SMARTron Software Requirements Specification

Mission Statement: Creating a headless scantron analyzer that comes with a companion website which allows managing exams that have previously been scanned.

1.1 Purpose

The purpose of this document is to give a detailed description of the requirements for the SMARTron software. It will illustrate the purpose and complete specifications for the development of the system. It will also explain the constraints, interfaces and interactions with other external applications. This document is primarily intended to be proposed to a stakeholder for its approval and a reference for developing the first version of the system for the development team.

1.2 Scope

SMARTron will be an automatic grading program maintaining compatibility with existing 200-answer Scantron answer sheets. The program will allow the user to maintain a familiar workflow of scanning answer sheets and receiving an email containing the results. This will be accomplished by a headless answer sheet analysis program that receives emails containing an answer key and student answer sheets from any scanner, and emails results to the instructor.

SMARTron will also include a web app providing benefits over the current Scantron workflow. Scanned exams are associated with an instructor's LakerNet ID, and they can log in to the web app to view and edit scanned exams. The web app will provide functionality to make corrections to answer keys and rename exams. Users will also have the option to create an answer key in-app and generate a custom answer sheet compatible with the analysis program.

1.3 Definitions

Table 1 - Definitions and Abbreviations

Term (What is being defined)	Definition (The expounded definition of the term)
User	An individual who utilizes the system
Scantron sheet	A paper form that contains fields for answering multiple choice questions with a fixed layout
PC	Personal Computer

1.4 References

1.5 Overview

3.1 External interface requirements:

This section describes the hardware and software interfaces that the

3.1.1 User interfaces:

The user will interact with a physical scantron sheet and a web-based client that allows for re-execution of the program with different inputs.

3.1.2 Hardware interfaces:

The user will have access to and utilize a faculty scanner. There he will be able to scan all scantron sheets including the answer key without leaving his building. The user's PC is where he will interact with the email containing all data and statistics from the test results.

3.1.3 Software interfaces:

The user will be able to utilize his existing Oswego email, which is a Google account, to initiate scanning the hard copy scantrons as well as receive the test results upon completion of the analysis by the program. The user will also be interacting with the SMARTron software in order to access results, create and edit answer keys. Microsoft Excel is the other

software that the user wants to synchronize with SMARTron. Once the results have been emailed to the user, they should have the ability to upload/copy the results into a current Excel spreadsheet.

3.1.4 Communications interfaces:

Email

Scanner

3.2 Functional requirements

3.2.1 Mode 1

3.2.1.1 Functional requirement 1.1

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3.2.1.*n* Functional requirement 1.*n*

3.2.2 Mode 2 .

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3.2.*m* Mode *m*

3.2.*m.*1 Functional requirement *m.*1

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3.2.*m.n* Functional requirement *m.n*

3.3 Performance requirements

The program must email results to the user

The program should run in less than a few minutes

The program must have accurate results

3.4 Design constraints

Must analyse NYS scantron sheet

Must provide per question analysis
Must provide per student analysis
Must use email client to communicate with the user

3.5 Software system attributes
Headless

3.6 Other requirements