# SALES DATA ANALYTICS

# AND DASHBOARD SYSTEM

A PROJECT REPORT

#### Submitted by

PRAGADEESWARAN K [RA2211047010135]

SHYAM J [RA2212701010002]

KARAN PILLAI [RA2212701010013]

#### Under the Guidance of

Ms. Sasi Rekha Sankar

(Assistant Professor, Department of Computational Intelligence)

### *in partial fulfillment of the requirements* *for the degree of*

## BACHELOR OF TECHNOLOGY

## in

## ARTIFICIAL INTELLIGENCE



## DEPARTMENT OF COMPUTATIONAL INTELLIGENCE COLLEGE OF ENGINEERING AND TECHNOLOGY

SRM INSTITUTE OF SCIENCE AND TECHNOLOGY

## KATTANKULATHUR- 603 203

### MAY 2025

Department of Computational Intelligence

##### SRM Institute of Science & Technology

##### Own Work\* Declaration Form

This sheet must be filled in (each box ticked to show that the condition has been met). It must be signed and dated along with your student registration number and included with all assignments you submit – work will not be marked unless this is done.

To be completed by the student for all assessments

##### Degree/ Course : B.Tech (AI)

**Student Name : PRAGADEESWARAN K, SHYAM J, KARAN PILLAI**

##### Registration Number : RA2211047010135, RA2212701010002, RA2212701010013

**Title of Work : SALES DATA ANALYTICS AND DASHBOARD SYSTEM**

I / We hereby certify that this assessment compiles with the University’s Rules and Regulations relating to Academic misconduct and plagiarism\*\*, as listed in the University Website, Regulations, and the Education Committee guidelines.

I / We confirm that all the work contained in this assessment is my / our own except where indicated, and that I / We have met the following conditions:

* Clearly referenced / listed all sources as appropriate
* Referenced and put in inverted commas all quoted text (from books, web, etc)
* Given the sources of all pictures, data etc. that are not my own
* Not made any use of the report(s) or essay(s) of any other student(s) either past or present
* Acknowledged in appropriate places any help that I have received from others (e.g. fellow students, technicians, statisticians, external sources)
* Compiled with any other plagiarism criteria specified in the Course handbook / University website

I understand that any false claim for this work will be penalized in accordance with the University policies and regulations.

|  |
| --- |
| **DECLARATION:** |
| I am aware of and understand the University’s policy on Academic misconduct and plagiarism and I certify that this assessment is my / our own work, except where indicated by referring, and that I have followed the good academic practices noted above. |
| If you are working in a group, please write your registration numbers and sign with the date for every student in your group. |

# Logo

# SRM INSTITUTE OF SCIENCE AND TECHNOLOGY KATTANKULATHUR – 603 203

## BONAFIDE CERTIFICATE

Certified that 21CSC303J - Software Engineering and Project Management report titled “**SALES DATA ANALYTICS AND DASHBOARD SYSTEM”** is the bonafide work of “**PRAGADEESWARAN K [RA2211047010135], SHYAM J [RA2212701010002], KARAN PILLAI [RA2212701010013]”** who carried out the project work[internship] under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form any other project report or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

**SIGNATURE SIGNATURE**

##### Ms. Sasi Rekha Sankar DR. R. ANNIE UTHRA

|  |  |  |
| --- | --- | --- |
| **SUPERVISOR**  Assistant Professor  DEPARTMENT OF COMPUTATIONAL INTELLIGENCE  SRM KATTANKULATHUR |  | **PROFESSOR &HEAD**  DEPARTMENT OF  COMPUTATIONAL INTELLIGENCE  SRM KATTANKULATHUR |

**ACKNOWLEDGEMENTS**

We express our humble gratitude to **Dr. C. Muthamizhchelvan**, Vice-Chancellor, SRM Institute of Science and Technology, for the facilities extended for the project work and his continued support.

We extend our sincere thanks to **Dr. Leenus Jesu Martin M,** Dean-CET, SRM Institute of Science and Technology, for his invaluable support.

We wish to thank **Dr. Revathi Venkataraman**, Professor and Chairperson, School of Computing, SRM Institute of Science and Technology, for her support throughout the project work.

We encompass our sincere thanks to, **Dr. M. Pushpalatha**, Professor and Associate Chairperson - CS, School of Computing and **Dr. Lakshmi,** Professor and Associate Chairperson -AI, School of Computing, SRM Institute of Science and Technology, for their invaluable support.

We are incredibly grateful to our Head of the Department, **Dr.R. Annie Uthra**, Professor and Head & Department of Computational Intelligence, SRM Institute of Science and Technology, for her suggestions and encouragement at all the stages of the project work.

We want to convey our thanks to our Project Coordinators, Panel Head, and Panel Members Department of Computational Intelligence, SRM Institute of Science and Technology, for their inputs during the project reviews and support.

We register our immeasurable thanks to our Faculty Advisor, **Dr. Vinston Raja R**, Department of Computational Intelligence, SRM Institute of Science and Technology, for leading and helping us to complete our course.

Our inexpressible respect and thanks to our guide, **Ms. Sasi Rekha Sankar**, Department of Computational Intelligence, SRM Institute of Science and Technology, for providing us with an opportunity to pursue our project under his / her mentorship. He / She provided us with the freedom and support to explore the research topics of our interest. His / Her passion for solving problems and making a difference in the world has always been inspiring.

We sincerely thank all the staff members of Department of Computational Intelligence, School of Computing, S.R.M Institute of Science and Technology, for their help during our project. Finally, we would like to thank our parents, family members, and friends for their unconditional love, constant support and encouragement

### **ABSTRACT**

### In the evolving landscape of data-driven decision-making, businesses require intelligent systems that translate raw data into meaningful insights. Our project, titled “Sales Data Analytics and Dashboard System,” presents a secure, interactive, and visually intuitive platform for analyzing sales performance, built using Python and Streamlit within an Agile development framework. This system features a web-based dashboard connected to a SQLite database, offering seamless access to historical sales data. It is enhanced with interactive visualizations through Plotly and forecasting capabilities using the Prophet algorithm, supporting real-time exploration of sales trends across various dimensions such as time, region, and retailer. The application integrates user authentication and role-based access control (admin and user roles), dynamic filtering by date range, retailer, and region, and provides core KPIs including total sales, profit, units sold, and average order value. Visual analytics are delivered through bar charts, time series trends, treemaps, and regional maps, while advanced forecasting with Prophet enables predictive sales insights. Security features such as login and password recovery ensure data protection and controlled access. Developed using Agile methodology, the project follows a structured approach with clearly defined user stories, epics, and a prioritized backlog, enabling iterative development and continuous refinement based on stakeholder feedback. This project not only demonstrates the practical application of Software Engineering and Project Management principles but also delivers a powerful, data-driven tool that empowers businesses to identify opportunities, optimize strategies, and make informed sales decisions.

**TABLE OF CONTENTS**

**ABSTRACT iv**

**TABLE OF CONTENTS v**

**LIST OF FIGURES viii**

**LIST OF TABLES x**

**CHAPTER NO.**  **TITLE**  **PAGE NO.**

**1 INTRODUCTION 1**

1.1 Introduction to Project 1

1.2 Motivation 2

1.3 Sustainable Development Goal of the Project 3 1.4 Product Vision Statement 4

1.5 Product Goal 5

1.6 Product Backlog (Key User Stories with Desired Outcomes) 6

1.7 Product Release Plan 8

**2** **SPRINT PLANNING AND EXECUTION 9**

**2.1** **Sprint 1 9** 2.1.1 Sprint Goal with User Stories of Sprint 1 9

2.1.2 Functional Document 13

2.1.3 Architecture Document 16

2.1.4 UI Design 18

2.1.5 Functional Test Cases 19

2.1.6 Daily Call Progress 19

2.1.7 Committed vs Completed User Stories 20

2.1.8 Sprint Retrospective 20

**2.2 Sprint 2 21**

2.2.1 Sprint Goal with User Stories of Sprint 2 21

2.2.2 Functional Document 25

2.2.3 Architecture Document 28

2.2.4 UI Design 30

2.2.5 Functional Test Cases 31

2.2.6 Daily Call Progress 31

2.2.7 Committed vs Completed User Stories 32

2.2.8 Sprint Retrospective 32

**2.3 Sprint 3 33**

2.3.1 Sprint Goal with User Stories of Sprint 3 33

2.3.2 Functional Document 37

2.3.3 Architecture Document 40

2.3.4 UI Design 42

2.3.5 Functional Test Cases 44

2.3.6 Daily Call Progress 44

2.3.7 Committed vs Completed User Stories 45

2.3.8 Sprint Retrospective 45

**2.4 Sprint 4 46**

2.4.1 Sprint Goal with User Stories of Sprint 3 46

2.4.2 Functional Document 50

2.4.3 Architecture Document 53

2.4.4 UI Design 56

2.4.5 Functional Test Cases 57

2.4.6 Daily Call Progress 57

2.4.7 Committed vs Completed User Stories 58

2.4.8 Sprint Retrospective 58

**3.** **RESULTS AND DISCUSSIONS 59**

3.1 Project Outcomes 59

3.2 Committed vs Completed User Stories 60

**4 CONCLUSIONS & FUTURE ENHANCEMENT 61**

**REFERENCES 62**

**APPENDIX 63**

A. SAMPLE CODING 63

**LIST OF FIGURES**

|  |  |  |
| --- | --- | --- |
| **FIG NO** | **TITLE** | **PAGE NO.** |
| **1.1** | **MS Planner Board of Sales Data Analytics and Dashboard System** | **7** |
| **1.2** | **Release plan of Sales Data Analytics and Dashboard System** | **8** |
| **2.1** | **User story for Key Metrics Dashboard** | **10** |
| **2.2** | **User story for Sales Data Filtering Panel** | **11** |
| **2.3** | **User story for Regional Distribution Treemap** | **12** |
| **2.4** | **System Architecture Diagram for Sprint 1** | **16** |
| **2.5** | **UI Design for Sales Overview** | **18** |
| **2.6** | **UI design for Sales Overview with Filter Options** | **18** |
| **2.7** | **UI Design for Regional Analysis** | **18** |
| **2.8** | **Standup meetings for Sprint 1** | **19** |
| **2.9** | **Bar graph for Committed Vs Completed User Stories for Sprint 1** | **20** |
| **2.10** | **User story for Registration form for new users** | **22** |
| **2.11** | **User story for Password reset workflow** | **23** |
| **2.12** | **User story for Admin dashboard with advanced analytics features** | **24** |
| **2.13** | **System Architecture Diagram for Sprint 2** | **28** |
| **2.14** | **UI Design for Login Page** | **30** |
| **2.15** | **UI Design for Signup Page** | **30** |
| **2.16** | **UI design for Advanced Analytics Charts** | **30** |
| **2.17** | **Standup meetings for Sprint 2** | **31** |
| **2.18** | **Bar graph for Committed Vs Completed User Stories for Sprint 2** | **32** |
| **2.19** | **User story for Sales Record Addition Functionality** | **34** |
| **2.20** | **User story for Sales Record Update Functionality** | **35** |
| **2.21** | **User story for Sales Record Deletion Functionality** | **36** |
| **2.22** | **System Architecture Diagram for Sprint 3** | **41** |
| **2.23** | **UI Design for Adding a Record** | **42** |
| **2.24** | **UI Design for Data Management page** | **43** |
| **2.25** | **UI Design for Deleting a Record** | **43** |
| **2.26** | **Standup meetings for Sprint 3** | **44** |
| **2.27** | **Bar graph for Committed Vs Completed User Stories for Sprint 3** | **45** |
| **2.28** | **User story for Comprehensive Authentication System** | **47** |
| **2.29** | **User story for Advanced Visualization Toolkit** | **48** |
| **2.30** | **User story for Predictive Analytics with Prophet** | **49** |
| **2.31** | **System Architecture Diagram for Sprint 4** | **54** |
| **2.32** | **UI Design for Report Generation Page** | **56** |
| **2.33** | **UI Design for More Visualization** | **56** |
| **2.34** | **UI Design for State Performance Data** | **56** |
| **2.35** | **Standup meetings for Sprint 4** | **57** |
| **2.36** | **Bar graph for Committed Vs Completed User Stories for Sprint 4** | **58** |
| **3.1** | **Committed vs Completed User stories for all sprints** | **60** |

**LIST OF TABLES**

|  |  |  |
| --- | --- | --- |
| **TABLE NO** | **TITLE** | **PAGE NO.** |
| **1.1** | **Product Backlog of Sales Data Analytics and Dashboard System** | **6** |
| **2.1** | **Detailed User Stories of sprint 1** | **9** |
| **2.2** | **Access level Authorization Matrix for Sprint 1** | **15** |
| **2.3** | **Detailed Functional Test Case for Sprint 1** | **19** |
| **2.4** | **Sprint Retrospective for Sprint 1** | **20** |
| **2.5** | **Detailed User Stories of sprint 2** | **21** |
| **2.6** | **Access level Authorization Matrix for Sprint 2** | **27** |
| **2.7** | **Detailed Functional Test Case for Sprint 2** | **31** |
| **2.8** | **Sprint Retrospective for Sprint 2** | **32** |
| **2.9** | **Detailed User Stories of Sprint 3** | **33** |
| **2.10** | **Access level Authorization Matrix for Sprint 3** | **39** |
| **2.11** | **Detailed Functional Test Case for Sprint 3** | **44** |
| **2.12** | **Sprint Retrospective for the Sprint 3** | **45** |
| **2.13** | **Detailed User Stories of sprint 4** | **46** |
| **2.14** | **Access level Authorization Matrix for Sprint 4** | **52** |
| **2.15** | **Detailed Functional Test Case for Sprint 4** | **57** |
| **2.16** | **Sprint Retrospective for the Sprint 4** | **58** |