Session -1

We will learn around the Basic Concepts of Derivatives and it various important terminologies. This section will help us to start understanding DERIVATIVES from basics and build up our knowledge there upon.

Duration 20-25 Minutes

Derivative in our Daily Life

How many of you eat Paneer every day?

How many of you drink fruit Juice every day?

Price of Paneer

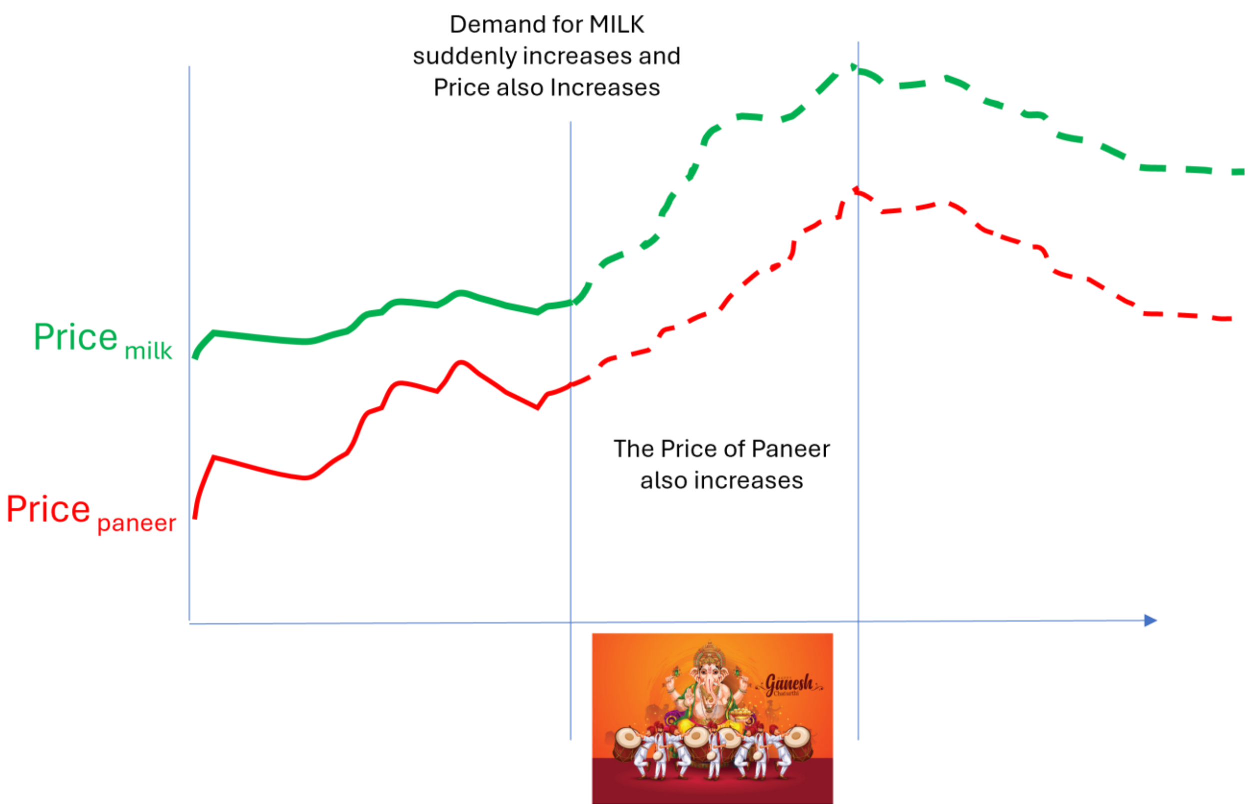
↓

Price of Milk

Price of Fruit Juice

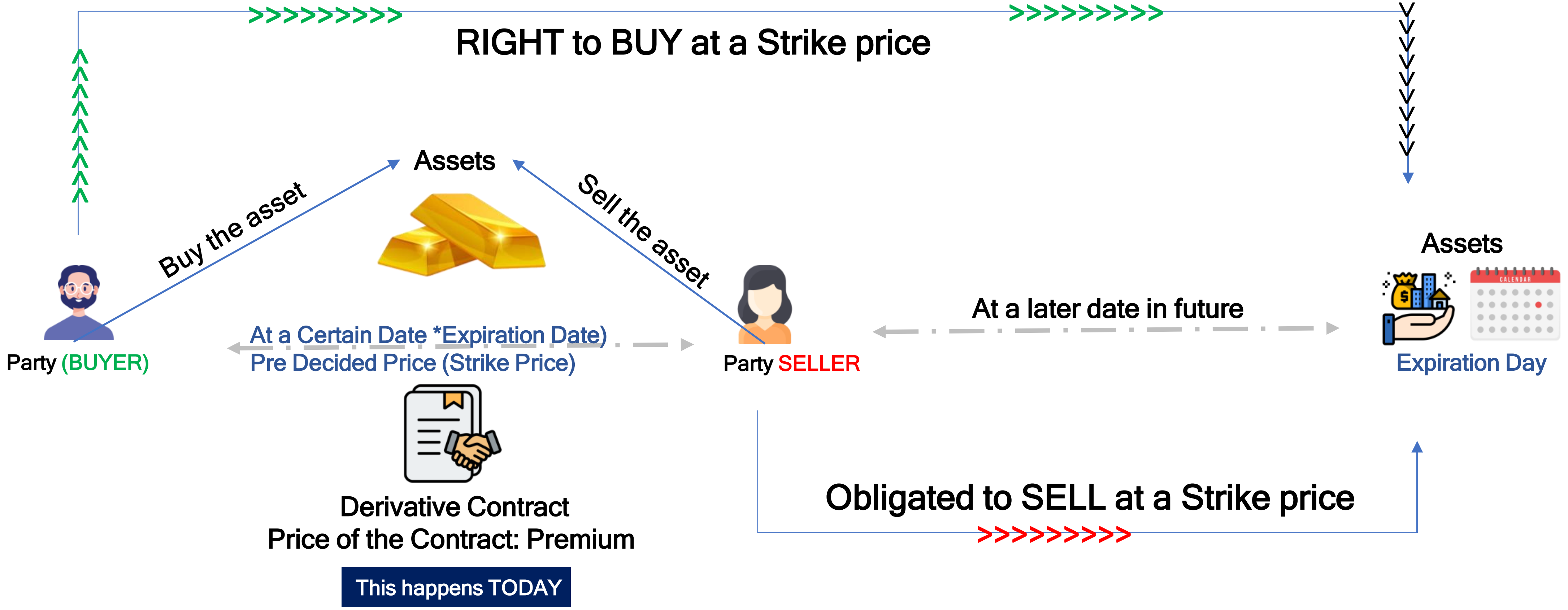
↓

Price of Fruit



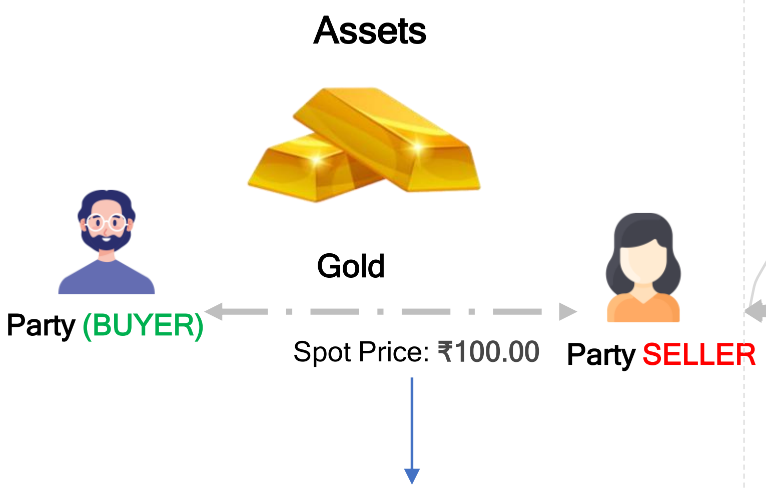
What is Derivative?

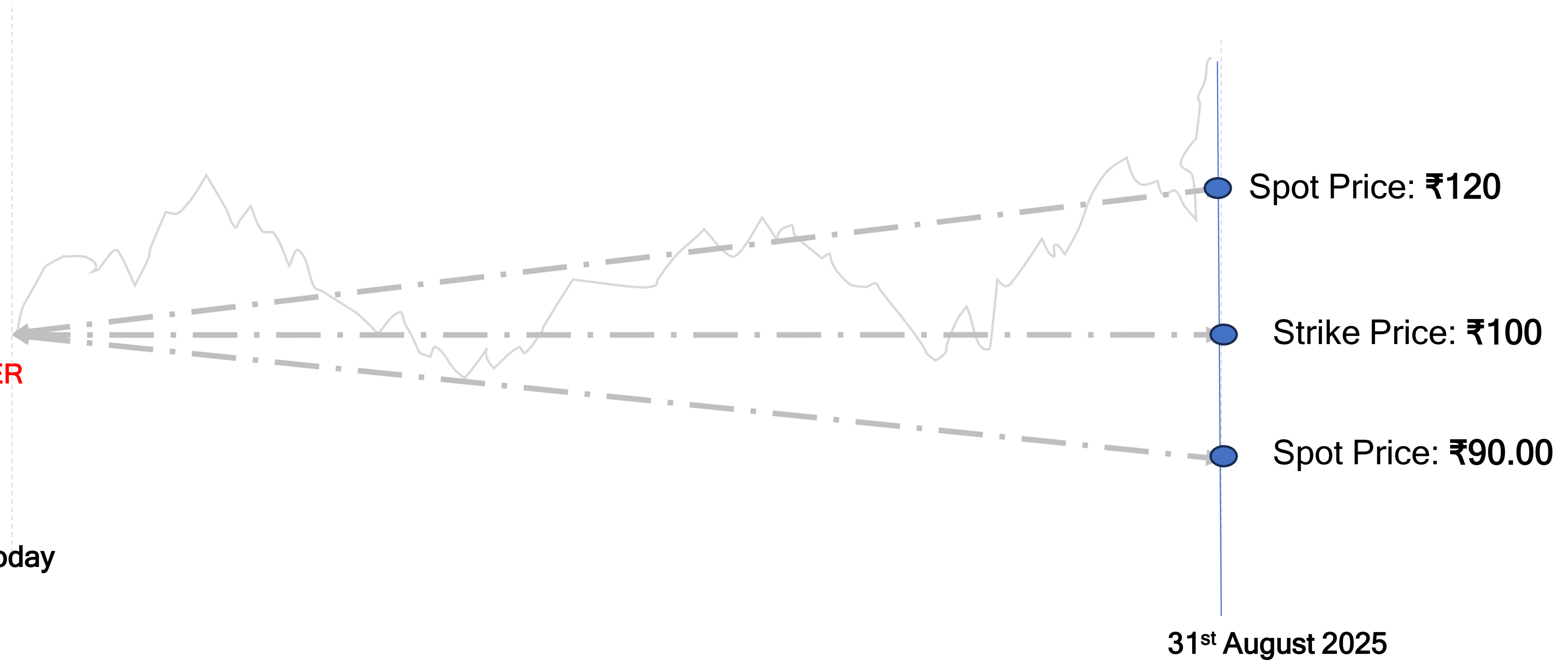
A derivative is **a financial instrument whose value is derived from the value of one or more underlying**, that can be commodities, precious metals, currency, bonds, stocks, stocks indices, etc. Four most common examples of derivative instruments are Forwards, Futures, Options and SWAPs



Derivative Transaction - Illustration

A Contract option at a strike of Rs. 176 is selling at a premium of Rs.18. At what price will it break even for buyer of the option?





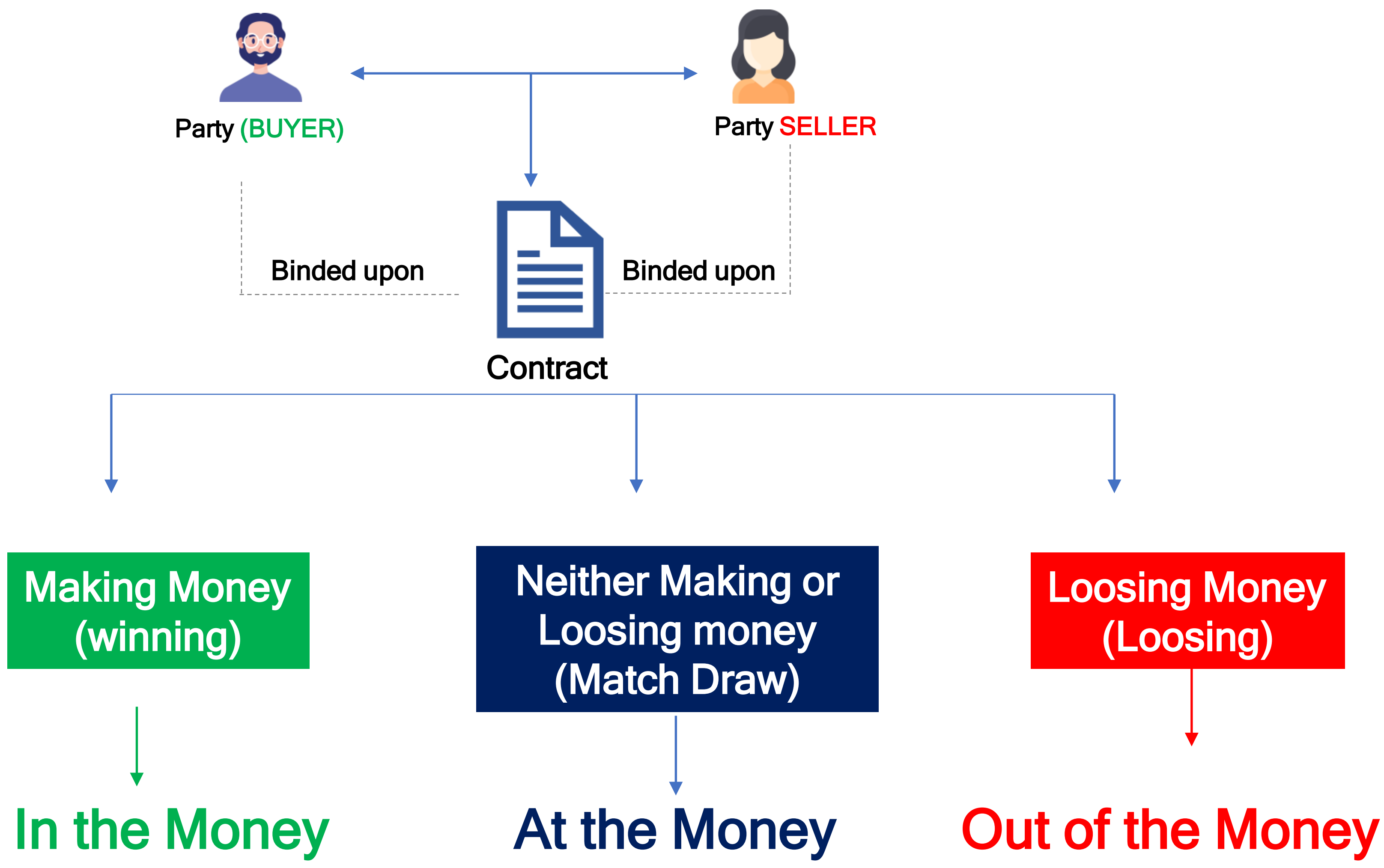
Derivative Contract Price:

2 Transaction:

1. BUYER pays a **premium** to book the asset to BUY at 100 at a later date
2. Seller agrees to sell the Asset for 100 at the later date.
3. CONTRACT bind both the parties

This happens TODAY

What is Winning and Lossing?



Learning ITM & OTM

In derivative trading—especially in **options trading**—the terms **In the Money (ITM)** and **Out of the Money (OTM)** refer to the **moneyness** of an option, i.e., whether exercising the option would be profitable or not based on the **current market price** of the underlying asset.

The term derivative refers to a type of **financial contract whose value is dependent on an underlying asset**, group of assets, or benchmark. A derivative is set between two or more parties that can trade on an exchange or over-the-counter (OTC).

These contracts can be used to trade any number of assets and carry their own risks. Prices for derivatives derive from fluctuations in the underlying asset. These financial securities are commonly used to access certain markets and may be traded to hedge against risk.

Derivatives can be used to either mitigate risk (**hedging**) or assume risk with the expectation of commensurate reward (**speculation**). Derivatives can move risk (and the accompanying rewards) from the risk-averse to the risk seekers.

$$\left\{ \frac{\text{Derivative}}{\text{Underlying Asset}} \right\}$$

1. Any thing that has Mark to market (M2M) Value
2. Equity
3. Currency
4. Interest Rate
5. Commodity
6. Indices

For example - Currency Derivative

A Currency Derivative is a financial contract whose value is derived from the exchange rate of two currencies. These instruments are used for hedging, speculation, and arbitrage in the foreign exchange (forex) market. Businesses and investors use currency derivatives to manage foreign exchange risks due to fluctuations in currency values.

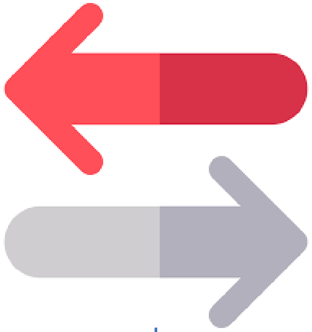
Currency Futures means a standardised foreign exchange derivative contract traded on a recognized stock exchange to buy or sell one currency against another on a specified future date, at a price specified on the date of contract, but does not include a forward contract.

The NSE launched its currency futures trading platform in August 2008, in a separate segment called currency derivatives segment. Initially, futures contracts on USD-INR were introduced for trading and from February 2010, futures on EUR-INR, GBP-INR and JPY-INR were launched. Further in 2018, Cross Currency Futures contracts on EUR-USD, GBP-USD and USD-JPY were also introduced.

Derivative

Currency

Types of Derivative Products / Strategies



1 Forward Contract

2 Futures Contract

3 SWAP Contract

4 OPTIONS Contract

Objective: Derivative Trading

Arbitrage: In economics and finance, arbitrage is the practice of taking advantage of a difference in prices in two or more markets - striking a combination of matching deals to capitalize on the difference, the profit being the difference between the market prices at which the unit is traded.

Speculations: In finance, speculation is the purchase of an asset (a commodity, goods, or real estate) with the hope that it will become more valuable shortly. It can also refer to short sales in which the speculator hopes for a decline in value.

Many speculators pay little attention to the fundamental value of a security and instead focus purely on price movements.[1][citation needed] In principle, speculation can involve any tradable good or financial instrument. Speculators are particularly common in the markets for stocks, bonds, commodity futures, currencies, cryptocurrency, fine art, collectibles, real estate, and financial derivatives.

Hedging: A hedge is an investment that is selected to reduce the potential for loss in other investments because its price tends to move in the opposite direction. This strategy works as a kind of insurance policy, offsetting any steep losses in other investments.

The term hedging can be used to describe diversifying a portfolio by buying shares in a conservative bond fund to offset potential losses in more volatile stock funds.

What is the eligibility for Derivative in Capital Markets?

1

Top 500 Stocks

(in terms of market capitalisation)

2

MQSOS > 75 lakhs

MQSOS stands for Median Quarter Sigma Order Size. In the context of stock markets, it refers to the median order size required to move a stock's price by one-quarter of its standard deviation over the past six months. It's a metric used to assess a stock's **liquidity** and its suitability for inclusion in the derivatives segment.

3

MWPL > INR 1500 Cr

MWPL is: "Total open interest allowed on a particular stock derivative across all market participants put together." Generally, MWPL is generally 20% of the free-float market capitalization of the company and Free Float = Total Shares - Promoter's holding. So **MWPL = 20% of Market-cap of non-promoters shares**.

Example: Reliance ka MWPL agar 500 lakh shares ka hai aur open interest pahunch gaya 475 lakh (95%) – toh Reliance F&O ban mein chala jaayega.

4

Average Daily Delivery Value > 30 Cr

The average daily delivery value represents the average dollar amount of a stock traded daily where the shares are physically delivered to the buyer's demat account. It's calculated by taking the total delivery value over a period and dividing it by the number of trading days within that period. This metric is often used to assess the liquidity and activity of a stock, as delivery volume signifies long-term investment interest.

SPAN in Derivatives?

SPAN = Standard Portfolio Analysis of Risk. It is a risk-based margining system developed by CME (Chicago Mercantile Exchange) and used by NSE for derivatives margin calculation in India.

1. SPAN decides how much margin to keep with the exchange to initiate trading around a derivative contract
2. Derivatives = high leverage = high risk. To avoid any *default* or *badla* type scenes, NSE ensures that traders keep **enough margin** for **worst-case price movements**.
3. SPAN checks **worst possible loss** in different market scenarios – like:
   a) Underlying price going up/down
   b) Volatility changing
   c) Time decay (theta effect)
   d) Interest rate shifts (for some instruments)
   e) Based on this, SPAN calculates the **maximum probable loss** – and that becomes your **SPAN margin**.
4. NSE uses **SPAN software** (called **NSCCL SPAN**)
5. SPAN margins are recalculated every day
6. If market becomes volatile (like budget day, war news, etc.), margin increases

SPAN Vs Margin

🔍 Feature	▯ SPAN Margin	💰 Total Margin (SPAN + Exposure)
Full Form	Standard Portfolio Analysis of Risk	Includes SPAN + Exposure margin
Purpose	To cover **maximum potential loss** in worst market scenario	To provide **extra cushion** beyond SPAN
Risk Coverage	Calculated using **risk models & simulations**	Extra buffer set by NSE for volatility
Mandatory?	✅ YES – Required for all futures & short options	✅ YES – You must maintain total margin
Who Needs It?	Option **sellers** and **futures traders**	Same – for any position involving leverage
Who Calculates?	NSE using SPAN software	NSE decides exposure %; brokers implement
Changes Daily?	Yes (based on volatility, price, etc.)	Yes (goes up in volatile markets)

A **zero-sum game** is a situation in which **one person's gain is exactly balanced by another person's loss**.

Derivative trading is typically a Zero-Sum Game as One party's gain is another party's pain and that is the basis of a ZERO-SUM GAME !!

Mathematically: **Total Gain + Total Loss = 0**

Player	Action	Entry Price	Exit Price	P&L
A	Buy (Long)	₹ 24,000	₹ 24,300	₹ 15,000
B	Sell (Short)	₹ 24,000	₹ 24,300	−₹15,000

Net Gain + Net Loss = ₹15,000 – ₹15,000 = ₹0

Important Concepts in Derivatives

Open Interest (OI) in derivative trading (like futures and options) means the total number of contracts that are currently active and have not been closed or settled.

If you and I **create a new futures contract – OI goes up by 1**.

If one of us later sells off or settles the contract – OI goes down by 1.

Important points:

Open Interest tells you about market participation – how many contracts are still alive.

More OI usually means higher liquidity (easy to enter/exit trades).

It is different from trading volume – volume is the number of contracts traded in a day, but OI shows how many contracts are still open.

In short:

☞ OI rising = new money entering the market (stronger trends).
☞ OI falling = contracts getting closed (trends weakening).

Example:
Suppose you hear:
"The Nifty 22,000 Call Option has an Open Interest of 1.7 lakh contracts."

What it means:
It means **170,000 call option contracts** at the 22,000-strike price are open – traders have positions but haven't exited yet.

Question:
Client A has purchased 10 contract of the December series and sold 7 contracts of the January series of the NSE Nifty futures. **How many lots will get categorized as regular open positions?**

Some Important Definitions

Term	Meaning
Spot Rate	Current exchange rate for immediate delivery.
Forward Rate	Agreed exchange rate for future delivery (no exchange trading).
Futures Contract	A standardized contract to buy/sell currency at a future date and price, traded on an exchange.
Options Contract	Gives the right, but not obligation, to buy/sell currency at a set price before expiry.
Strike Price	The fixed price at which the currency can be bought/sold in an option.
Premium	The cost paid to buy an options contract.
Expiration Date	The date when a futures or options contract ends.
Lot Size	The **minimum quantity** of shares in a derivative contract. Example: Nifty = 50 units, Reliance = 250 units
Margin	A **deposit amount** required to take futures position. It's like security deposit. **Initial Margin**: Upfront amount to enter the trade. **Maintenance Margin**: Minimum amount to keep position open.
Settlement	T+1 (Cash Settlement + Physical Settlement)

Some Important Definitions

Mark-to-Market (MTM)	Daily settlement of gains and losses based on market price changes.
Hedging	Reducing risk of currency movements using derivatives.
Speculation	Trading currency derivatives to make profits from exchange rate changes.
Arbitrage	Earning risk-free profit by exploiting price differences in different markets.
Currency Pair	The two currencies involved in a trade (e.g., USD/INR, EUR/USD).
Leverage	Using borrowed funds to increase exposure with a smaller initial investment.
Bid Price	Price at which the market is willing to buy the currency.
Ask Price	Price at which the market is willing to sell the currency.
Spread	Difference between bid and ask price (cost of trading).

RISKS in DERIVATIVES

In derivatives trading, **risk** is a major consideration because derivatives are leveraged instruments – they can amplify both gains and losses. Here are the main types of risks in derivatives:

1. Counterparty Risk
2. Pricing Risk
3. Liquidity Risk
4. Legal Risk
5. operational Risk

Counterparty risk is the risk of loosing money due to failure of commitment of either parties in a trading scenario. This may happen if a buyer fails to pay and the seller fails to deliver the asset / underlying and this happens when the notional values can far exceed the size of the underlying securities

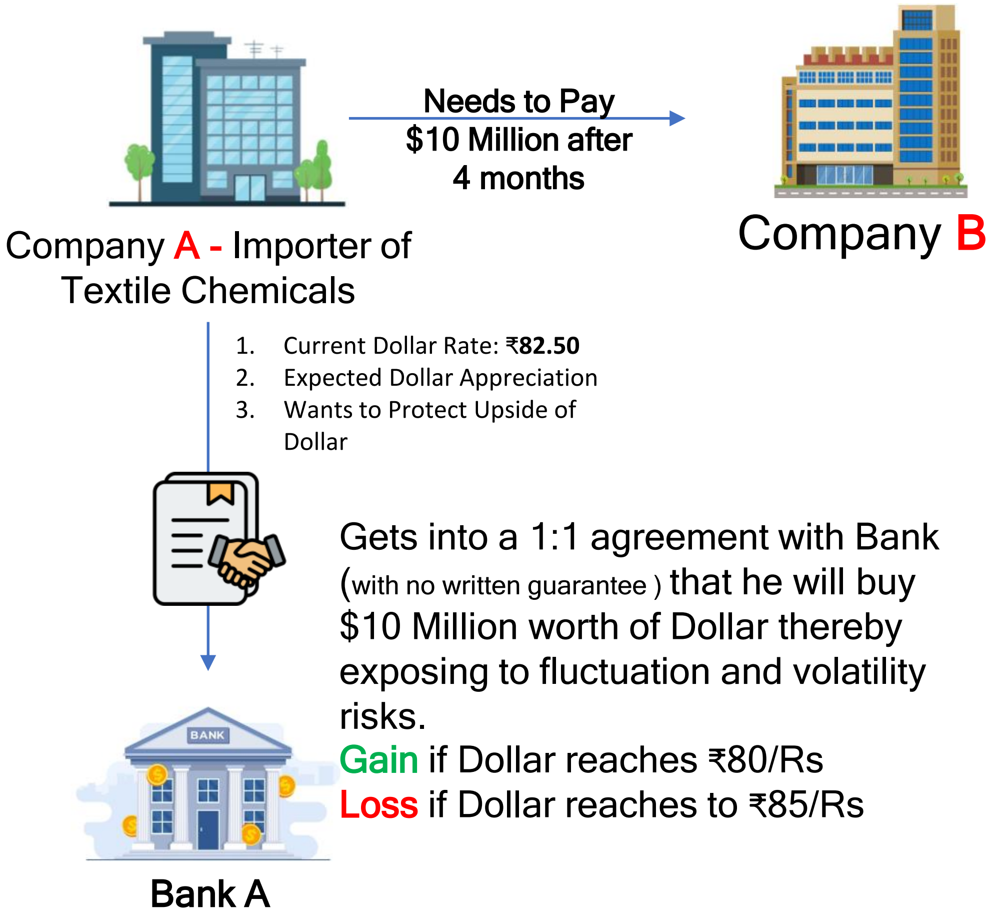
Liquidity Risks: When there is insufficient buyers and sellers who can facilitate the transaction of sell or Buy of an trading contract, we refer that situation as a Liquidity issues. Liquidity risk happens due to ack of buyers and sellers of a particular securities.

Unhedged Derivative

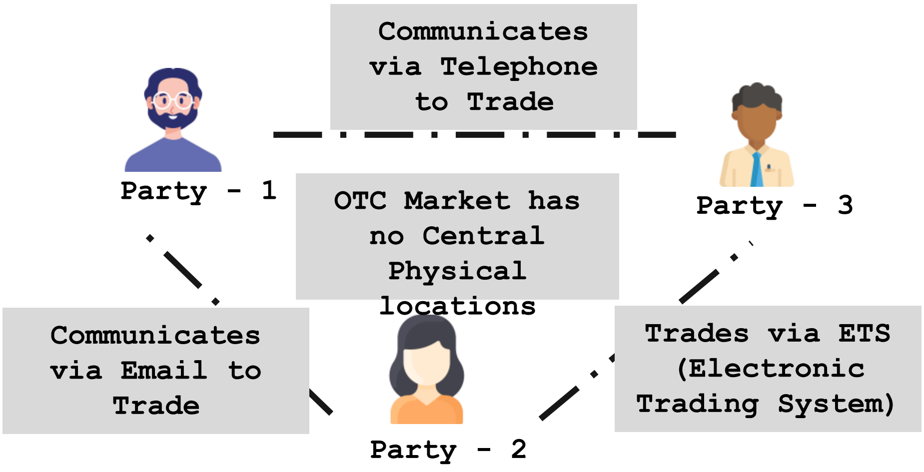
An **Unhedged Derivative** refers to a financial derivative position that is not offset or protected by a corresponding hedge. This means that the entity holding the derivative is fully exposed to market risks, such as price fluctuations, interest rate changes, or currency movements, without any risk-mitigating strategy in place leading to **Default Risk** and **Liquidity Risks**. A typical example is **NAKED POSITION for a Seller of who sold a FUTURES CONTRACT or OPTION CONTRACT.**

Key Characteristics:

1. **High Risk Exposure** - Since there is no hedge, any adverse movement in the underlying asset can lead to significant losses.
2. **Speculative Nature** - Unhedged derivatives are often used for speculation rather than risk management.



Derivative Analysis



OTC Markets (Over-the-Counter Markets)

Some derivative contracts are settled between counterparties on terms mutually agreed upon between them. These are called over the counter (OTC) derivatives. They are nonstandard and they depend on the trust between counterparties to meet their commitment as promised. These are prevalent only between institutions, which are comfortable dealing with each other.

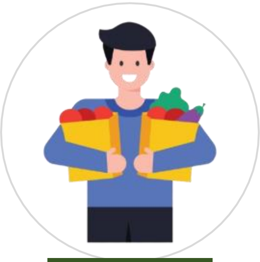
Eg: **Mr. Rohit is an importer and needs $500 in another 2 months** to make a payment to his overseas clients. He goes to a Forex department in the bank and buys a **$500- 2 months futures**. After 2 months he goes to the bank and gets his $500 from the bank and makes payment to the bank in Rupees equal to $500. This is typical example of OTC contract.

Exchange Traded Markets

Exchange-traded derivatives are standard derivative contracts defined by an exchange, and are usually settled through a clearing house. The buyers and sellers maintain margins with the clearing-corporations, which enables players that do not know one another (anonymous)
to enter into contracts on the strength of the settlement process of the clearing house. Forwards are OTC derivatives; futures are exchange-traded derivatives.

Understand Buyer and Seller – Basis of trading !!

A **buyer** is a person or entity that buys goods or services from a seller, and a seller is a person or entity that sells goods or services.



Buyer

BUY low

SELL high

Priority: BUY low

Seller

BUY low

SELL high

Priority: SELL high

Details	Buyer	Seller
Role	Acquires goods or services	Provides goods or services
Initiation	Typically initiates a transaction	Typically responds to buyer inquiries
Negotiation	Negotiates terms	Negotiates terms
Payment	Pays for goods or services	Receives payment for goods or services

BUYING LOW and SELLING HIGH is Key to any transaction

In essence, **rights** are entitlements or privileges one has, while **obligations** are duties or responsibilities one is bound to perform.

Rights are what is owed to an individual, often guaranteed by law or moral principles, while **obligations** are what individuals, professions, or society are expected to fulfill to honor those rights.

		Rights	Obligation
	BUYER	To receive the goods	To pay the price
	SELLER	To receive the payments	To deliver the goods

WISH you all the BEST !!