

# aws DSCI 6007-Final Project

STOCK MARKET ANALYSIS  
USING AWS

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# TEAM

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# Introduction

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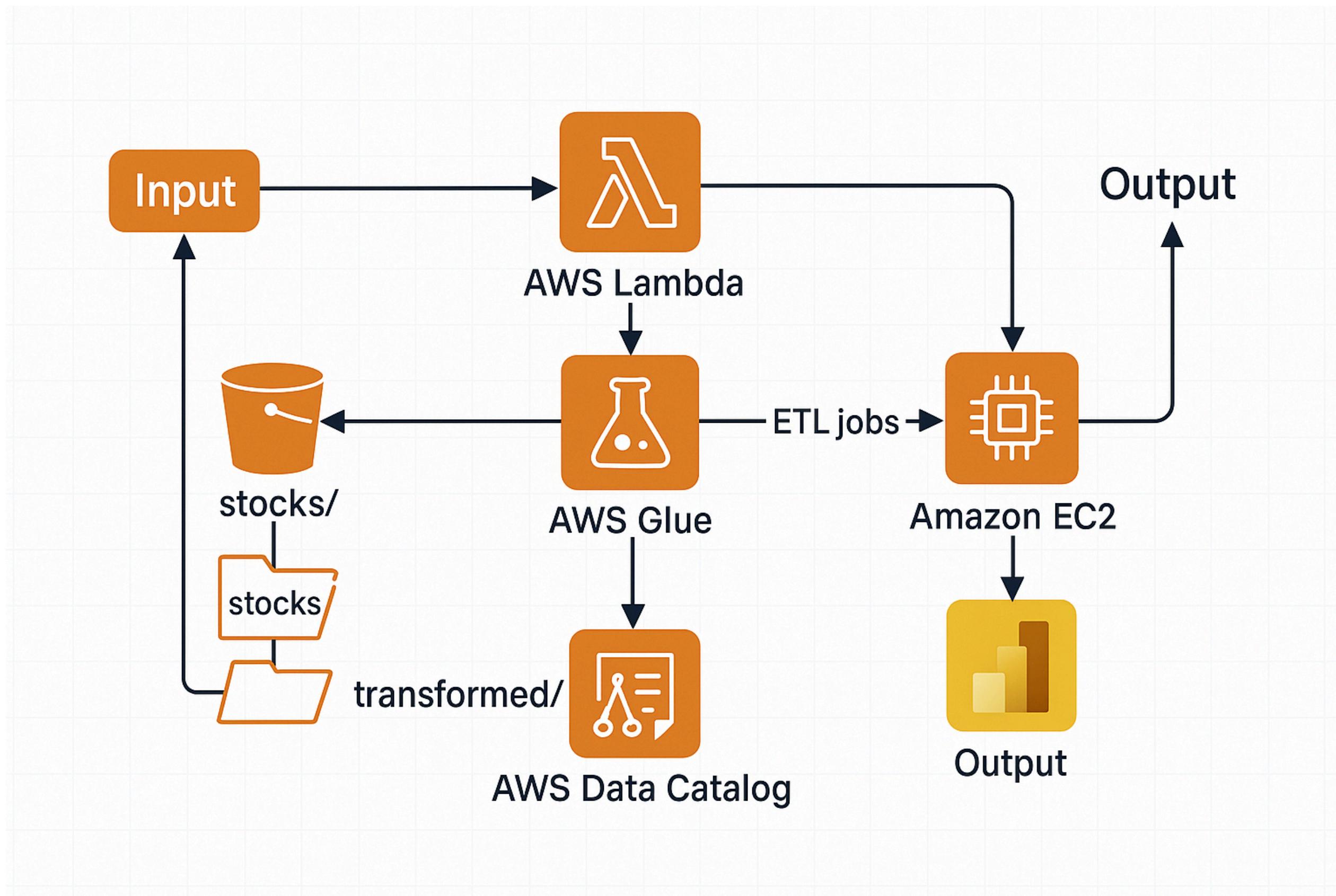
- The stock market is highly volatile and requires robust data processing for accurate insights.
- Cloud computing enables scalable and efficient analysis of large financial datasets.
- AWS (Amazon Web Services) provides powerful tools for real-time data streaming, storage, and machine learning.
- This project leverages AWS services to analyze stock market trends, predict price movements, and visualize key insights.

# Problem Statement

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- There is a need for an automated, scalable, and efficient system to fetch, process, and analyze real-time stock market data in order to derive actionable insights.
- Traditional methods of stock data analysis often rely on manual data collection, local storage, and offline visualization tools, which are not scalable or real-time. This project solves the problem by implementing a cloud-based pipeline that automatically collects data from a public API, processes it using AWS services, and provides up-to-date visual analytics.

## Architecture diagram of the solution: Example



# Lessons learned

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- **Efficient Data Processing with Glue & S3:** AWS Glue transforms raw CSV stock data into Parquet format, which improves performance and reduces storage size when stored in Amazon S3—ideal for big data workflows.
- **EC2 Enables Custom Data Handling:** By replacing RDS with Amazon EC2, we gain full flexibility over how processed data is stored, further transformed, and prepared for visualization —no need to rely on managed databases.
- **Power BI Adds Interactive, Professional Dashboards:** Connecting Power BI directly to EC2 or shared data sources enables rich, customizable visual analytics that are ideal for financial trend exploration and stakeholder reporting.

# Demo

Screenshot of the AWS Console Home page for the US East (N. Virginia) region.

The page displays the following sections:

- Recently visited:** AWS Glue, Amazon EventBridge, S3, EMR, Lambda, EC2, Athena, Aurora and RDS, CloudWatch, VPC.
- Applications:** 0 applications. Region: US East (N. Virginia). Create application button.
- Welcome to AWS:** Getting started with AWS, Training and certification, What's new with AWS?
- AWS Health:** Open issues: 0 (Past 7 days), Scheduled changes: 0 (Upcoming and past 7 days), Other notifications: 0 (Past 7 days).
- Cost and usage:** Current month costs: \$29.65 (↑ 253% compared to last month for same period), Forecasted month end costs: \$41.18 (↑ 197% compared to last month's total costs). Savings opportunities: Access denied. Cost (\$) chart showing spending over time.

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# Thank you



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