

Gold Seeker

Your ultimate companion for making informed gold purchasing decisions! Using historical gold price data, our machine learning recommendation system predicts the lowest gold prices for the next 3 months and recommends three e-commerce stores offering gold at prices that are close to the predicted values. Don't miss out on the best gold deals; let Gold Seeker be your guide to find your affordable gold.



Recommender System and Price Prediction for 1 gram of Gold Price

Introduction

Project Background: Investing in gold has become one of the popular and considered safe investment options in recent years. However, the decision to buy gold is often based on its volatile prices, and investors often struggle to determine when and where they should buy gold. Fluctuating gold prices can leave consumers confused and unsure about when to make gold purchases, potentially resulting in missed profit opportunities or suboptimal purchases.

Objective: Gold Price Prediction, Gold Store Recommendations, Time and Money Savings, and Gold Investment Education

Timeline

Planning & Preparation

We'll build a user-friendly gold buying platform with real-time prices, filtering, and secure payments, while simultaneously scraping data for accurate price updates.

10 / 10 / 2023

Data engineering project

Model Training and Implementation

We'll leverage a time series model for price forecasting and a recommender system to offer personalized gold product recommendations for our users.

12 / 10 / 2023

Deployment

9 / 10 / 2023

finalizing the dataset

Data Processing and Data Exploration

Web scraping and Dataset Preprocessing (Automated using a Python scheduler).

11 / 10 / 2023

Data analyst and scientist

Evaluation and Reporting Results

We deployed our model on Hugging Face, and the results are highly relevant and ready for use.

Timeline from brainstorming to release the project.

Recommender System and Price Prediction for 1 gram of Gold

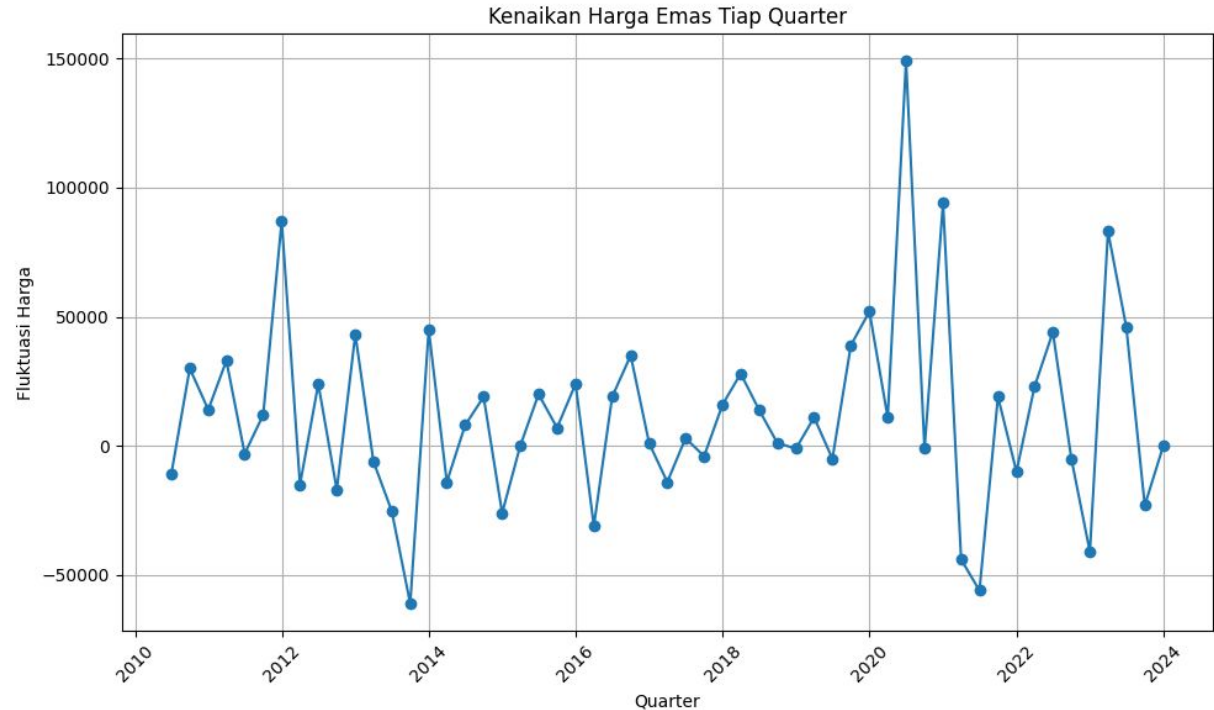
Methods

For the recommender system, we used a custom metric by taking into account the number of products sold, the rating of the product, and the difference of price between the product and the latest gold price. We only recommend products that contain the word “Antam” and weigh 1 gram.

For the gold price prediction, we used Moving Average to predict gold price in the next 3 months based on the last 10 years of gold prices.

Data Analytic

The quarterly gold price data from 2010 to 2023 reflects significant price fluctuations. There is no consistent trend; instead, irregular price fluctuations are observed. Some quarters experience substantial price increases, while others see declines. There are quarters with significant price changes, possibly influenced by external events or market factors. The most recent data indicates a notable price increase following several quarters of price declines.



Results

These are the screenshots of our deployment. On the right, is our gold deals recommendations. On the bottom, is our prediction of gold price for the next 3 months.



Based on our data, we find the best 1 gram of Antam gold deals for you to choose.

Our recommendation:

Product 1

Product: ANTAM LM EMAS 1 Gram, LOGAM MULIA TERBARU

Price: Rp1095000

Seller: de yellow official store

Location: Kota Jakarta Utara

Sold: 37000

Rating: 4.9

Product Link: <https://www.blibli.com/p/antam-lm-emas-1-gram-logam-mulia-terbaru/rs-INN-70002-00010?ds=INN-70002-00010-00001&source=SEARCH&sid=dd088ef6773c8889&metaData=SaQjw+XIAzODKlCuUgCEltoPtoRv+aZ8Rk+wg mD.JyHvMmvyb+YvHtpZfYXloWnbbssFoHe0ux6oJET/XRXqCLib/SBydIB1M3IagMuoteMxUHRnOXILc4mb rEUS5AX5uWU8cHZPPj+WC4axMhQ3XnpIdxJir/JaCG+yveKp76x4.mIOWopxSWj5X06vdV3BXnKHUbtgm EglApnzokVZvUICIBFZLamNyQFS17OfcBRRGmWw34WIEMAXrCc1MtsIaPc2G654fwHSA3DsbVAIRW0Ioslx +5XmC4HxT8JM/RD55r8MN6K/oKapIdyYP&cnc=false&pickupPointCode=PP-3139418&pid=INN-70002-00010>

The Ongoing Challenges in Data Analysis, Data Engineering, and Data Science

Challenges

The Challenge with Data Engineering is when we try to webscrape blibli.com sometimes the website appears to not showing the products. So we decide to make an Error Handling to solve it. When the error occurred, the script will try to re scrape the web until its success.

The limitation of this project also consist that we can't deploy the scheduler system since the limitation of the deployment platform. To resolve this limitation, it needs more advanced platform like Kubernetes

The Challenge with Data Analysts is to analyze and provide accurate insights that facilitate users in making informed decisions, especially in specific cases.

The challenges with Data Scientist are finding the best model for price prediction and finding the best metric to compare products. We settled with using Moving Average model to predict the gold price and created a custom metric to compare the gold products.

Accomplishments Achieved

Success Story

In Data Engineering we've achieved to scrap the data from three e-commerce(Tokopedia,BukaLapak,Blibli) and manage to clean the data to be used for Data Analyst and Data Science for machine learning model in recommender system and gold price predictor

In our data analysis, we've successfully provided an overview of the quarterly gold price increases, benchmarked against the gold prices on the Antam website over the past ten years.

In our data science efforts, we've also accomplished the creation of a predictive pricing model based on time series analysis and a personalized recommendation system using data from Indonesia's e-commerce platforms.

Summary & Corporate Influence.

Conclusion & Business Impact

With "Gold Seeker," users can easily predict gold prices for the next 3 months and receive recommendations from trusted e-commerce stores, helping them make informed investment decisions and save money. The business impact includes increased user satisfaction, potential business partnerships, and data-driven decision-making that can drive the success and growth of the application.

Thank You

Rohmat Wahyu

FTDS-RMT-022
Data Analyst

0852 5844 4768
rohmatwahyui@gmail.com

Harits Ghiffari Hanif

FTDS-RMT-022
Data Scientist

0878 8331 6441
holyman109@gmail.com

Syechrifanka Yoffi

FTDS-RMT-022
Data Engineer

085156580297
yoffieraka@gmail.com

Mujahid

FTDS-RMT-022
Data Engineer

0822 8109 2269
mujahid.170997@gmail.com