Graduation Project Proposal Form

1. Project Information

- **Project Title:** Correlation Analysis: Gold, USD, Interest Rate and Stock Market Indices
- **Course/Track:** Data Analyst Specialist
- **Team Members:**
    1. Moataz Mohamed Hassan Ahmed
    2. Gehad Hamdy Abdelhameed
    3. Tamer Hassan Abdelfatah
    4. Nada Magdy Abdelnaby Elsaid

2. Project Overview

Objective:

- Study and analyze the relationship between major economic and financial indicators in Egypt over the last 5 years:
    - Gold Price
    - USD to EGP Exchange Rate
    - Bank Interest Rate
    - EGX30 and EGX100 Stock Market Indices
- Provide a clear visualization through dashboards to help in better understanding and data-driven decision making
- Support young and small investors in the stock market by offering simplified analyses through easy-to-use visual tools.

Scope of Work:

- Data collection and preparation (5 years of daily/monthly data).
- Use Excel & Power Query for cleaning and preparation.
- Calculate correlation between indicators.
- Create dashboards in Power BI / Tableau.
- Simplify results interpretation for beginner/intermediate users.

Expected Outcomes:

Interactive dashboards that show:

- Trends of gold, USD, interest rate, and stock indices.
- Correlation strength between variables.

Practical insights such as:

- Is gold price strongly related to USD?
- Does a decrease in interest rates push the stock market up?
- Does gold act as a safe investment during market downturns?

3. Problem Statement

- Beginners and decision makers face challenges in understanding how economic indicators affect each other.
- Lack of simple visual tools to explain these relationships.
- Young and small investors in the stock market who use mobile trading applications also need
- simplified and easy-to-understand analyses to guide their decisions.

4. Proposed Solution

Technologies Used:

- Excel & Power Query for cleaning data.
- Pivot Tables for analysis.
- Power BI / Tableau for visualization.
- Python (basic) for correlation calculations

System Architecture:

- Data Source: Excel datasets (clean & organized).
- Data Preparation: Power Query.
- Data Analysis: Excel / Python.
- Visualization: Power BI / Tableau.
- Output: Interactive Dashboard + Report

5. Resources Needed

- Five years of historical data on gold prices, USD exchange rates, interest rates, and stock market indices.

6. Approval

- **Instructor/Advisor:** Mohamed El-Najjar
- **Signature:** .....