MR CAT

Multi-page Randomized Code Assisted Testing

Vision Document

Version: 1.0

# 1.                  Introduction

# *MR CAT (Multi-page Randomized Code-Assisted Testing) is the optimal solution to ease the tribulations of exam administration and grading. It enables the user to create random orderings of questions to reduce the affects of academic dishonesty. MR CAT also assists with the grading process, as it capable of scoring multiple-choice questions and provides a means for the instructor to easily input feedback for other types of questions.*

# 2.                  Positioning

## 2.1               Problem Statement

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| --- | --- |
| The problem of | Time-consuming exam administration/grading and academic dishonesty |
| affects | Academic institutions/instructors with large class sizes as well as its students |
| the impact of which is | A longer delay in exam performance feedback, fewer opportunities for examination and instructor exhaustion/burnout due to grading |
| a successful solution would be | An exam administration suite that generates random exam layouts for each student to prevent academic dishonesty, automates a large amount of the grading process, and creates personalized feedback for students on exam results. |

## 2.2               Product Position Statement

|  |  |
| --- | --- |
| For | Instructors |
| Who | Have large classes and are overwhelmed by the amount of work exam administration entails |
| MR CAT | is an exam creation and grading solution |
| That | Relieves the instructor’s worry of academic dishonesty while reducing the time involved with grading and providing feedback |
| Unlike | Costly Xerox Remark Software |
| Our product | Provides a more affordable, personalized solution and allows for inline multiple choice responses without the added hassle of an answer sheet. |

# 3.                  Stakeholder Descriptions

## 3.1               Stakeholder Summary

| **Name** | **Description** | **Responsibilities** |
| --- | --- | --- |
| Client | Clinton Rogers | The client will describe the intended usage of the software to our team. They will deliver timely responses to inquiries about the design of the software. The client will provide opportunities to test the software using at least one actual exam/quiz. The client will offer feedback on software performance whenever a functional build is provided for testing purposes. |

## 3.2               User Environment

The software will be run on a personal computer with an indeterminate operating system. Data will be stored and manipulated locally. The software will be utilized by individuals to create exams and, later, grade them. Users will spend a couple hours creating an exam by inputting questions into the software. Then, a document will be created and printed by the user. Once the exam is completed, the software will take an input file and process it so that multiple choice questions are graded while prompting the user to score other questions. As this can be a time-consuming activity, progress will be saved so it can be continued later. The software will need to interact with Adobe Acrobat files to process as input.

# 4.                  Product Overview

## 4.1               Product Perspective

Our product will be a self-contained solution, requiring the hardware support of any scanning device. It will be operated locally on personal computers by any system with the Java runtime environment.

## 4.2               Assumptions and Dependencies

Assumptions:

* User will always be able to scan exams digitally
* Students will be capable of filling in answers correctly
* Available technology will provide sufficient accuracy in scoring responses with reasonable runtimes
* Exam questions are created completely independently and in no way have a required ordering
* All exam sheets will be required in order to obtain a full, accurate exam result. Missing pages result in loss of credit for exam grade.
* Printers will be capable of creating documents that are clear and accurate enough to be scanned accurately

Dependencies

* Adobe Acrobat file format support is required for current and future versions to facilitate scanned input
* If direct scanning is included, driver support will be required for the scanning device(s)
* If utilizing e-mail assisted student feedback, internet access is requires as well as e-mail protocol.

## 4.3               Needs and Features

|  |  |  |  |
| --- | --- | --- | --- |
| **Need** | **Priority** | **Features** | **Planned Release** |
| Random exam generation | 4 | Random exams for each student | February 2015 |
| Student list import | 3 | Importing of lists of students from other sources, addition/deletion/modification of existing student roster | March 2015 |
| Exam creation | 5 | Allow text-only questions to be created, modified, deleted and grouped for examinations. Includes the creation of courses and applicable student rosters. | December 2014 |
| Multiple choice response scoring | 5 | Allows answering sheets to be scored with heavy automation from the software, soliciting user feedback when necessary. | December 2014 |
| Score management | 2 | Record and track scores on a per-student basis. Allow instructor to override or scale results. | May 2015 |
| Extended formatting for questions and answers | 3 | Allows questions and answers to be formatted with a wider range of text options. Also allows for the usage of externally created diagrams and images. | March 2015 |
| Non-multiple choice assisted scoring | 3 | Allows the instructors to use software to manually grade and provide feedback on open-ended questions. | April 2015 |
| Personalized exams | 1 | Randomized exams are optionally assignable to students to ensure each has their own copy of the exam. | May 2015 |
| Student feedback | 3 | Students will be provided a summary of their wrong answers with feedback on the correct choices. Optionally, students may be e-mailed with this information. | February 2015 |
| Version compatibility | 4 | All versions of the software must be able to work with prior versions’ exams both in terms of editing and scoring. | May 2015 |

## 4.4               Alternatives and Competition

Xerox Remark Software is a full scantron-like automated software scoring suite, but it extremely high in cost and requires a bubble-style answer sheet. The alternatives would include grading exams completely manually, which is very time-consuming.

# 5.                  Other Product Requirements

The product will be required to score multiple-choice responses correctly with at least 99% accuracy. The storage of exam questions and individualized question orders must be persistent. A user manual will be provided upon the release of the software that will document core features of the software. We will be responsible for installing the software for the client. Product must persist compatibility between all prior versions. Additionally, the user must be able to independently upgrade the software without additional assistance.