Software Implementation Report

Iteration 3 Implementation Report

Document Control

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1.0 Introduction

Iteration 3 began with a shift in the way the programming was organised. Two teams were created. One team, led by Specialist Software Developer Daniel Berhe, were focused on implementing the extended feature set of the LearnEasy application in order to bring the application to completion. The remaining personnel formed the second team, led by Lead Software Developer Alistair Jewers, who focused on realising the TeachEasy application and the editor functionalities. By working in this way both applications could be developed in parallel whilst avoiding confusion caused by crossover. Furthermore iteration 3 was the largest iteration, hence splitting the work in this way made it more manageable.

The implementation of the TeachEasy editor application drew attention to several deficiencies in the XML code, especially with regards to the error handling. As a result the XML parsing code received a full rewrite, transitioning to a system based on individual content handler classes for each of the key elements in the XML.

2.0 Target User Stories

- ‘As a teacher, I can create a lesson comprised of a number of discrete pages, each of which I can customise.’
- ‘As a teacher, I can assign marks to exercises on each page where necessary.’

Satisfying these user stories requires the creation of the editor application, and implementing functionality that allows manipulation of objects in the lesson data structure. The use of the word ‘customise’ implies the need to be able to change the properties of objects within pages, as well as the need to be able to add and remove objects. Being able to change the marks properties of different question objects in the data structure would satisfy the second user story.

- ‘As a teacher, I can save lessons I am working on, then access and edit them again at a later date.’

In order to satisfy this user story the TeachEasy application must be integrated with the XML handling system in order to open and save lessons in the digital lesson file format.

- ‘As a teacher, I can pick a page category from a number of pre-defined templates.’

This user story shows a need to implement a system for inserting pages with pre-defined content. Hence the implementation of a template controller class which encapsulates this functionality is planned.

- ‘As a student, I can choose the lesson I want to work on from a selection of lessons provided to me by my teacher(s).’

This user story shows a need for a home page to be displayed when LearnEasy is opened which displays lessons found on the user's computer.

- 'As a student, I am provided with a record detailing my lesson completion and level of achievement, which I can choose to print out.'

This user story shows a need to implement a certificate system within LearnEasy, including print functionality. The data on the certificate should be inserted at run time.

3.0 Features Implemented

Feature	Author(s)	Relevant Classes
LearnEasy Extended Functionality		
Progress Tracking	Daniel Berhe, Sam Raeburn, Jake Ransom	ProgressTracker.java, RunTimeData.java
Home Screen	Daniel Berhe	HomePage.java
Recent File List	Daniel Berhe	HomePage.java
Certificate	Daniel Berhe & Alistair Jewers	CertificateWindow.java, PrintRunnable.java
Marks Tracking	Danield Berhe & Sam Raeburn	ProgressTracker.java, RunTimeData.java
TeachEasy Editor Functionality		
TeachEasy Back End	Alistair Jewers	EditorRuntimeData.java
Object Creation	Alistair Jewers	NewObjectController.java
Object Manipulation	Alistair Jewers	PropertiesPane.java, MouseController.java
Mouse Control	Alistair Jewers	MouseController.java
Page Templates	Calum Armstrong & Penny Nicole	TemplateController.java
XML Integration	Alistair Jewers	EditorRuntimeData.java, XMLErrorWindow.java
Preview Window	Alistair Jewers	PreviewWindow.java
Login Credential Checking	Lewis Thresh & Alistair Jewers	LoginChecker.java
LearnEasy & TeachEasy Application Final GUI Code		
LearnEasy GUI	Lewis Thresh & Sam Hall	LearnEasyClient.java
TeachEasy GUI	Lewis Thresh	TeachEasyClient.java
Login GUIs	Lewis Thresh	LELogin.java, TELogin.java
XML Rewrite		

Content Handler System	Alistair Jewers	(*)XMLHandler.java, XMLParser.java

Figure 1 – Features implemented in iteration 3

4.0 Timing

The software implementation portion of Iteration 3 took place between 19th April and 31st May 2015.This iteration started a few days behind schedule, mainly due to the increased workload of team members at this time. Refactoring and clean-up of code continued until 3rd June. Coding was therefore completed just under a week later than the ideal time. The overrun was likely in part due to an underestimation of the other time commitments of the team members, and in part due to the number of bugs generated by the complexity of the editor application.

5.0 Review

The implementation portion of iteration 3 led to a product that met the requirements of the functional specification. Both applications were also demonstrated successfully during the sales presentation. Therefore iteration 3 can be considered a success. The demonstration included using the two applications in conjunction, with each operating on the same digital lesson file in turn.

6.0 Work Carried Forward

No work was carried forward beyond iteration 3, as this marks the end of the project.