CERTIFICATE

OF PROGRAM COMPLETION

No. 290920CT420814042

This is to certify that

Mhd.Fisabiluddin

has successfully completed the **Studi Independen Bersertifikat Program:**

Digital Skills Career Enhancement (DICE) - Modelling And Optimization Techniques In Data Warehousing
during the period of August 14th - December 31st, 2023.

ZAKY MUHAMMAD SYAH
CEO DIBIMBING.ID

LEARNING OUTCOME

NO	PROGRAM	COMPETENCE	HOURS	SCORE	LEARNING OUTCOME DESCRIPTIONS
1	Python Programming	1. Python Fundamentals 2. Operation using Data Types, Conditional Handling, and Looping 3. Data Preparation 4. Object Oriented Programming 5. Parallel Computing 6. Effective Coding	7.5 Hours	84,3	Participants will learn Python using pandas for data manipulation and JSON and YAML for structured data. In this phase, participants will master OOP concepts like class and data class creation and use.
2	GIT	1. Create a Repository 2. Local vs. Remote Repository 3. Commit 4. Push & Pull 5. Clone 6. Branching with Git	2.5 Hours	50	Participants will learn how to manage concurrent project development with Git branching. Participants will master Git version management in collaborative coding environments through hands-on practice and theory.
3	SQL	1. SQL commands 2. Aggregate & conditional statements 3. Join Statement 4. Union Operation 5. Subquery, Rank, Other SQL Operation 6. Entity Relationship Diagram (ERD) 7. SQL Schema 8. SQL Operations & Functions 9. Stored Procedures 10. Query Optimization and Profiling 11. Window Function NoSQL	12.5 Hours	86,5	Participants will learn SQL basics, including commands for filtering data, aggregate statements, and conditional expressions. Join statements, Union operations, Subqueries, Rank, and other complex SQL operations are also covered. The course covers Schema SQL and Entity-Relationship Diagrams (ERD). Participants learn about NoSQL databases and other data storage methods in the curriculum.

NO	PROGRAM	COMPETENCE	HOURS	SCORE	LEARNING OUTCOME DESCRIPTIONS
4	Data Warehouse & Extract Transform Load (ETL)	1. Data Warehousing Fundamentals 2. Architecture of Data Warehouse 3. Data Marts OLAP and OLTP 4. Data Modeling OLAP and OLTP 5. Slowly Changing Dimension (SCD) 1 6. Slowly Changing Dimension (SCD) 2 7. Slowly Changing Dimension (SCD) 3 8. Extract Transform Load (ETL) 9. Initial & Delta Load 10. Data Transformation	12.5 Hours	85	Data Warehousing, from the basics to data organization, will be fully understood by participants. Competent with Data Warehousing solutions by the end, including ETL operation process
5	Docker with Python Airflow	1. Introduction to Docker 2. Docker Volume 3. Docker Network 4. Docker Customize Image 5. Implementing Docker Compose 6. Introduction to Airflow 7. Airflow with Docker 8. Configuration Airflow and Database 9. Airflow Dags & Sensor 10. Implementing Airflow DAGs 11. Scheduling DAGs with Airflow 12. Maintaining and monitoring Airflow workflows 13. Building production pipelines in Airflow 14. Introduction to Batch 15. Basic Concept of Streaming 16. Mini & Micro Batch	12.5 Hours	73,5	Building production pipelines with Airflow will help participants learn Docker and Airflow for containerization and workflow management, including batch & stream processing to improve data warehousing models.

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6	Web Scraping & API	1. Introduction to API 2. Practice simple API using Postman 3. Web scraping using requests, beautifulSoup, and selenium.	5 Hours	91	Participants will learn how to use web-based data to improve data warehousing modeling and optimization, enhancing their career skills in data collecting and integration.
7	Data Governance	1. Data Governance Basics 2. Privacy and Policy Data 3. Data Catalog 4. Discoverability 5. Provisioning Data Catalog & Discoverability Platform using Docker	2.5 Hours	84	Participants will learn to adopt strong data governance policies and promote responsible data management utilizing data warehousing modeling and optimization methodologies.
8	Final Project	1. Final Project Introduction 2. Final Project Group Mentoring 3. Final Project Presentation	10 Hours	63	Participants will create a business-specific data warehousing solution to demonstrate their expertise.