

**DESIGN AND DEVELOPMENT OF COMPREHENSIVE DATA UNDERSTANDING
A HYBRID VISUALIZATION SOLUTION**



FINAL PROJECT

**Prepared to Meet Requirements to Complete Research
Diploma IV Majoring Informatics Management
Sriwijaya State Polytechnic**

By :

**MUHAMMAD DIKO RADJASA
062040832756**

**INFORMATICS MANAGEMENT DEPARTMENT
SRIWIJAYA STATE POLYTECHNIC
PALEMBANG
2024**



KEMENTERIAN PENDIDIKAN, KEBUDAYAAN,

RISET, DAN TEKNOLOGI

POLITEKNIK NEGERI SRIWIJAYA

JURUSAN MANAJEMEN INFORMATIKA

Jalan Sriwijaya Negara Bukit Besar - Palembang 30139 Telepon (0711) 353414

Laman : <http://polsri.ac.id> Pos El : info@polsri.ac.id

FINAL PROJECT REPORT APPROVAL SHEET

Name : Muhammad Diko Radjasa
NPM : 062040832756
Major : Informatics Management
Study Program : Diploma IV Informatics Management
Final Project Title : Design and Development of Comprehensive Data Understanding a Hybrid Visualization Solution

It has been tested on the Final Project Exam, May 25th 2024

In front of the Informatics Management Department Examining Team
Sriwijaya State Polytechnic

Palembang, 21 October 2024

Ascertain,
Head of Department
Informatics Management

Approved,
Supervisor

Dr. Indri Ariyanti, S.E., M.Si.
NIP 197306032008012008

Febie Elfaladonna, S.Kom., M.Kom.
NIP 199402222019032019

MOTTO AND DEDICATION

Motto:

“There is no success without hard work. There is no success without togetherness. There is no ease without prayer.”

(Ridwan Kamil)

“A great person is one who has the ability to hide his distress, so that others think he is always happy.”

(Imam Syafi'i)

I dedicate it to:

- Allah SWT the Almighty Giver of Help.
- Both parents and extended family who have prayed and given encouragement.
- I myself have completed this program.
- Lecturers who have guided me all this time.
- All friends who have provided support and help

ABSTRAK

Pemahaman data dengan merepresentasikan data yang kompleks dengan cara yang mudah ditafsirkan oleh audiens yang lebih luas melalui visualisasi yang interaktif dan intuitif. Sistem yang dikembangkan menawarkan berbagai pilihan visualisasi kepada pengguna untuk memenuhi kebutuhan data dan visualisasi yang berbeda, sehingga mereka dapat mengeksplorasi dan menganalisis data secara mendalam. Dengan menciptakan visualisasi interaktif yang menyeimbangkan bentuk dan fungsi, solusi ini bertujuan untuk melibatkan pengguna secara aktif dengan data visual sekaligus mengkomunikasikan wawasan yang diperoleh dari data secara efektif. Penelitian ini menjawab tantangan untuk menyederhanakan data yang kompleks melalui elemen visual seperti batang, garis, titik, dan bentuk, yang pada akhirnya memberikan visualisasi yang jelas, mudah diakses, dan menarik yang memenuhi kebutuhan audiens yang beragam.

Kata Kunci : *Visualisasi Data, Visual Elemen, Komprehensif Data.*

ABSTRACT

Data understanding by representing complex data in a way that is easily interpreted by a wider audience through interactive and intuitive visualizations. The developed system offers users a variety of visualization options to meet different data and visualization needs, allowing them to explore and analyze data in depth. By creating interactive visualizations that balance form and function, the solution aims to actively engage users with visual data while effectively communicating insights derived from the data. This research addresses the challenge of simplifying complex data through visual elements such as bars, lines, dots and shapes, ultimately providing clear, accessible and engaging visualizations that meet the needs of diverse audiences.

Keywords : *Data Visualization, Visual Element, Comprehensive Data*

FOREWORD

The authors would like to express their thanks to the presence of Almighty God for all the guidance, strength and health that He has given, so that the authors can complete this Final Project. This Final Project is entitled "**IMPLEMENTATION OF MOVIE RECOMMENDATION SYSTEM USING MACHINE LEARNING**" and is the result of drafting during the Final Project.

In preparing this final assignment, the author received a lot of help, guidance and support from various parties, so the author would like to thank:

1. Mr. Ir. H. Irawan Rusnadi, M.T. as Director of the Sriwijaya State Polytechnic;
2. Mr. Carlos RS, S.T., M.T. as Deputy Director for Academic Affairs at the Sriwijaya State Polytechnic;
3. Mrs. Nelly Masnila, S.E., M.Si.Ak. as Deputy Director for Finance at the Sriwijaya State Polytechnic;
4. Mr. Ahmad Zamheri, S.T., M.T. as Deputy Director for Student Affairs at the Sriwijaya State Polytechnic;
5. Mr. Drs. Zakaria, M.Pd. as Deputy Director for Cooperation and International Relations at the Sriwijaya State Polytechnic;
6. Mrs. Dr. Indri Ariyanti, S.E., M.Si. as Head of the Informatics Management Department of the Sriwijaya State Polytechnic;
7. Mrs. Rika Sadariawati, SE., M.Si. as Head of the Informatics Management Study Program, Sriwijaya State Polytechnic;
8. Mr. Meivi Kusnandar, S.Kom., M.Kom. as Secretary of the Informatics Management Department of Sriwijaya State Polytechnic;
9. Mrs. Febbie Elfaladonna, S.Kom.,M.Kom. as my supervisor for this final project
10. All the lecturer, staff, administration and officer in Informatics Management of State Polytechnic of Sriwijaya;
11. Both of my parents who always give me endless support throughout my academic years;

12. Colleagues majoring in Information Management, especially class 8MIF; and
13. All parties who have helped in completing this Practical Work Report.

The author realizes that in this Final Project Report there are still errors and shortcomings. For this reason, the author hopes for constructive criticism and suggestions from all parties so that it can be even better in the future. Finally, the author hopes that this Final Project Report will be useful for readers, especially for students of the Informatics Management Department of Sriwijaya State Polytechnic and to increase insight, so that the expected goals can be achieved.

Palembang, 21 October 2024



Writer

TABLE OF CONTENT

TITLE PAGE.....	i
FINAL PROJECT REPORT APPROVAL SHEET	ii
MOTTO AND DEDICATION	iii
ABSTRAK.....	iv
ABSTRACT.....	v
FOREWORD	vi
TABLE OF CONTENT	viii
LIST OF TABLES	xii
LIST OF FIGURES	xiii

CHAPTER I INTRODUCTION

1.1 Background of The Study	1
1.2 Problem Statement	2
1.3 Project Objectives.....	3
1.4 Scope.....	4
1.4.1 System Scope.....	4
1.4.2 User Scope	4
1.5 Significance of Study.....	5
1.6 Summary	5

CHAPTER II LITERATURE REVIEW

2.1 Introduction	7
------------------------	---

2.2 Key Terms And Terminologies	7
2.2.1 Development	7
2.2.2 Data	8
2.2.3 Comprehensive	8
2.2.4 Visualization	8
2.2.5 Hybrid	8
2.3 Review Relevant Literature	9
2.3.1 Exploring	9
2.3.2 Counting	9
2.3.3 Conveying	10
2.4 Review of Related Product.....	11
2.4.1 Tableau.....	11
2.4.2 Power BI	12
2.5 Comparisos of Related Products or Systems.....	13

CHAPTER III METHODOLOGY

3.1 Introduction	14
3.2 Research Design	14
3.2.1 Define Project Requirement	15
3.2.2 Prototype	15
3.2.3 Rapid Construction and Feedback Gathering	15
3.2.4 Finalize Product Or Implementation	15
3.3 Software And Hardware Requirement.....	16
3.3.1 Table Of Software Requirement.....	16
3.3.2 Table Of Hardware Requirement	17
3.4 System Design & Modelling	17
3.4.1 Flowchart	17
3.4.2 Use Case Diagram.....	19
3.4.3 Activity Diagram.....	20

3.4.4 Sequential Diagram	21
3.4.5 Interface Design	22

CHAPTER IV FINDINGS AND DISCUSSION

4.1 Introduction	25
4.2 System Development	26
4.2.1 User Interface	27

CHAPTER V CONCLUSIONS

5.1 Introduction	30
5.2 Project Contribution.....	30
5.3 Discussion Result.....	30
5.4 Conclusion.....	30

BIBLIOGRAPHY

LISTING CODE

APPENDIX

LIST OF TABLES

Table 2.1 Comparison Product	13
Table 3.1 Software Requirement	16
Table 3.2 Hardware Requirement	17

LIST OF FIGURES

Figure 2.1 Tableau Application	11
Figure 2.2 Power BI Application.....	12
Figure 3.1 Web Development Life Cycle Flow	14
Figure 3.2 Flowchart.....	18
Figure 3.3 Use Case Diagram.....	19
Figure 3.4 Activity Diagram.....	20
Figure 3.5 Sequential Diagram	21
Figure 3.6 Register Page	22
Figure 3.7 Login Page	23
Figure 3.8 Input Data Page.....	23
Figure 3.9 Result Visualization Data Page	24
Figure 4.1 Register Page	27
Figure 4.2 Login Page	27
Figure 4.3 Data Input Page.....	28
Figure 4.4 Line Chart Result Page	28
Figure 4.5 Bar Chart Result Page.....	29