#### ****Experiment No. 3: Technical Article on Software Development Methodology****

### **Aim:**

To write a detailed technical article about the selected software development methodology for the project, including its description, applications, pros and cons, and justification for selection.

### **Theory:**

Software development methodologies provide structured frameworks for planning, managing, and executing software projects. Selecting the right methodology ensures alignment with project objectives, resource constraints, and stakeholder expectations. Popular methodologies include Agile, Waterfall, Iterative, Spiral, and Rapid Application Development (RAD). Each methodology is suitable for specific types of projects and offers unique benefits and challenges.

### **Learning Objective:**

* To understand and describe a selected software development methodology in detail.
* To analyze the applicability of the methodology to specific project scenarios.
* To develop critical writing and technical reporting skills.

### **Learning Outcome:**

At the end of this experiment, students will be able to:

1. Describe the selected software development methodology in detail.
2. Evaluate the situations in which the methodology is applicable and justify its selection.
3. Develop technical writing skills to produce professional-level documentation.

### **Course Outcomes (COs):**

* **CO1: Understand and explain the fundamentals of software engineering, the software process frameworks, and umbrella activities to manage and improve software development.**
* **CO2: Analyze and compare traditional and agile software development models, including their applicability to various project scenarios.**
* **CO5: Evaluate and mitigate software project risks and apply configuration management practices to maintain project integrity.**

### **Cognitive Levels of Attainment as per Bloom’s Taxonomy:**

* **L2 (Understand):** Comprehend the chosen methodology and its characteristics.
* **L3 (Apply): Implement critical thinking to analyze the applicability of the methodology.**
* **L6 (Create): Produce a well-structured, plagiarism-free technical article.**

### **Programme Outcome (POs):**

* **PO1: Engineering Knowledge:** Apply knowledge of engineering principles to describe and justify the chosen methodology.
* **PO2: Problem Analysis: Analyze the suitability of the methodology for specific project needs.**
* **PO9: Communication: Effectively communicate the methodology and its applications through a detailed technical article.**
* **PO11: Life-Long Learning: Develop the ability to independently research and analyze new and existing software methodologies.**

### **Programme Specific Outcome (PSOs):**

* **PSO1:** Apply software engineering knowledge to select sustainable IT solutions for various domains, including software programming and development.

### **Result & Discussion:**

* **Result:**
  1. Researched and selected a software development methodology suitable for the project.
  2. Produced a plagiarism-free technical article that provides a comprehensive overview of the methodology, including its applications and evaluation.
* **Discussion:**  
  The detailed article highlights the selected methodology’s characteristics, its applicability to the project, and an evaluation of its pros and cons. The choice of methodology was justified based on its ability to meet project requirements effectively.

### **Conclusion:**

Writing a technical article helps in deepening the understanding of software development methodologies and their practical applications. Selecting the most suitable methodology ensures that the project adheres to quality standards while efficiently utilizing resources and meeting stakeholder expectations.