UJIAN AKHIR SEMESTER GANJIL
TAHUN AKADEMIK 2025/2026

Mata Kuliah	: Business Intelligence (Reg & IP)
Hari/Tanggal	: Senin, 12 Januari 2026
Jam Ujian	: 08.00 WIB
Waktu Pengumpulan	: Dikumpulkan di GC maks 12 Januari 2026.
Sifat Ujian	: Take Home dan tidak boleh bekerja sama
Dosen Penguji	: Dr. RB Fajriya Hakim, M.Si.

CPL:
KU(b) Mampu menunjukkan kinerja mandiri, bermutu, dan terukur
KU(e) Mampu mengambil keputusan secara tepat dalam konteks penyelsaian masalah di bidang keahliannya, berdasarkan hasil analisis informasi dan data

By accessing the following website,

"9 Real-World Power BI Projects with Datasets"

https://www.mygreatlearning.com/blog/power-bi-projects-with-datasets/

In the subsection *'Intermediate Projects'*, there are three projects, each with its corresponding objectives.

1. Customer Churn Analysis
Objective: Create an analytical model to figure out why customers are leaving (churning). The dashboard should show churn rates and highlight the common traits of customers who are likely to cancel their service.

2. Website Traffic & SEO Analysis
Objective: Analyze website traffic data (from a source like Google Analytics) to understand user behavior, where visitors come from, and which pages are performing best. The goal is to find actionable insights to improve Search Engine Optimization (SEO).

3. Supply Chain & Logistics Dashboard
Objective: Create a report to monitor key parts of a supply chain. You'll track inventory levels, shipping times, supplier performance, and transportation costs to find bottlenecks and ways to be more efficient.

Please select one of the projects and, in accordance with the objectives of the chosen case, complete it by building a dashboard using R or Python following the business intelligence steps below,

1. Extract, Transform, Load
    a. Extracting data from sources

b. Transforming data to fit analytic needs
c. Loading data into business systems for analysis
2. Data Cleaning
    a. Summarizing your data for inspection
    b. Finding and fixing flawed data
    c. Converting inpust to data types suitable for analysis
    d. Adapting string variables to a standard
3. Exploratory Data Analysis
    a. Implementing exploratory data analysis
    b. Analyzing a single data variable
    c. Analyzing two variables together
    d. Exploring multiple variables simultaneously
4. Linear Regression for Business cases
    a. Implementing linear regression
    b. Checking model assumptions
    c. Interpreting model output
    d. Refining data for simple linear regression
5. Data Mining with Cluster Analysis
    a. Explaining clustering analysis
    b. Partitioning using k-means clustering
    c. Clustering using hierarchical techniques
6. Time series analysis
    a. Analyzing time series data with linear regression
    b. Introducing key elemenst of time series analysis
    c. Building ARIMA time series models
7. Visualizing the Data's Story
    a. Visualizing data
    b. Plotting with ggplot2 or python graph
    c. Geo-mappipng using Leaflet
    d. Creating Interactive graphics using rCharts
        (If Python is used, `seaborn` (with `matplotlib`) can be applied for plotting, `folium` for geo-mapping, and `plotly` for creating interactive graphics)
8. Web Dashboards with Shiny
    a. Creating a basic shiny app
    b. Creating a project case based shiny app
    c. Deploting your shiny app
        (If Python is used, web dashboards can be developed using Dash. A basic Dash application can be created, extended into a case-based project dashboard, and deployed to a cloud platform similarly to Shiny apps in R)

By optimizing these steps and incorporating additional statistical or machine learning methods as needed, the objectives of each case are expected to be addressed appropriately.

The workflow steps and the resulting dashboard (which may be provided as a link) should be documented (in pdf) and submitted via the designated Google Classroom by the specified deadline.

Kriteria Penilaian:
Ketepatan analisis dan jawaban (30%)
Kualitas visualisasi dan interpretasi data (20%)
Kesesuaian metode dan tools yang digunakan (20%)
Kualitas laporan dan presentasi jawaban (15%)
Kreativitas dalam memberikan rekomendasi strategi layanan (15%)

Verifikasi Soal Ujian Akhir Semester Ganjil TA 2025/2026				
Kesesuaian materi dengan SAP	Kelengkapan Informasi Soal	Pelaksana Verifikasi	Tanggal Verifikasi	Paraf
Sesuai/kurang sesuai/tidak sesuai	Lengkap/kurang lengkap/tidak lengkap			