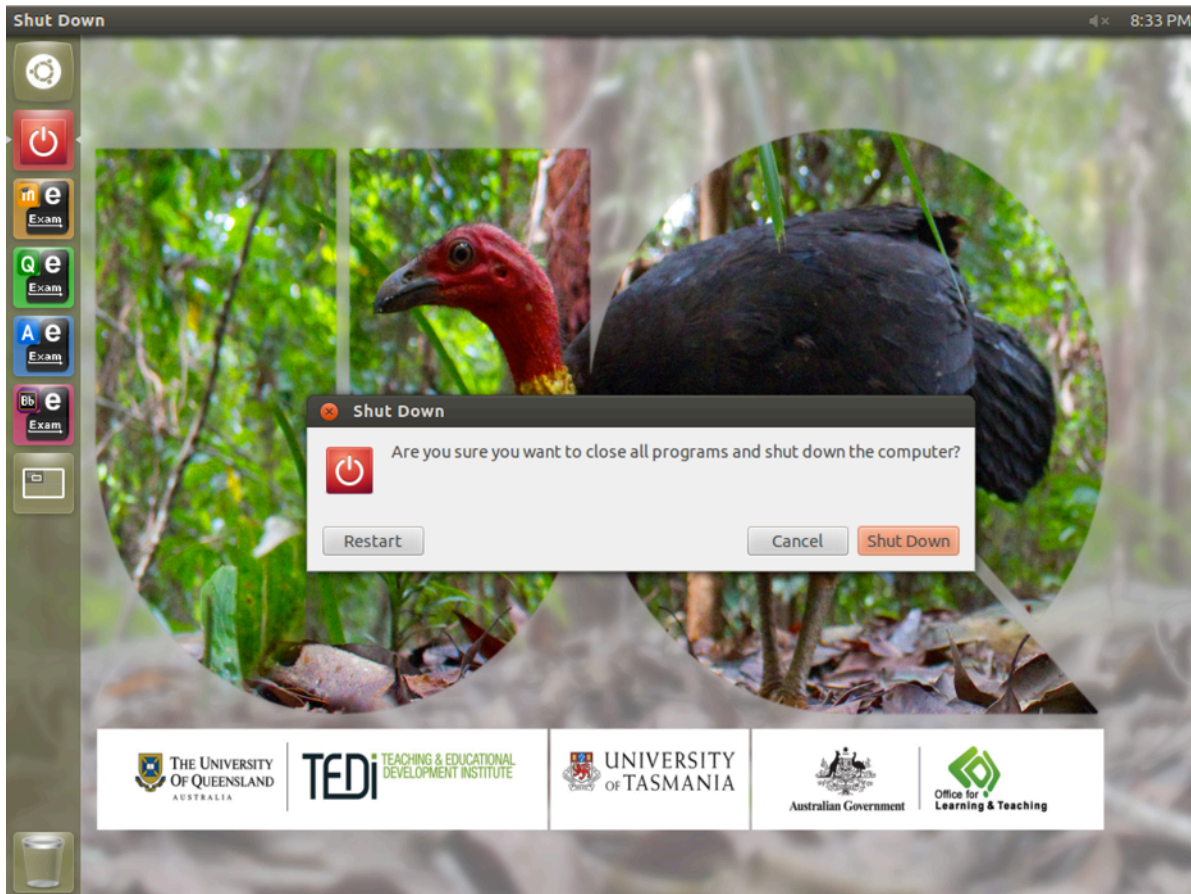
- 'Cancel' to return to the desktop,
- 'Clear my data Shutdown' (this resets the stick to an 'as new' condition – do this before returning it to a library or in a practice session), or
- 'Keep my data Shutdown' (this allows students to practice recovery procedures).



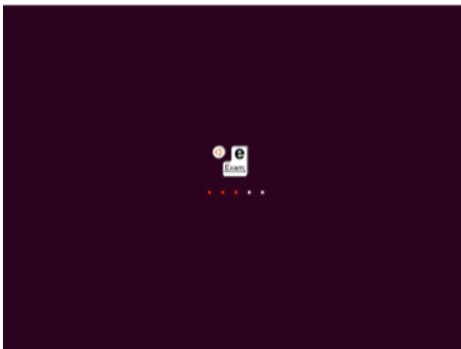
Continue to 'Power off sequence'.

Power off sequence

Confirm the shut down.



Wait until the shut down animation has finished and the screen has gone dark.



Once the screen has gone dark the computer should power down automatically.

Note: On rare occasions the computer may not fully power down. Wait for at least 30 seconds. Then perform a 'hard' power off by holding down the power button on the laptop until the power is turned off.

When the power is off (i.e. Power button/keyboard lights have extinguished), it is then safe to remove the USB stick.

Students can now hand back the USB stick (i.e. to an invigilator in an exam) or return it for others to borrow.