**Part 1: Stakeholder & Goals Identification**

1. **Identify the Stakeholders:**

* Dr. Howell
* Students in Data Structures and Algorithms
* The Developer Team

**2. List the primary goals of the system from the perspective of each stakeholder:**

* Dr. Howell
* Have an app that allows a single student to manage their grades in their class.
* Students in Data Structures and Algorithms
* See current grades and calculate grades depending on future assignments.
* Enter, update, and view past assignments.
* The Developer Team
* Create a maintainable and updatable application that meets user needs.

**Part 2: Functional Requirements**

**1. Develop a list of functional requirements the system must support:**

R1: The system shall allow the student to input assignment grades.

R1.1: The system shall allow the student to input the assignment title.

R1.2: The system shall allow the student to input the total possible points for the

assignment.

R1.3: The system shall allow the student to input the total earned points for each

assignment.

R2: The system shall calculate the overall class grade based on input assignment grades.

R2.1: The system shall initially round up to the next whole number for decimal

number grades.

R2.2: The system shall allow the rounding specification to be changed based on

the teacher’s preference.

R3: The systems shall allow the student to view the class grade.

R3.1: The student shall be able to view their class letter grade.

R3.2: The student shall be able to view their class grade percentage.

R3.3: The system shall be able to view their assignment grades up to the tenth

decimal place.

R4: The system shall allow the student to predict the needed future assignment grades.

R4.1: The system shall allow the student to input a desired class grade.

R4.2: The system shall allow the student to input a future assignment’s total

points value.

R4.3: The system shall calculate the needed assignment grade based on the

Students’ desired class grade.

R5: The systems shall store the students’ previous assignment grades.

R5.1: The grades shall be stored in a file.

R5.2: The grades shall be retrievable after closing and reopening the

application.

R5.3: The system shall display its past grades.

R6: The system shall recalculate the overall class grade based on the new assignment

grade.

R7: The system shall allow the student to view past assignments in chronological order.

R8: The system shall allow the student to update previously entered assignment grades.

R8.1: The system shall verify the student’s change before implementing the

updated grade.

R9: The system shall be able to recalculate the class grade based on the updated

assignment grade.

**2. Categorize your requirements.**

Priority 1:

R1, R2, R3, R5, R9

Priority 2:

R4  
 Priority 3:

R6, R8

Priority 4:

R7

**Part 3: Non-Functional Requirements**

**1. Specify non-functional requirements:**

R1: The system shall support one student’s grades

R2: The system shall support at least 100 assignments.

R3: The system shall calculate the current and future grades within 10 seconds.

R4: The system shall be run on Windows, macOS, and Linux operating systems.

R5: The system shall allow development updates and changes to the system.

**2. Prioritize which non-functional requirements are most important for this system.**

Priority 1:

R1, R2

Priority 2:

R3, R4, R5

**Part 4: Requirements Validation**

**1. Identify potential ambiguities or open questions that you would need to clarify before finalizing requirements:**