



RV Educational Institutions[®]
RV College of Engineering[®]

Autonomous
Institution Affiliated
to Visvesvaraya
Technological
University, Belagavi

Approved by AICTE,
New Delhi

Go, change the world

Major Project 20MCA36

on “Development of Custom Application for Product Lifecycle Management”

Submitted by
Nithin
1RV21MC067

**Under the Guidance
of**

Dr. S Anupama Kumar
Associate Professor
Department of MCA
RV College of Engineering[®]
Bengaluru – 560059

Mr. Amit Kumar Sharma
PLM Developer
Koch Business Solutions India
Bengaluru – 560066

*Submitted in partial fulfillment of the requirements for the award of degree
of*

MASTER OF COMPUTER APPLICATIONS

2022-2023

RV COLLEGE OF ENGINEERING®

(Autonomous Institution Affiliated to Visvesvaraya Technological University, Belagavi)

DEPARTMENT OF MASTER OF COMPUTER APPLICATIONS

Bengaluru– 560059



CERTIFICATE

Certified that the project work titled **Development of Custom Application for Product Lifecycle Management** carried out by **Nithin, 1RV21MC067**, a bonafide student of **RV College of Engineering®, Bengaluru** submitted in partial fulfilment for the award of **Master of Computer Applications** of **RV College of Engineering®, Bengaluru** affiliated to **Visvesvaraya Technological University, Belagavi** during the year **2022-23**. It is certified that all corrections/suggestions indicated for internal assessment have been incorporated in the report deposited in the departmental library. The project report has been approved as it satisfies the academic requirement in respect of project work prescribed for the said degree.

Dr. S Anupama Kumar
Associate Professor
Department of MCA
RVCE, Bengaluru –59

Dr. Andhe Dharani
Professor and Director
Department of MCA
RVCE, Bengaluru–59

Dr. K. N. Subramanya
Principal
RVCE, Bengaluru–59

RV COLLEGE OF ENGINEERING®

(Autonomous Institution Affiliated to Visvesvaraya Technological University, Belagavi)

DEPARTMENT OF MASTER OF COMPUTER APPLICATIONS

Bengaluru– 560059

DECLARATION

I, **Nithin**, student of fourth semester MCA in **Department of Master of Computer Applications**, RV College of Engineering®, Bengaluru declare that the project titled “**Development of Custom Application for Product Lifecycle Management**” has been carried out by me. It has been submitted in partial fulfilment of the course requirements for the award of degree in **Master of Computer Applications** of RV College of Engineering®, Bengaluru affiliated to Visvesvaraya Technological University, Belagavi during the academic year **2022-23**. The matter embodied in this report has not been submitted to any other university or institution for the award of any other degree or diploma.

Date of Submission:

Signature of the Student

Student Name: Nithin

USN: 1RV21MC067

Department of Master of Computer Applications

RV College of Engineering®

Bengaluru-560059

ACKNOWLEDGEMENT

The satisfaction and euphoria that accompany the success of any work would be incomplete unless I mention the name of the people, who made it possible, whose constant guidance and encouragement served a beacon light and served our effort with success.

I express my sincere thanks and wholehearted credit to my External guide **Mr. Amit Kumar Sharma**, PLM Developer, Koch Business Solutions India, Bengaluru for his constant encouragement, support, and guidance during the project work.

I express my wholehearted gratitude to **Dr. Subramanya K N**, Principal, RV College of Engineering® for providing me an opportunity.

I express my special thanks to **Dr. Andhe Dharani**, Professor, and Director, Department of MCA, RV College of Engineering®, Bengaluru for her constant support and guidance.

I express my sincere thanks and wholehearted credit to my Internal guide **Dr. S Anupama Kumar**, Associate Professor, Department of MCA, RV College of Engineering®, Bengaluru for her constant encouragement, support, and guidance during the project work.

I am also thankful to lab in-charge staff and all faculty of the department for their help and support during the seminar. On a moral personal note, my deepest appreciation and gratitude to my beloved family, who have been a fountain of inspiration and have provided unrelenting encouragement and support.

Nithin

Department of MCA

RV College of Engineering®

Bengaluru-59

ABSTRACT

A specialised software solution specifically created to meet the demands, processes, and commercial goals of a manufacturing organisation is known as custom application for PLM (Product Lifecycle Management). By fostering cooperation, increasing data accessibility, and improving process efficiency, it plays a significant part in simplifying and optimising product development processes. A customised PLM application gives businesses the tools they need to manage product data efficiently, make informed decisions, and gain a competitive edge on the market, fostering innovation and success throughout the entire product lifecycle. These features include CAD integration, quality assurance management, and customised reporting.

The modules which are present are Document Management: Manage product-related documents such as specifications, drawings, and user manuals. CAD Integration: Allows for seamless connection with CAD software, making it easier to import, convert, and visualise CAD data for collaborative product design and synchronisation, improving product quality and speeding up development. Through inspections, audits, and non-conformance control, quality assurance ensures product quality and compliance, making it possible to quickly identify and address problems. This increases customer satisfaction and promotes continual development. Report & Analytics: Provides users with in-depth reports and visualisations, editable templates, and data aggregation tools for strategic planning, process optimisation, and informed decision-making. This aids in the effective creation of products and the success of businesses.

The outcome of the custom application will be specific to the goals and objectives of the organization and the application. However, some potential outcomes of the application could include Improved Productivity, automation, and streamlining of product-related processes, resulting in increased productivity and efficiency for the organization. Improved Data Management: The application can provide better management of product data, including CAD data, and documentation, resulting in improved accuracy and up-to-date information. Overall, the application provides numerous benefits to an organization, depending on its specific requirements and objectives. The outcome of the application can lead to improved efficiency, quality, and compliance, resulting in increased profitability and competitiveness in the market.

Table of Contents

CONTENTS	PAGE NO.
College Certificate	i
Company Certificate	ii
Declaration by student	iii
Acknowledgement	iv
Abstract	v
Table of Contents	vi
List of Tables	vii
List of Figures	viii
Chapter 1: Introduction	1
1.1 Project Description	2
1.2 Company Profile	3
1.3 Dissertation Organization	5
Chapter 2: Literature Review	6
2.1 Literature Survey	6
2.2 Existing and Proposed System	10
2.3 Tools and Technologies used	12
2.4 Hardware and Software Requirements	14
Chapter 3: Software Requirement Specifications	15
3.1 Introduction	15
3.2 General Description	16
3.3 Functional Requirement	17
3.4 Non-Functional Requirements	19
3.5 Design constraints	20

Chapter 4: System Design	22
4.1 System perspective	19
4.2 Context Diagram	26
Chapter 5: Detailed Design	28
5.1 Architecture Design	28
5.2 Detailed design	33
Chapter 6: Implementation	36
6.1 Implementation	36
Chapter 7: Software Testing	41
7.1 Test cases	41
7.2 Testing and Validations	46
Chapter 8: Conclusion	48
Chapter 9: Future Enhancements	49
Bibliography	50

LIST OF TABLES

Table no.	Table label	Page no.
2.1	Hardware Requirement	13
2.2	Software Requirement	13
3.1	Abbreviations	14
7.1	testing the module Document Management	39
7.2	testing the module CAD Integration	40
7.3	testing the module Quality Assurance	40
7.4	testing the module Report and Analytics	41
7.5	Integration Testing of Custom Application for PLM	42
7.6	System Testing of Custom Application for PLM	43

LIST OF FIGURES

Figure no.	Figure Label	Page no.
4.1	Block Diagram	23
4.2	Context Diagram	26
5.1	Architecture Diagram	28
5.2	DFD Level 0	30
5.3	DFD Level - 1	30
6.1	Document Management	33
6.2	Document Overview	33
6.3	Creating new CAD file	34
6.4	Creating New Design	34
6.5	Quality Assurance	35
6.6	Report Overview	36
6.7	Product Report	36
6.8	Analytics example	37