

**MIS4321**

**Computational Finance and**

**Algorithmic Trading**

Fall 2025

Lecture #5

Financial Data Storage

# **Financial Data**

Financial data refers to **quantitative information** that is used by organizations **to make financial decisions**.

It is essentially data concerning a company's financial health and performance.

This data includes information about an **organization's income, expenses, assets, liabilities, and cash flow**.

This vital information is **gathered from traditional sources**, such as public documents and external data sources.

It can be **historical or current and collected** on an ongoing, periodic (e.g., quarterly, annually), or as-needed basis (e.g., related to a transaction).

# **Financial Data**

**The fidelity of financial data** is of the utmost importance.

**Financial data quality** is based on its:

- Accuracy — to be relied upon for confidently making decisions.
- Completeness — to provide a comprehensive view of an organization's financial well-being.
- Timeliness — to support fast decision-making

# Financial Data **Types**

Financial data is categorized into **two main types**: traditional financial data and alternative data.

**Traditional financial data:** Traditional financial data refers to information from long-established sources, **such as financial statements, press releases, and SEC (Securities and Exchange Commission) filings**. Financial information about assets consists of the organization's real, personal, tangible, and intangible property.

**Alternative financial data:** It is external data that an organization does not directly report. It is usually gathered in three ways:

1. Acquiring it from raw data sources (e.g., sensors, Satellite images)
2. Licensing third-party data
3. **Web scraping** (the use of a program or algorithm to extract and process large amounts of data from the web.)

# Financial Data **Types**

Examples of alternative financial data include:

- Credit card transactions
- Email receipts
- Financial transactions
- Geolocation data
- Mobile app usage
- Point-of-sale transactions
- Price trackers
- Product reviews
- Satellite images
- Shipping container receipts
- Shipping trackers
- Social media posts
- Web browsing activity
- Website usage

# **Fidelity of Financial Data**

Financial data is an invaluable resource for most stakeholders in an organization—internal and external.

While the information included in financial data sets can be interpreted differently by various audiences, **the raw information must be protected to ensure the integrity of downstream decisions.**

For this reason, **regulations abound around creating, handling, and safeguarding financial data.**

# Stock Tickers

A stock ticker is **a report** of the price of **certain securities**, updated continuously throughout the **trading session** by the various stock market exchanges.

- It reports transaction and price data for a security, updated continuously throughout the day.
- It shows the **ticker symbol**, the **price change** and **percentage change** from the previous session's close, and often **the volume of the shares** being traded.
- Some **tickers color code information** to reflect the direction of the price, with **green for higher**, **red for lower**, and a neutral color like **gray for no change**.

# Stock Tickers



**Ticker Symbol:** It is a unique symbol to identify the company when their securities are traded publicly. It is a code around one to four letters long.  
(Apple Inc. (AAPL))

**Price Traded:** Price per share for the specific company.

**Direction:** It indicates whether a particular stock is trading at a higher or lower price compared to the previous closing day.

**Change Amount:** Reflects the difference in price compared to the previous closing day.

**Percentage Change:** The difference in price in percentage compared to the previous closing day.

# Stock Tickers

**Shares traded** is the total **volume of trade** being realized.  
(B= 1 billion, M= 1 million, K=1.000)

**A trading session** is the primary trading hours and locale for a given asset. Regular trading in U.S. stocks has a clearly defined trading session from 9:30 a.m. to 4:00 p.m. Eastern Time (ET). Different markets may each have their own working hours, with forex markets encompassing many overlapping sessions across different world time zones.

**A tick** is the minimum incremental amount at which you can trade a security. The minimum **tick size** for stocks trading above \$1 is one cent. Larger tick sizes decrease trading activity and raise trading costs.

# Download and install

- XAMMP:
- <https://www.apachefriends.org/tr/download.html>
- Anaconda:
- <https://www.anaconda.com/download>
- MATLAB from marmara university:
- <https://bidb.marmara.edu.tr/hizmetler/yazilimlar-ogrenci>

# Next week

- Processing Financial Data

Thank you for your participation 😊