Testing Failures

Document Control

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1.0 Table showing failures

Unit	Failure	Retested?
Video Handler	Switching between full screen and non-full screen causes controls to behave incorrectly	Yes – passed
Video Handler	Play/pause button does not function correctly if video is skipped forwards	Yes – passed
Video Handler	Video could be set such that the size of the video is less than the controls	Yes – passed
Answer Box Handler	Negative character limit throws an error and sets an infinite character limit	Yes – passed
Answer Box Handler	Numerical answers are always incorrect	Yes – passed
Answer Box Handler	Defining a negative amount of marks available causes marks to be deducted from the total	Yes – passed
Audio Handler	Providing a non-existent file name doesn't cause an error, the audio handler is still displayed	Yes – passed
Audio Handler	Time remaining of audio file goes negative because the handler underestimates the length of the file	Yes – refactored code such that instead of displaying time remaining it displays the total time of the audio file in order to be consistent with the video handler
Text Handler	Defining font as a null string causes the program to crash	
Text Handler	Defining a blank line in the xml file will not create a new line in the program	
Image Handler	Defining an online source file does not show image	Yes – passed
Multiple Choice Handler	Defining a negative amount of marks available causes marks to be deducted from total	Yes – negative marks now default to 0.
Graphics Handler	The outline colour of a shape does not correlate to the colour defined in the xml	

GUI	**When resizing the application if it is made smaller the content pane buttons disappear**	**Yes – passed**
Audio Handler	**When returning the coordinates of an object, if controls are visible the y coordinate is zero.**	**Yes – passed**
XML Parser	**Outline thickness is defaulted to 1; parser requirement spreadsheet states that it should default to 0.5**	**Yes – passed**
XML Parser	**Audio object shows progress by default instead of hiding progress by default.**	**Yes - passed**
XML Parser	**No error is thrown if no answers are defined for an answer box, inconsistent with parser requirement spreadsheet**	**Yes – passed**
XML Parser	**If no grade setting information is present an error should be thrown, not currently implemented**	**Yes - passed**
XML writer	**Writer does not correctly write the shading of a graphics object, looks to be as simple as a typo.**	**Yes - passed**
XML Writer	**Any XML written by the XML writer does not define whether an answer box is numerical or not, meaning that this written XML contains an error; meaning it cannot be parsed.**	**Yes – passed**
Audio Handler	**When the end of an audio file is reached the seeker should return to the beginning of the track and the play button become a pause button. If loop is true, the clip should loop.**	**Yes – failed, when loop is true does not behave correctly**
Audio Handler	**If loop is true the file should loop**	**Yes - passed**
Video Handler	**When the end of an audio file is reached the seeker should return to the beginning of the track and the play button become a**	**Yes – passed**

	pause button. If loop is true, the clip should loop.	
Answer Box	When an answer box object is used in the editor program and set to accept a numerical value as input it will not accept any input as valid	Yes – passed
Audio Handler	IF the audio handler cannot load the specified file a call to the dispose method will cause a null pointer exception.	Yes – passed
Video Handler	Video handler does not exit full screen visible	Yes – No workable solution so after consulting wavemedia came to conclusion that the video should ignore visibility commands whilst in full screen
Video Handler	Controls do not resize if video is de-full screened with escape key whilst mouse is over video	Yes – passed
Answer Box	Checking an answer on an empty answer box object awards user with full marks	Yes - passed
Audio Handler	Time remaining is not always correct, often goes negative which obviously should never happen	Yes – Audio handler changed such that it now displays total duration instead of remaining time to keep consistency with video handler
Audio & Video Handler	An error is thrown every time either of these objects appear on a page. The error is to do with CSS stylesheets. Fairly serious error so outlined in more detail in section 2.0.	Yes – failed, seems to be unfixable.
Video Handler	If video is set to fullscreen on a dual monitor device and then the user selects something on the other window, the full screen video will be sent to the back of all open windows.	Yes – No fix seems available; stated that our video handler does not support full screen mode on dual monitor systems.
XML Parser	Currently the parser does not have attributes for audio/video looping or autoplay. These features will	Yes - passed

	be very useful for the demonstration and need to be added to both the writer and parser.	
Multiple Choice Handler	**When a correct answer is awarded with marks the congratulations message given differs from that given to an answer box object, should be consistent.**	**Yes – passed**
Text Handler	**If an empty string is given as the font an error will occur. Instead an error should be added to the error list outputted by the parser.**	**Yes – passed**
XML Parser	**Fairly serious error –** **If an incorrectly formatted error list is parsed, then corrected and parsed again errors will still be displayed. This may be to do with the error list outputted by the parser never being cleared**	**Yes – passed**
LearnEasy	**It is possible to attempt the same question on a page multiple times, increasing the total number of marks earned by the user.**	**Yes – LearnEasy was edited such that once a question has been completed the answer box is greyed out.**
Renderer	**Rich text elements in the XML file are correctly stored into the correct data structures; the renderer however does not use these values and always uses the standard text values. This consequently renders rich text useless until fixed**	**Yes - passed**
Audio Handler	**In order to calculate bounding boxes for the handlers, there must be functions which return the end coordinates of each object. Currently the audio handler y end coordinate is always 0.**	**Yes - passed**
Answer Box	**Currently correct answers are checked using a regex string method, with correct answers being separated by a tilde (~), this is not an effective way of completing this task. Answer boxes**	**Yes – Answer Box object was altered such that it now stores an array list of correct answers**

	should be re-configured such that they use an array list of answer objects, the same way in which the multiple choice handler completes this task.	
XML Writer	When an answer box object is included in a lesson in the editor, the XML writer does not correctly store the position, meaning when the lesson is re-opened the answer box appears in the wrong position.	Yes - passed
TeachEasy	In order to implement different background colours, the Java FX colour picker has been used, however, the custom colour picker does not work as desired.	Yes – It is not possible for us to fix this as it has been fixed in Java FX8, which is only available with java 8 which we cannot use.
TeachEasy	Currently when a page is removed the user is redirected to the first page, they should however be placed on the page before the removed page.	Yes – passed
TeachEasy & LearnEasy	Currently the window titles are not sensible. Should be changed to "TeachEasy" and "LearnEasy".	Yes - passed
Multiple Choice handler	Each time the screen is re-rendered and a multiple choice object is present a blank answer is added to the list of correct answers.	Yes - passed
TeachEasy & LearnEasy	<u>**Very Serious Error.**</u> Currently if the program is used for an extended period of time a Java Heap Space error will be thrown, causing the program to crash.	Yes – passed; the error was being thrown because the program was running out of memory. This was resolved by clearing all array lists.
Graphics Handler	Currently if a graphics object is selected the shading colour will be replaced.	Yes – passed; the shading colour was being overwritten.
Image Handler	The end point of an image does not move with click and drag, this causes the image to stretch.	
Image & Video Handlers	When a new image or video is inserted into a page, it is	No

	stretched to fill the entire screen	
TeachEasy Preview Window	**Currently the default folder dialog appears when preview mode is entered, this is not necessary.**	**Yes – passed**
TeachEasy & LearnEasy	**Currently the size of text changes between TeachEasy and LearnEasy**	**Yes – passed**
Text handler	**Blank spaces are ignored by text handler in rich text fragments, making it impossible to use in any useful way.**	**Yes - passed**
TeachEasy Warning dialog	**If in TeachEasy a user selects file->open and then cancel, a dialog will appear saying XML file not found.**	**No**
TeachEasy & LearnEasy	**Images change position between LearnEasy and TeachEasy**	**Yes - passed**

Figure 1 – A table showing all of the failures encountered during testing

2.0 Additional comments

- Before testing the XML parser was set up such that if an error in an xml file arose an error was added to an error list which is returned by the parser. After testing it became apparent this was not an efficient way of doing things because it was hard to distinguish things that should cause the program to parse the xml file or not. The parser was extended so that it creates two lists, a warning list and an error list. If there is an issue which is critical to the functionality of the program an error will be added to the error list and parsing will cease. If, however, an issue is not fatal a warning is added to a separate list. After parsing has completed these warnings are displayed to the user. An example of a warning is for example the size of an object not being included as this can be defaulted. An error would be for example a source file not being included for an image.
- The colour picker used is provided by Java FX and thus cannot be removed. It will however, cause the program to crash if it is selected due to it opening a new window with application modality which cannot be accessed. This bug was fixed in the release of Java FX8, which can only be used in conjunction with Java 8. It is not possible to use Java FX8 for this project thus this bug cannot be resolved.
- A single line of code was missing from the XML Parser which cleared the errorList after each parse. Because of this any errors would carry through all of the parses done whilst the program was open, regardless of whether they were present in the XML being parsed or not. This has been resolved but serves as an example of why exhaustive testing was necessary for this.
- When a user selects the default folder to load lessons from they have the option to not see this dialog box again. If this checkbox is selected the user should <u>never</u> see the dialog again, regardless of whether the computer is restarted etc. In order to implement this some information has to be written to the computer. For the aid of testing, if you need to make this dialog appear after selecting the checkbox you must uncomment a section of code in the home screen class which will flash the required part of your computer.

- A serious issue which has been encountered regards java memory. None of the array lists were being cleared meaning that every time a page was re-rendered all of the objects were being added to an array list, often objects were added more than once, this caused an exponential effect in the usage of Java Heap Space. This problem was solved by clearing all array lists at regular intervals, if however the issue occurs again it could mean another memory leak elsewhere in the program. This should be reported to both me and Ali immediately.