Literature Review & Related Works

Comparison Table: Your Project vs Existing Works

Feature / Project	Sharma & Mehta (IJCA, 2018) [1]	Prakash et al. (IJSETR, 2016) [2]	MUST GitHub Project [3]	PHP College System [4]	Your Project (CSE 3100)
Platform	Web	Web	Web (ASP.NET)	Web (PHP)	Web/Desktop (C or PHP)
Technology Stack	PHP, MySQL	PHP, JS	ASP.NET, SQL Server	PHP, MySQL	C (CLI) / Web
Student Registration	√	√	√	√	√
Course Enrollment	√	√	√	✗	√
Grade Calculation / Entry	√	√	√	√	√
Attendance Tracking	✗	√	√	✗	√
Transcript Generation	✗	√	√	√	√
Role-Based Access (Admin/Faculty/Student)	Partial	√	√	Partial	√
Mobile Responsiveness / UI	✗	Partial	√	✗	Planned
Data Storage (File/Database)	MySQL	MySQL	SQL Server	MySQL	File / SQLite
Report/Analytics Tools	✗	✗	Partial	✗	Planned (Report Module)
Scalability	Medium	Medium	High	Low	Medium

Citations (IEEE Style)

[1] A. Sharma and R. Mehta, "Student Management System," *International Journal of Computer Applications*, vol. 181, no. 24, pp. 1–4, 2018.
[2] N. Prakash, S. Rani, and V. Kumar, "Design and Implementation of Student Academic Management System," *International Journal of Science, Engineering and Technology Research*, vol. 5, no. 9, pp. 2925–2928, 2016.
[3] MUST-SCSE-SE-2018, "Online Student Grade System," *GitHub*, [Online]. Available: https://github.com/MUST-SCSE-SE-2018/Online-Student-Grade-System.
[4] SourceCodester, "College Management System in PHP," *Sourcecodester.com*, [Online]. Available: https://www.sourcecodester.com/php/15914/college-management-system.html.

Projects:

[1] chutrunganh, "Student-Grade-Management-System," *GitHub*, 2020. [Online]. Available: https://github.com/chutrunganh/Student-Grade-Management-System. [Accessed: Jul. 26, 2025].

[2] MrrTahoo, "Student-Grading-System-C-," *GitHub*, 2022. [Online]. Available: https://github.com/MrrTahoo/Student-Grading-System-C-. [Accessed: Jul. 26, 2025].

[3] ManyamSanjayKumarReddy, "StudentGradeBook.c – Basic Projects in C Programming," *GitHub*, 2021. [Online]. Available: https://github.com/ManyamSanjayKumarReddy/Basic-Projects-in-C-Programming/blob/main/StudentGradeBook.c. [Accessed: Jul. 26, 2025].

[4] MUST-SCSE-SE-2018, "Online-Student-Grade-System," *GitHub*, 2018. [Online]. Available: https://github.com/MUST-SCSE-SE-2018/Online-Student-Grade-System. [Accessed: Jul. 26, 2025].

[5] erikaslan, "Student-Information-System," *GitHub*, 2021. [Online]. Available: https://github.com/erikaslan/student-information-system. [Accessed: Jul. 26, 2025].

Requirement Collection and Analysis

To understand what functionalities and features the system should offer for:

- Students
- Faculty members
- Department heads
- Administrative staff

Requirement Collection Methods

Use these techniques to gather requirements:

- **Stakeholder Interviews** (with registrar, faculty, students)
- **Questionnaires/Surveys** (to identify common user expectations)
- **Observation** (how current manual or legacy systems work)
- **Document Analysis** (university forms, regulations, policies)
- **Brainstorming sessions** (with your team and supervisor)

Functional Requirements (FRs) (What the system should do)

ID	Requirement Description
FR1	Student registration and profile management

FR2	Course enrollment (add/drop/withdraw)
FR3	Grade entry and viewing (by faculty and students)
FR4	Attendance tracking
FR5	Semester and exam management
FR6	Fee payment tracking
FR7	Transcript generation
FR8	Notifications and messaging system
FR9	Role-based login (Student, Admin, Faculty)
FR10	Report generation (course lists, student lists, etc.)

Non-Functional Requirements (Quality aspects)

Category	Requirement Example
Usability	The interface should be simple and intuitive
Performance	The system should handle up to 1000 concurrent users
Security	Passwords should be encrypted; access should be role-based
Availability	System should be accessible 24/7 with 99.9% uptime
Maintainability	Code should follow modular design for future updates
Portability	Should work on web and mobile browsers

User Roles and Use Cases

User Role	Use Cases
Student	Register, view/edit profile, enroll in courses, view grades, view transcript
Faculty	View course rosters, input grades, view schedules, communicate with students
Admin	Add/remove courses, manage users, oversee payments, generate reports

In Brief--

User Role	Use Cases
Student	Register, view/edit profile, enroll in courses, view grades, view transcript

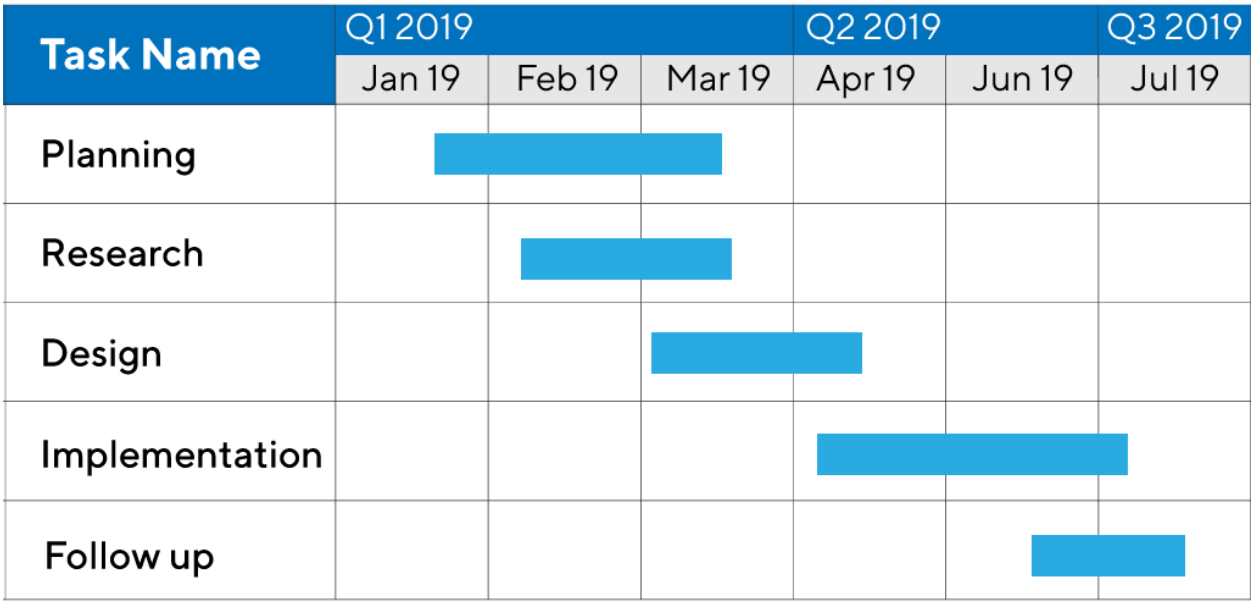
Faculty	View course rosters, input grades, view schedules, communicate with students
Admin	Add/remove courses, manage users, oversee payments, generate reports

At last, prepare a SRS Structure (Software Requirement Specification)

Project Planning & Timeline Design (Gantt Chart)

Task	Start Date	End Date	Duration	Dependency
Requirement Collection	2025-08-01	2025-08-07	1 week	—
System Design	2025-08-08	2025-08-14	1 week	Requirement Collection
Database Design	2025-08-10	2025-08-16	1 week	System Design
Frontend Development	2025-08-15	2025-08-22	1 week	System Design
Backend Development	2025-08-20	2025-08-30	10 days	Database Design
Integration & Testing	2025-08-28	2025-09-04	1 week	Frontend, Backend
Final Report Writing	2025-09-01	2025-09-07	1 week	Testing
Project Presentation	2025-09-08	2025-09-10	3 days	Final Report

Gantt Chart


Task Name
Q1 2019
Q2 2019
Q3 2019
Jan 19
Feb 19
Mar 19
Apr 19
Jun 19
Jul 19
Planning
Research
Design
Implementation
Follow up