Project Idea:

The key idea in this project is to establish **dynamic support and resistance levels** based on the ATR. Here’s the reasoning:

Since ATR represents the average range of price movements, it can be a useful measure of the extent to which prices may fluctuate from their current levels.

By using ATR, you are accounting for market volatility when defining key price zones, making your analysis adaptive to current market conditions.

So we are deciding the width of support and resistance zone for that day by using ATR, which can be used in future as in general the volatility is same for next day if the stock is not under light.

Average True Range (ATR): It is used to measure the **volatility** of an asset. It calculates the average of the **True Range** values over a specified number of periods (default is 14).

**ATR Formula**:

True Range :max(high-low, |high-previous close|,|low-previous close|)

ATR=SMA(True Range ,n)

where **SMA** is the Simple Moving Average and **n** is the number of periods.

Higher ATR values indicate greater price volatility, while lower ATR values indicate lower volatility.

The place where volatility is high can be considered as starting of trend , so that can be considered as good support and resistance zone.

It does not provide a direction of price movement but highlights the extent of volatility.

**Percentage Zone Calculation**: In this project, a percentage zone is calculated based on ATR. The formula is:

Percentage Zone=Latest ATR \*ATR Multiplier/Current strike price

The ATR Multiplier value depends upon and trading strategy ,here in my project I am considering big move so I will take the value above or equal to 2.

Percentage Zone will basically tell about the width of the zone which we have to consider, having good idea about the size of the zone will give us more clear picture of how the much time price can be here and in between which range.

Time Frame Flexibility: Taking Big time frame like 4h,12h,24h which basically means we are capturing big move which means our target is on big candlestick.