

# Software Requirements Specification

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## Excel Grading System

**NSG Software**

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### Requirements Specification

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## **Section 1: Product Overview and Summary**

The computer applications courses at Siena College require a lot of attentive grading for the instructors. As many of us know, most business students are required to take this course as are many other students. This leads to a lot of tedious grading for our clients, Dr. Hunter and Ms. Cotler. They have requested that we design and implement a program that will automatically grade the lab reports that students submit electronically.

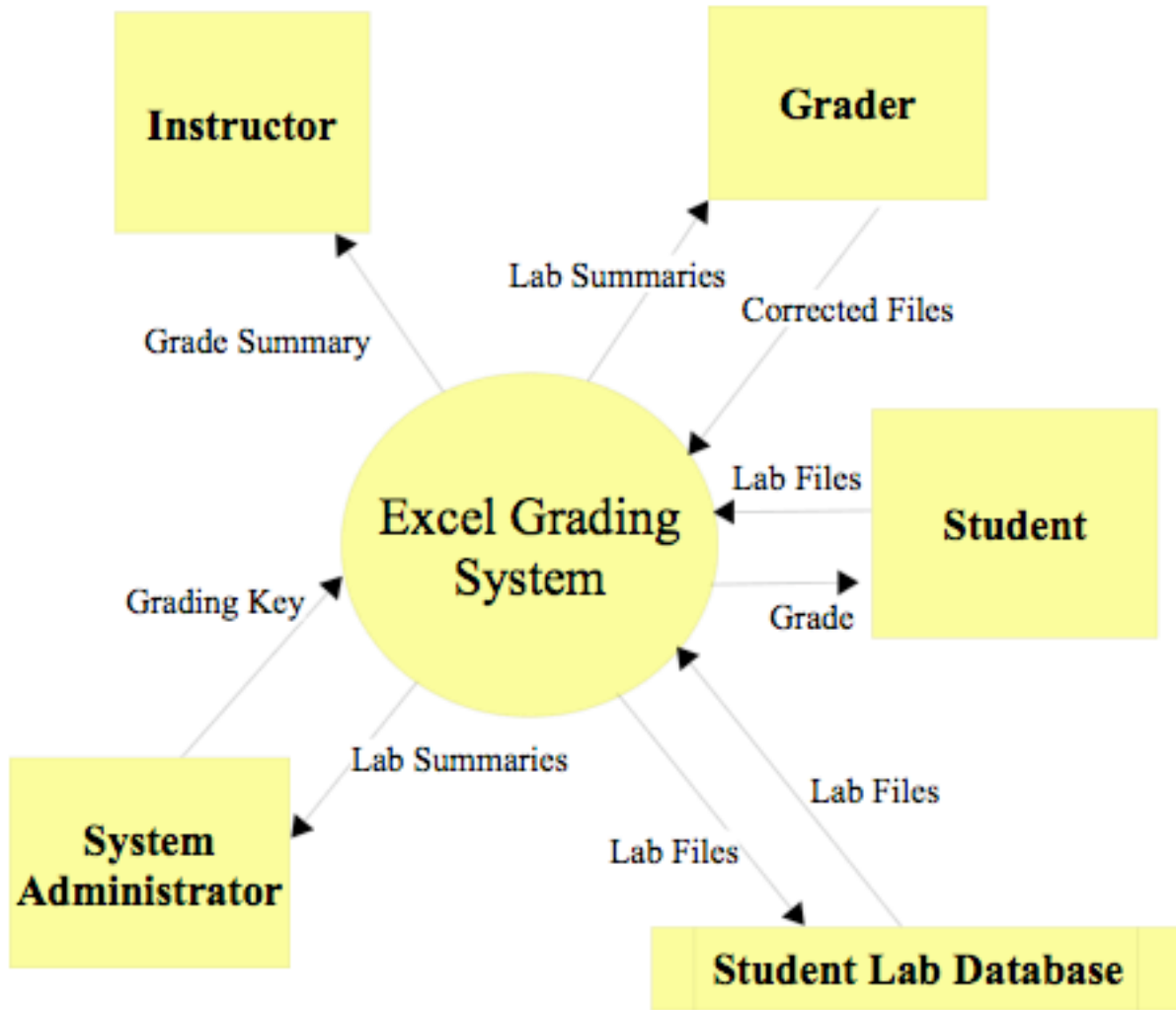
The purpose of this software is to allow easy grading for our clients. The instructor will submit a key for the lab which is to be graded and the program will run through and check all of the requirements the lab instructor has specified. A report will be sent to the instructor breaking down the grades and the questions that many students answered incorrectly. This will allow for the instructor to see questions that troubled the students and how many people answered them correctly or incorrectly. It will also save a great amount of time and will be a much more efficient way of grading.

## **Section 2: Development, Operating and Maintenance Requirements**

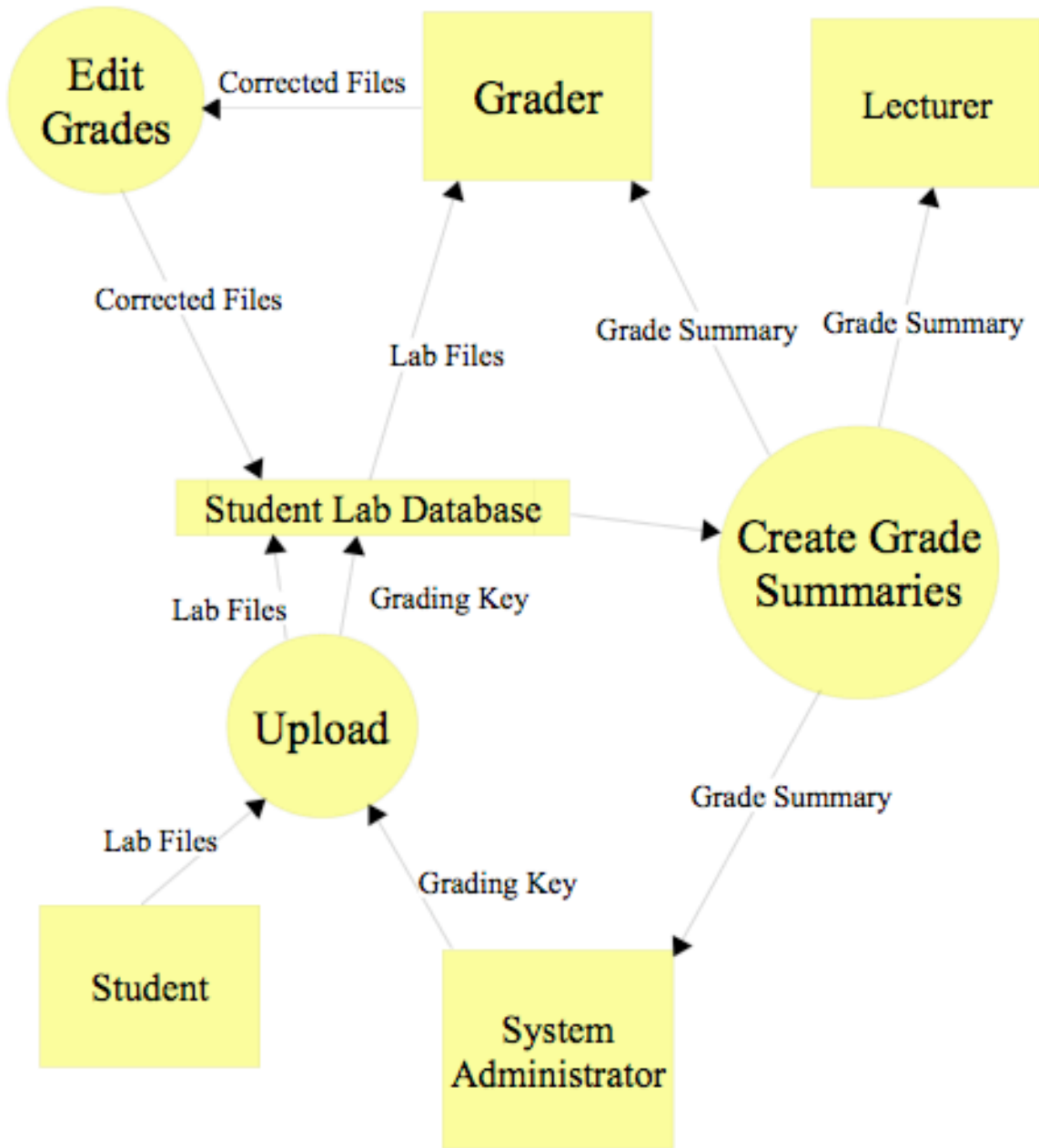
The Excel Grading System will be developed by NSG Software and with our clients, Dr. Hunter and Ms. Cotler. We will be developing this software on the Siena College campus, specifically in the Software Engineering Lab. We have two workstations set up specifically for the development and designing of the Excel Grading Software. Team members will be developing mock-ups and user scenarios which will be uploaded to the server through WinSCP. The screen shots will then display to our clients how we intend on designing the software. The software will require minimum maintenance; the only things that may need to be kept up are new requests from our clients.

Section 3: External Interfaces and Data Flow Diagrams

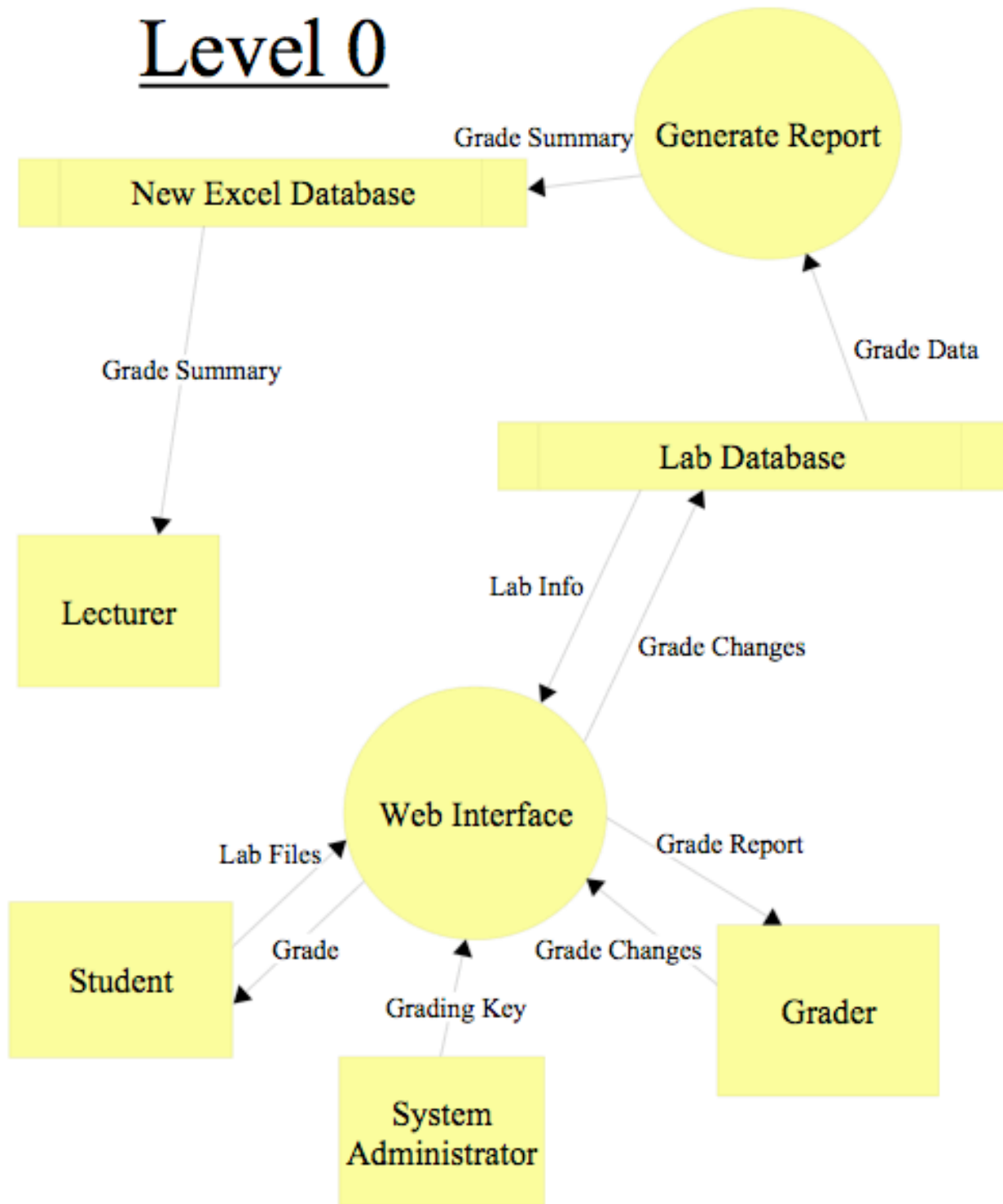
# Context Diagram



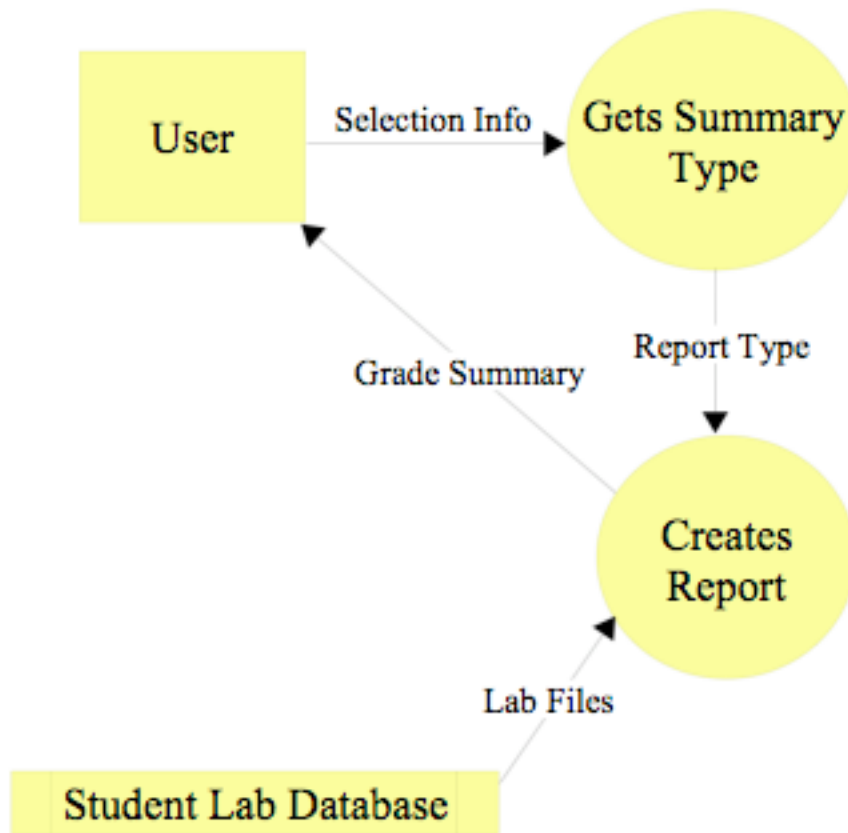
# Web Interface



# Level 0



# Create Grade Summaries



#### **Section 4: Function Requirements**

- Excel grading application is web-based.
- Main page displays a common login box.
- Students
  - ★ After logging in students will be able to choose their lab number from a dropdown menu.
  - ★ Each file needed for that lab will then be displayed.
  - ★ There will be a browse button to find the required file.
  - ★ There will be one submit button at the bottom of the screen to upload all of the selected files.
- Grader (Dr. Scott Hunter)
  - ★ After logging in, the grader will have a dropdown menu to choose the lab number.
  - ★ There will be a function to display the grades for all students, all students in a specified lab or all students in a specified lecture.
  - ★ There will be a function to override the grading of a specified question for all labs or one specified lab.
  - ★ There will be a function for a class summary which will include class-wide information on individual questions and overall grades.
  - ★ There will be a function to download all or individual labs.
- Administrator (Ms. Jami Cotler)
  - ★ The Admin will have access to all of the same summaries as the grader.
  - ★ There will be a function to upload the answer key(s) for individual labs.

#### **Section 5: Performance Requirements**

- The Excel Grading System will run on both Windows and Macintosh systems.
- The Excel Grading System will be accessible through Internet Explorer 6.0 and Firefox 1.0.7.
- The Excel Grading System will be designed to look best with a resolution of 1,024 by 768.

#### **Section 6: Exception Handling**

Since the UI itself will be all web based, the user should not be able to pick an invalid option. In the case of the services driving the application should fail, a page should be displayed notifying the user of the error, as well as a report sent to the administrator. This will be verified by our team through extensive testing.

#### **Section 7: Early Subsets and Implementation Priorities**

Our system will feature the following properties:

- A web-based application.
- Viewable in the most common browsers.
- Useable in the most common operating systems.



- Designed especially for 1,024 by 768 pixel resolution.

## **Section 8: Foreseeable Modifications**

Future Development may include the implementation of a Microsoft Word reader plug-in. Also, if newer versions of popular web browser software are released, the software may have to be modified to be able to handle these newer browsers.

## **Section 9: Acceptance Criteria**

The web site will contain multiple layered sections. Each section will build upon the previous section, giving additional privileges to each additional user level. The user levels are as follows:

Student  
Lecturer  
Grader  
Administrator

The Student level is the most basic level of the application. The student is restricted to uploading files. They are not allowed to view grades or any other part of the grading interface.

The Lecturer interface is another level above the student level, able to see student submitted files and the grades given on those files. The lecturer is unable however to modify these grades, or review the files themselves.

The Grader level is one step above the lecturer, given all the abilities of the lecturer along with the ability to modify the grade given. The grader can review the problems marked suspicious by the grading program, and adjust a student's grade accordingly.

The Administrator has all the abilities that a grader has, as well as being able to administer courses and create or remove accounts. The administrator has all the abilities of all the levels, and can do routine maintenance on the underlying database system and the filesystem/filestores.

## **Section 10: Design Hints and Guidelines**

The Excel Grading system will use a web interface in which students will be able to upload their lab files to their workstation. Students will be restricted to uploading files only; they will not have access to view their grades or anyone else's. The lecturer, system administrator and grader will have access to other features that the students will not. The grade reports generated from the software will be stored in our system and will be available to the lecturer, system administrator and the grader.

## Section 11: Cross Reference Index

This section will be available once we have completed the Data Flow Diagrams in the design phase of the project.

## Section 12: Glossary of Terms

**Data Flow Diagram** - A representation of the functional decomposition of a system.

**Database** - The organization of all the labs into a structure that is simplest to the faculty members and System Administrator.

**Gantt Chart** - A chart that depicts progress in relation to time, often used in planning and tracking a project.

**Internet** - An interconnected system of networks that connects computers around the world.

**Lab Reports** - A summary of each lab that has been graded for each student who has submitted a lab.

**Software** - Written programs or procedures or rules and associated documentation pertaining to the operation of a computer system and that are stored in read/write memory.

**UI (User Interface)** - This is the interface that each faculty member, student, and system administrator will be using on the website to wither grade or submit the labs.

## Section 13: Gantt Chart

