SOEN 6841: Software Project Management

Winter 2024

Project Plan

FOR

AI ENHANCED EDUCATIONAL CHATBOT

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Submitted to:

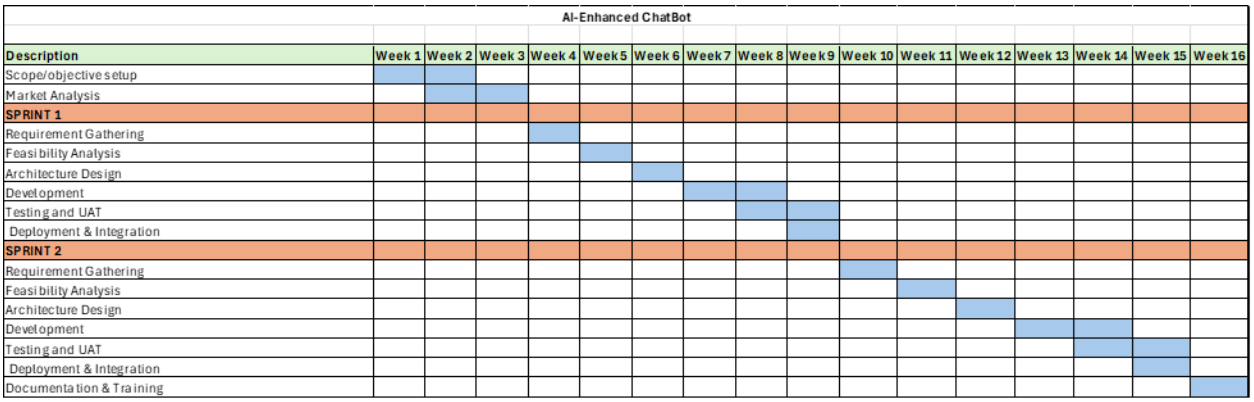
JOUMANA DARGHAM

Team Members: (Project Group - 27)

Name	Student ID
Himangshu Shekhar Baruah	40229774
Shezin Saleem	40278853
Sanjana Sayeed	40237987
Aashray Munjal	40227315

Project Timeline

Gant chart illustrating the key phases and milestones of the project:



AI-Enhanced ChatBot																
Description	**Week 1**	**Week 2**	**Week 3**	**Week 4**	**Week 5**	**Week 6**	**Week 7**	**Week 8**	**Week 9**	**Week 10**	**Week 11**	**Week 12**	**Week 13**	**Week 14**	**Week 15**	**Week 16**
Scope/objective setup																
Market Analysis																
SPRINT 1																
Requirement Gathering																
Feasibility Analysis																
Architecture Design																
Development																
Testing and UAT																
Deployment & Integration																
SPRINT 2																
Requirement Gathering																
Feasibility Analysis																
Architecture Design																
Development																
Testing and UAT																
Deployment & Integration																
Documentation & Training																

Milestones and Deliverables

Project Phases and Details

The AI-Enhanced Educational Chatbot project is divided into seven key phases, each with its own set of milestones and deliverables. The project's goal is to create and deploy an artificial intelligence-powered chatbot that will improve educational experiences through individualized learning.

Phase1: Initiation

Timeline: Week 1 to Week 3

Milestones:

- Problem Identification
- Market Analysis

Deliverables:

- Project Scope and Objectives Document
- Project Charter
- Stakeholder Analysis
- Market Analysis Report

Resources:

- Business Analyst
- AI Specialist
- Project Manager

Phase2: Requirement Gathering and Feasibility Analysis
Timeline: Week 4, Week 5, Week 10, Week 11

Milestones:

- Completion of requirement gathering
- Completion of market analysis

Deliverables:

- Project Schedule: Estimating the timeline of the project's tasks and milestones.
- Budget Plan: Estimate the probable financial cost required for the project.
- Communication Plan: Make strategies for internal and external project communication

Resources:

- Business Analyst
- AI Specialist
- Architect
- Project Manager

Phase3: Design and Development
Timeline: Week 6, Week 7, Week 12, Week 13

Milestones:

- Completion of Architectural Design
- Completion of Development

Deliverables:

- System Architecture
- Developed Chatbot Models

Resources:

- Software Developers
- UX Designer
- Devops Engineer
- Project Manager

Phase4: Testing and UAT
Timeline: Week 8, Week 9, Week 14, Week 15

Milestones:

- Completion of system test
- User Acceptance test

Deliverables:

- System Test Report
- UAT Feedback

Resources:

- Testers
- Project Manager

Phase5: Deployment and Integration
Timeline: Week 9, Week15

Milestones:

- Deployment to Production
- Completion of Integration of all the modules

Deliverables:

- Deployment Report
- Go-Live testing report

Resources:

- Developers
- AI Specialist
- Project Manager
- Testers

Phase6: Project Closure and Knowledge Transfer
Timeline: Week 16

Milestones:

- Completion of Project Closure
- Completion of Knowledge Transfer

Deliverables:

- Project Closure Report
- Lessons Learnt Document

- Documentation for Knowledge Tansfer

Resources:

- Senior Developer
- AI Specialist
- Project Manager

Major Project Milestone Explained

- **Project Initiation:**

  The project initially starts with the approval of the Project Charter. This milestone is critical as it signifies stakeholder opinion on the project's scope, objectives, budget, and timeline. It also acts as a formal authorization for the project team to go forward with the work and starts allocating the necessary resources. The Project Charter also contain information regarding the key stakeholders, project justification, high-level risks, and the overall framework within which the project will operate.

- **Detailed Project Plan Completion – Requirement Gathering and Feasibility Analysis:**

  The Detailed Project Plan will include the completion and approval of a thorough project plan, including the timeline, budget, communication methods, risk management, and resource allocation. It will also act as the project's road map, establishing goals, resource allocation, and stakeholder engagement throughout the project's lifecycle. This milestone guarantees that the team is methodically organized and has a clear direction moving ahead.

- **System Design and Development:**

  The System Design Document will cover the design phase and will include the architectural design, AI model design, and technological stack for the chatbot. It will also contain extensive specifications for the chatbot's functionality, user interface, data models, security measures, and integration points with current systems. Furthermore, it will act as a blueprint for developers, ensuring that they grasp the system's technical needs and expected behavior. It will guarantee that the team is methodically organized and has a clear direction moving ahead.

  The development phase is a critical step in the chatbot development process, which includes coding, creating, and unit testing the chatbot's components. This phase guarantees that the project has a functional prototype that meets the initial design parameters and is prepared for rigorous system and user acceptance testing.

- **System Testing Completion:**

System testing is a key step before the chatbot can be deployed. This milestone shows that comprehensive testing, including functional, non-functional, integration, and security testing have been successfully done before the deployment of the product. The System Test Report will state that the chatbot functions as expected under various use cases and check that any problems have been detected and corrected. User Acceptance Testing (UAT) is frequently performed during this phase to confirm that the chatbot meets end-user requirements and expectations.

- **Deployment and Integration:**

  During the product launch, the chatbot will be deployed into the production environment, where end users can interact with it. It will also complete all deployment processes, ensuring the infrastructure is in place, and fully integrating the chatbot with existing systems. A successful product launch will basically indicate that the chatbot is operational, available to its intended users, and capable of providing the anticipated benefits.

- **Project Closure:**

  The Project Closure milestone represents the formal completion of a project, which will include all activities, deliverables, documentation, and the creation of a Project Closure Report. This report will outline the project's outcomes, lessons learned, and gives a final assessment against initial objectives and performance metrics, indicating the official conclusion of the project and the dissolution of the project team.

These are the major project milestone for the chatbot that is being implemented. These milestones are crucial achievements that ensure a structured and controlled progression towards the ultimate goal, marking the transition from one phase to another.

Resource Allocation

The allocation of human and technology for each stage of the phase is as follows:

Human Allocation:

Resource Loading (In days)	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13	Week 14	Week 15	Week 16	Total Effort	Per Day rate	Total
Business Analyst	2	2	1	1						1							7	$ 714.29	$ 5,000.00
Architect		1		1	1	3				1	1	1					9	$ 1,000.00	$ 9,000.00
Senior Developer 1						1	2	2	1				1	1	1	1	10	$ 800.00	$ 8,000.00
Developer 2							4	4	1				4	4	1		18	$ 444.44	$ 8,000.00
Developer 3							4	4	1				4	4	1		18	$ 444.44	$ 8,000.00
Developer 4							4	4	1				4	4	1		18	$ 444.44	$ 8,000.00
UX Designer							5	5					5	5			20	$ 400.00	$ 8,000.00
Devops Engineer							2	2	2				2	2	2		12	$ 583.33	$ 7,000.00
AI specialist	1	1	1	1	1	1				1	1	1				1	10	$ 1,000.00	$10,000.00
Tester 1								5	5					5	5		20	$ 350.00	$ 7,000.00
Tester 2								5	5					5	5		20	$ 350.00	$ 7,000.00
PM	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	6.4	$ 1,250.00	$ 8,000.00
Total Personell Cost																			$93,000.00

Technology Allocation:

Phase	Technology Used
Project Initiation	No specified tools
Requirement Gathering and Feasibility Analysis	IDEs, Version Control System for documentation and early prototyping.
Software Design and Development	IDEs, Version Control, Cloud Services, AI Libraries / Frameworks, User Interface Design Tools, Data Processing
Testing and UAT	IDEs, Version Control System
Deployment and Integration	Server and Hosting, LMS Integration, Security and Compliance
Project Closure	No specified tools

Identification of Critical Dependencies:

Phase1: Initiation
Critical Dependencies:

- Approval of the Project Charter to formally authorize the project and resource allocation.
- The clarity in the project's scope and objectives to ensure all stakeholders have a unified understanding.
- Completion of a comprehensive market analysis to validate the project's market fit and user demand.

Phase2: Requirement Gathering and Feasibility Analysis
Critical Dependencies:

- Accurate and comprehensive requirement gathering to ensure the final product meets stakeholder expectations and user needs.
- Completion of a detailed market analysis to reaffirm the product's necessity and competitive edge.
- A robust feasibility analysis to ensure technical, operational, and economic viability before progressing further.

Phase3: Software Design and Development
Critical Dependencies:

- Finalized architectural design to guide the development process.
- Availability of specified technologies (IDEs, version control, cloud services, AI libraries/frameworks, etc.) for development and design tasks.
- Skilled resources (developers, UX designers, etc.) to implement the architectural plan.

Phase4: Testing and UAT
Critical Dependencies:

- Completion of development to initiate testing.
- Functioning test environments and necessary tools for system testing.
- Engagement of end-users for UAT to validate the product against real-world scenarios and requirements.

Phase5: Integration and Development
Critical Dependencies:

- Stable and fully tested code ready for deployment.
- Infrastructure readiness for production deployment.
- Successful integration of the chatbot into existing systems with all modules working as intended.

Phase6: Project Closure
Critical Dependencies:

- Confirmation that all project deliverables are completed and accepted by stakeholders.
- Proper documentation of the project process and outcomes for knowledge transfer.
- Formal project closure approval, signifying that all project objectives have been met and that the project can be officially closed.