Acropolis Institute of Technology and Research, Indore

Department of Computer Science and Engineering

B. Tech. IV Semester

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Lab Assignment

On

Software Engineering [CS 403]

Submitted To:

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Submitted By:

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Course Educational Objectives

CEO1	Understand the basics of software development life cycle as a product.
CEO2	Understand the current requirements of industries for software standards
CEO3	Implement the software as a product using different design patterns
CEO4	Apply the software development techniques in real life applications.
CEO5	Understand the existing software solutions and correlate with the SDLC, design patterns and software standards

Course Outcomes

Upon completion of this subject / course the student will be able:

CO1	Specify, classify, implement, analyze and develop applications using various SDLC models like Linear sequential, prototype, Evolutionary models
CO2	Understand, classify, analyze and develop applications using Various software standards. .
CO3	Understand, classify, implement various types of design patterns (Creational, Behavioural, structural); understand and analyze each design pattern using java program
CO4	Understand, classify, implement various types of design patterns (Presentation layer, Integration layer, business layer); Analyze the problem statement make UML diagram and code the program in java .
CO5	Able to describe the SDLC, design patterns and software standards applicable to the existing software systems.

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11.	MODELING UML SEQUENCE DIAGRAMS				
12.	STATE TRANSITION DIAGRAM				
13.	ACTIVITY MODELING				
14.	ESTIMATION OF TEST COVERAGE METRICS AND STRUCTURAL COMPLEXITY				
15.	DESIGNING TEST SUITES				
16.	SOFTWARE REQUIREMENT SPECIFICATION (SRS)				

Experiment I

EXPLAIN SDLC IN DETAIL (HANDWRITTEN)

Experiment II

COMPARE FOLLOWING MODELS: (HANDWRITTEN)

1. LINEARSEQUENTIAL MODEL,

2. PROTOTYPING MODEL,

3. RAD MODEL,

EVOLUTIONARY PROCESS MODELS LIKE

4. INCREMENTAL MODEL,

5. SPIRAL MODEL,

6. COMPONENT ASSEMBLY MODEL,

7. RUP AND

8. AGILEPROCESSES

9. CMM

POINT FOR COMPARISON:

A. YEAR

B. PROPOSED BY

C. DIAGRAM

D. BRIEF DESCRIPTION

E. ADVANTAGES

F. DISADVANTAGES

G. WHEN BEST SUITED

Experiment III

PROBLEM STATEMENT: IDENTIFYING THE REQUIREMENTS

1. Problem Statement

Detailed description of the problem that you are solving.

2. Solution Proposed

Detailed solution of the problem

3. Users

Detailed description of each user.

4. Functionalities

4.1 Identification of functional requirements.

- **Function1**
- **Function2**

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Table 01: Identifier and priority for software requirements

#	Requirement	Priority
R1		
R2		

4.2 Identification of non-functional requirements.

Experiment IV
Synopsis

1. Abstract

A very short gist of the problem addressed.

2. Introduction of the Project (1 paragraph)

A brief introduction about the project should be given in this section. This section consists what is the project all about? Describe the rational and what could be the probable problems that would be addressed during the course of project?

3. Objective (100 words)

Statements which directly state what has to be done for addressing the problem stated. Objective should be clearly specified. What the project ends up to and in what way this is going to help the end user should be mentioned specifically.

4. Scope (100 words)

This should clearly mention the scope and intended audience where the project is applicable.

5. Study of Existing System (200 words)

A case study of at least 5 existing systems should be done and relative comparison with their merits and demerits. This will help in formulation of further objectives that could be addressed within the project.

- Existing System/Application 1:
  - o Problems Addressed
  - o Advantages
  - o Disadvantages
  - o Gaps Identified
  - o Reference link
- Existing System/Application 2:
  - o Problems Addressed
  - o Advantages
  - o Disadvantages
  - o Gaps Identified
  - o Reference link
- Existing System/Application 3:
  - o Problems Addressed
  - o Advantages
  - o Disadvantages
  - o Gaps Identified
  - o Reference link
- Existing System/Application 4:

o Problems Addressed
- o Advantages
- o Disadvantages
- o Gaps Identified

Reference link

- Existing System/Application 5:

o Problems Addressed
- o Advantages
- o Disadvantages
- o Gaps Identified

Reference link

6. Project Description (200 words)

The process of the whole software system proposed, to be developed, should be mentioned in brief. This may be supported by Flowcharts/ER diagram to explain the flow of the information.

7. Methodology/Planning of the Project work (200 words)

Methodology includes the steps to be followed to achieve the objective of the project during the project development.

8. Expected Outcome (100-150 words)

Briefly illustrate the outcomes of the project development along with the benefits to the society.

9. Resources and Limitations (150 words)

The requirement of the resources for designing and developing the proposed system must be given. The resources might be in form of the hardware / software or the data from the industry. The limitations of the proposed system in respect of a larger and comprehensive system must be given.

10. Conclusion (100-150 words)

The write-up must end up with the concluding remarks-briefly.

11. References

Mention the sources referred for the study and development of the project. References include literature, books, websites or any other kind of resource directly or indirectly referred for development of project and its report. All the references should be listed in **IEEE format.**

Experiment V

ESTIMATION OF PROJECT METRICS

1. COCOMO

A very short gist of the problem addressed.

2. Regression

A brief introduction about the project should be given in this section. This section consists what is the project all about? Describe the rational and what could be the probable problems that would be addressed during the course of project?