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| CLASS  **LMS Login Class** |
| RESPONSIBILITY   1. Take username from **Student Class** and compare it to user input. 2. Take password from **Student Class** and compare it to user input. 3. Take username from **Instructor Class** and compare it to user input. 4. Take password from **Instructor Class** and compare it to user input 5. Check if Instructor login mode is selected 6. Check if student login mode is selected 7. Grant access to the corresponding system by checking database files 8. Deny access to the corresponding system by checking database files 9. Display error messages |
| COLLABORATION   1. **Student Class** 2. **Instructor Class** |

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| CLASS  **Instructor Class** |
| RESPONSIBILITY   1. Send message to **Courses Class** to access the courses 2. Send message to **Student Class** to view the students enrolled in the course 3. Send message to **Grades Class** to view and edit the grades 4. Update the grades 5. Send message to the **GPA class** to update the GPA of the current course |
| COLLABORATION   1. **Student Class** 2. **Courses Class** 3. **Student Class** |

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| CLASS  **Student Class** |
| RESPONSIBILITY   1. Send message to **Courses Class** to access the courses for the student 2. Send message to **Grades Class** to access the grades in view mode only 3. Send message to **GPA Class** to estimate the semester GPA |
| COLLABORATION   1. **Courses Class** 2. **Grades Class** 3. **GPA Class** |
| CLASS  **Courses Class** | |
| RESPONSIBILITY   1. Stores the courses available to the instructor from the **Instructor Class** 2. Stores the courses available to the Student from the **Student Class** 3. Sends message to the **Grades Class** to display the grades for one course 4. Ability to add or remove courses for either user 5. Stores an estimated GPA for each course used for GPA calculations on the **Student Class** 6. Updates the GPA of each course and stores it in the **GPA Class** | |
| COLLABORATION   1. **Grades Class** 2. **Instructor Class** 3. **Student Class** 4. **GPA Class** | |

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| CLASS  **Grades Class** |
| RESPONSIBILITY   1. Stores the grades of each student in a CVV file 2. Updates all grades if any changes coming from the **Instructor Class** 3. Displays all the grades in the **Student Class** and the **Instructor Class** 4. Stores the total Grade that is used by the **GPA Class** |
| COLLABORTAION   1. **Instructor Class** 2. **Student Class** 3. **GPA Class** |

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| CLASS  **GPA Class** |
| RESPONSIBILITY   1. Sends message to the **Courses Class** to obtain the total grade of each course 2. Sends message to the **Grades Class** to store all the total grades. 3. Performs all the calculations to obtain the semester GPA 4. Displays the estimated GPA in the **Student Class** |
| COLLABORATION   1. **Courses Class** 2. **Grades Class** 3. **Student Class** |