

1. What are the three constraints that the project manager should concentrate on while undertaking the project. Explain each of them.

Three main constraints that every project manager must focus on are as follows:

1. Time (schedule)

Time refers to the project's schedule the deadline by which the project must be completed. Every project has a specific timeline, including start and end dates, milestones, and deliverables.

Managing time ensures that tasks are completed on schedule, avoiding delays that can increase costs or affect project quality.

For example: If the project deadline is shortened, the team may have to work overtime or reduce the project's scope to finish on time.

2. Cost (Budget)

Cost refers to the financial resources required to complete the project — including labor, materials, equipment, and overhead expenses.

Staying within budget ensures the project is financially viable. Overspending may lead to financial losses or project cancellation.

For example: If additional features are added to the project, the cost will increase unless compensating cuts are made elsewhere.

3. Scope (Quality or performance)

Scope defines the specific goals, deliverables, features, and functions of the project essentially, what needs to be done.

Managing scope prevents “scope creep,” where uncontrolled changes or additions increase workload, cost, and time without proper approval.

Example: If the client requests more features than originally planned, this will affect both the time and cost unless adjustments are made.

Relationship between the three are as follows:

- If time is reduced, either cost must increase (more resources) or scope must decrease (fewer tasks).
- If scope increases, both time and cost will likely rise.
- If budget is cut, the project may need to reduce scope or extend time.

2. Scholar Academy is a school operating from the year of 2009. It is currently in need of a School Management System to manage its school operations. The operations includes both academic and management (finance, RTE) related operations and they are looking for the online system to manage all these operations.

Functions

- Provision to register different types of users in the system (staffs, teachers, students etc.)
- Provision for students to choose the course and subjects.
- Provision for online enrollment by student themselves.
- Provision for tracking students' attendance and generate attendance report.
- Provision for students to see the fees pending and penalties.
- Provision for students to manage the library.

Given the chosen methodology is Prototype, create a WBS Work Breakdown Structure as a part of the preliminary scope development. WBS should demonstrate the breakdown of task/activities of overall project lifecycle.

Work Breakdown Structure (WBS) for School Management System

Level 1: School Management System Project

1. Requirement Analysis

- 1.1 Identify academic and management requirements.
- 1.2 Conduct meetings with staff, teachers, and students.
- 1.3 Gather requirements for all modules (registration, course, finance, library, attendance).
- 1.4 Prepare the Software Requirement Specification (SRS) document.

2. System Design (Prototype Design)

- 2.1 Design user interface screens for different users.
- 2.2 Develop database schema (students, teachers, courses, fees, attendance, library).
- 2.3 Create prototype layouts for registration, login, and dashboard pages.
- 2.4 Review and get feedback from users on the design.

3. Prototype Development

- 3.1 Implement user registration module (staff, teacher, student).
- 3.2 Develop course and subject selection feature.
- 3.3 Implement online student enrollment system.
- 3.4 Create attendance tracking and report generation system.
- 3.5 Develop fee management module (pending fees, penalties).
- 3.6 Create library management module.

4. Testing and Evaluation

- 4.1 Perform functional testing on each prototype module.
- 4.2 Conduct user acceptance testing (UAT).
- 4.3 Collect and analyze user feedback for improvements.

5. Refinement and Finalization

- 5.1 Modify prototype based on feedback.
- 5.2 Finalize requirements and confirm system design.
- 5.3 Prepare final prototype for approval.

6. Documentation and Presentation

- 6.1 Document the entire project process.
- 6.2 Prepare user and system manuals.
- 6.3 Present the final prototype to the school management.

In this WBS, I have structured the project according to the Prototype Model, which helps in developing an early working version of the system and refining it based on user feedback. This ensures the final School Management System effectively meets the needs of Scholar Academy.