**Usman Institute of Technology**

**Department of Computer Science**

**Course Code: SE312**

**Course Title: Software Construction and Development**

**SPRING 2024**

**Lab 02**

**Objective: To equip students with the knowledge and skills necessary for effective planning and analysis of software projects.**

**Student Information**

|  |  |
| --- | --- |
| Student Name |  |
| Student ID |  |
| Date |  |

**Assessment**

|  |  |
| --- | --- |
| Marks Obtained |  |
| Remarks |  |
| Signature |  |

**LAB #02**

The objective of this lab is to equip students with the knowledge and skills necessary for effective planning and analysis of software projects. Through practical exercises and tasks, students will learn to create various planning documents, including Gantt charts, budgeting documents, and project status reports. By engaging in hands-on activities, students will develop a comprehensive understanding of the planning process, enabling them to apply these techniques to real-world software development projects. Additionally, the lab aims to foster critical thinking, problem-solving, and communication skills essential for successful project management and execution.

**ANALYSIS AND PLANNING**

* During this phase, teams engage in comprehensive planning and analysis activities to lay the groundwork for the entire project lifecycle.
* The Planning and Analysis Phase serves as the foundation upon which the entire software project is built.
* It involves thorough examination, assessment, and alignment of project requirements, objectives, resources, and constraints.
* By investing time and effort in this phase, teams set themselves up for success by establishing clear goals, defining project scope, and identifying potential risks and challenges.

**Key Objectives:**

* **Define Project Scope:** Clearly articulate the boundaries and objectives of the project to ensure alignment with stakeholder’s expectations.
* **Assess Risks:** Identify potential risks and uncertainties that may impact project success and develop strategies to mitigate them.
* **Allocate Resources:** Determine the human, financial, and technological resources required to execute the project effectively.

**Benefits of Effective Planning and Analysis:**

* **Clarity and Alignment:** Ensure all stakeholders have a clear understanding of project objectives, scope, and expectations, fostering alignment and collaboration.
* **Risk Mitigation:** Identify and mitigate potential risks and uncertainties early in the project lifecycle, minimizing their impact on project outcomes.
* **Resource Optimization:** Efficiently allocate resources, including human, financial, and technological, to maximize productivity and minimize waste.
* **Accountability:** Establish clear responsibilities, timelines, and deliverables, promoting accountability among team members and stakeholders.
* **Improved Decision-Making:** Base decisions on thorough analysis and assessment of project requirements, risks, and constraints, leading to more informed and effective decision-making throughout the project lifecycle.

**DOCUMENTS USUSALLY USED IN PLANNING PHASE**

During the analysis and planning phase of software project development, several useful documents are typically created to facilitate effective planning, communication, and decision-making. These documents help capture project requirements, define project scope, allocate resources, and establish a roadmap for project execution.

* **Project Charter:** The project charter outlines the purpose, objectives, scope, stakeholders, and high-level timeline of the project. It serves as an official authorization document that formally initiates the project and provides a framework for project planning and execution.
* **Gantt Chart:** A Gantt chart is a visual representation of project tasks, timelines, dependencies, and milestones. It provides a timeline view of project activities and helps project managers plan, schedule, and track progress throughout the project lifecycle.
* **Resource Allocation Document:** This document outlines the human, financial, and technological resources allocated to the project. It includes details such as staffing requirements, budget allocation, hardware and software needs, and procurement plans.
* **Risk Management Plan:** The risk management plan identifies potential risks and uncertainties that may impact project success and outlines strategies for mitigating and managing these risks. It includes risk assessment, risk response strategies, and contingency plans.
* **Communication Plan:** The communication plan defines how project information will be communicated, distributed, and managed among stakeholders. It outlines communication channels, frequency of updates, and protocols for resolving issues and conflicts.
* **Training Plan:** The training plan identifies the training needs of project team members and stakeholders and outlines strategies for delivering training and support throughout the project lifecycle.

**TASK 1**

Your task is to create progress report of your project, team charter including team details and risk tracking document which are provided in the folder: [\\colonel\faculty](file:///\\colonel\faculty)share\CS\sashraf\spring2024\LABS\LAB2.

**TASK 2**

Create a Gantt chart of your selected project acquiring all tasks with proper durations and deadlines.

**How to Submit**

* Submit lab work in a single pdf/docx on MS Team.
* Submit the work as per format given in this manual (No other format will be accepted).
* Lab work (Exercises) file name should be saved with your roll number and course code (e.g. 21B-001-SE\_SExxx\_LWxx.pdf where SExxx is course code and LWxx is Lab number).