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DRM ASSIGNMENT

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STOCK - BIRLASOFT

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BIRLASOFT

GENERAL OVERVIEW

BIRLASOFT is a global information technology services provider that offers a range of services including digital solutions, enterprise application services, IT consulting, and product engineering. BIRLASOFT is part of the CK Birla Group, a conglomerate with diverse business interests. The company provides IT solutions to clients across various industries, including banking and financial services, insurance, manufacturing, retail, and healthcare. Incorporated in 1995, BIRLASOFT is a multi-shore business application global IT services provider with a presence in the United States, Europe, Asia-Pacific and India. It operates development centres in the United States, China, Poland and India.

COMPANY'S FUNDAMENTALS

We can delve deeper into BIRLASOFT 's performance and its implications for investors:

- Financial Performance Overview (2022-2023)
    - Revenue and Profitability: BIRLASOFT reported a revenue of ₽4,795 Crore for the fiscal year 2022-2023, demonstrating a robust business model. The company achieved an EBITDA of ₽520 Crore and a PAT (Profit After Tax) of ₽332 Crore, indicating efficient operations and strong profitability.
    - Cash Position: The company's net cash and cash equivalents stood at ₽1,128 Crore, highlighting a solid liquidity position that supports future growth investments and operational needs.
    - Workforce and Geographical Spread: With 12,193 employees, BIRLASOFT has a significant talent base. Geographically, the company derives a majority of its revenue from America (84.5%), followed by Europe (9.5%) and the Rest of the World (6.0%), showing its global reach and market penetration.
- Stock Performance (January 2023 - May 2023)
    - Price Trend: The stock price showed volatility with a general upward trend, especially noticeable towards May 2023. This uptrend could indicate growing investor confidence and market recognition of the company's value and growth prospects.

- Trading Volume: Fluctuations in trading volume, with noticeable peaks, suggest periods of heightened interest or activity. These could be driven by market news, financial reports, or other significant events affecting the company.

➢ Strategic Positioning and Market Outlook

- Industry Verticals: BIRLASOFT 's focus on Manufacturing (46.8%), BFSI (19.3%), Energy & Utilities (14.3%), and Life Sciences & Services (19.6%) aligns with sectors that are either stable or experiencing growth, leveraging trends such as digital transformation and cloud adoption.
- Service Offerings: The emphasis on business and technology transformation (40.8%), enterprise solutions (37.2%), and cloud & base services (22.0%) positions BIRLASOFT competitively in high-growth areas of IT services.

➢ Investment Considerations

- Growth Prospects: BIRLASOFT strategic focus areas, combined with its financial health, suggest potential for sustained growth, especially as digital transformation initiatives across industries accelerate.

- Market Conditions: The upward trend in stock price amidst volatility indicates a positive market sentiment towards BIRLASOFT. However, investors should remain mindful of macroeconomic factors and industry-specific risks that could affect future performance.

- Valuation: The stock's performance, particularly the positive trend in recent months, should be evaluated against industry benchmarks and peer companies to assess valuation and investment attractiveness.

Conclusion

BIRLASOFT appears to be on a solid growth trajectory, underpinned by strong financials, strategic market positioning, and a focus on technology and digital transformation services. The stock's performance from January to May 2023 further reflects a market that recognizes the company's potential. However, potential investors should conduct a thorough due diligence process, considering both the opportunities and risks inherent in the current economic and sectoral landscape.

STOCK EXPECTATIONS FROM TECHNICAL ANALYSIS

EXPECTATIONS FOR 1ST MONTH (MAY 2023) – AGRESSIVELY BULLISH

EXPECTATIONS FOR 2ND MONTH (JUNE 2023) – MODERATELY BULLISH

To form a clear view about the expectations of the stock BIRLASOFT we need to perfrom technical analysis.Through the use of various chart pattern indicators the expectaions (bullish or bearish) can be made.The period of analysis was chosen to be from **1st January 2023 to 30th April 2023**

Thus making our first month **May 2023** and second month **June 2023.**

The first techincal indicator that we used was **RSI (Relative Strength Index)**. The RSI measures the speed and change of price movements. When two different points are on the same level on the chart but the point in later time has a higher RSI than the one before then we can call it a bullish trend. When the point later in time has a lower RSI than the before one then it can be called a bearish trend. As we can see from the graph below that the RSI has shown a bullish trend in the month of march and april. This means that the security was oversold in the period making it undervalued at the market. Generally, when a security is undervalued at the

stock market it rises.In this case the RSI crossed 30 making trend bullish. This signfies a **agressively bullish** trend in the month of **May**.

The next and perhaps the most important indicator was the **SMA 200**. SMA stands for Simple moving average. Simple moving averages calculate the average of a range of prices by the number of periods within that range. In this case we have used SMA 200 so the period is of 200 days. For the period of our analysis the SMA 200 was trending above the stock price till 28th April. After 28th April the SMA 200 breakout took place as the stock price started trending above the SMA 200. If an asset's price breaks above a certain moving average, it can be seen as a confirmation of a bullish breakout. This suggests that the the month of **May** is going to be **agressively bullish** and the rally will also continue in the month of **June** making it **moderatley bullish.**

The third indicator used for the final confirmation of the expectation was MACD which stands for **Moving Average Convergence Divergence**. is a trend-following momentum indicator that shows the relationship between two exponential moving averages (EMAs) of a security's price. The MACD line is calculated by subtracting the 26-period EMA from the 12-period EMA. A nine-day EMA of the MACD line is called the signal line, which is then plotted on top of the MACD line, which can function as a trigger for buy or sell signals. When the MACD line(blue line) crosses above the signal line(orange) it is a bullish signal. As we can see from the below graph that the MACD line has crossed the signal line on 18th April 2023. This gives us the confirmation of the **agressively bullish** month of **May** and that the rally will continue in the month of **June** which will be **moderately bullish** as it is a volatile stock.


BIRLASOFT (INDIA) · 1h · NSE
O257.30 H259.70 L256.95 C259.50 +2.20 (+0.86%)
774.75
0.00
774.75
Vol 118.011K
MACD 12 26 close −0.09 −2.27 −2.18
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OPTION TRADING STRATERGIES

For 1st Month – May

(Aggressively Bullish)

TYPE OF INVESTOR – VOLATIALITY TRADER

1)Short Bull Ratio Spread

- The short bull ratio spread is an options trading strategy that is used to profit from a security increasing in price or bullish trends.
- It is used to reduce the cost of strategy and the profits made from strategy are not capped and are unlimited.
- The short bull ratio spread requires two simultaneous transactions: buying calls with higher strike price and writing calls with a lower strike price but based on the same underlying security and with the same expiration date.
- However, the number of calls bought are greater than number of which are written. In this case we are using the ratio of 3:1 for number of long calls to number of short calls.
- The strike prices are chosen such that the short call is in the money and long call is approximately at the money. The short call strike price is chosen such that the cost of strategy remains as close to zero.
- The maximum profits are unlimited. The maximum loss occurs when the price of the underlying security is equal to the strike price of the calls bought at the time of expiration. This would mean the calls we own expire worthless, but we will have a liability on the ones we have written with the lower strike price.
- Cost of strategy= $3P_1 - P_2$

Profit / Payoff matrix

	$S_T >= k_1$	$k_1 > S_T >= k_2$	$k_2 > S_T$
3 Long calls	$3(S_T - k_1)$	0	0
1 Short call	$k_2 - S_T$	$k_2 - S_T$	0
Payoff	$2S_T - 3k_1 + k_2$	$k_2 - S_T$	0
Profit / Loss	$2S_T - 3k_1 + k_2 + P_2 - 3P_1$	$k_2 - S_T + P_2 - 3P_1$	$P_2 - 3P_1$

- **Breakeven Point** is when $\mathbf{S_T = (3k_1 - k_2 - P_2 + 3P_1)/2}$
- Maximum loss occurs when spot price at maturity is same as the strike price of the long calls.
- **Maximum loss**= $\mathbf{k_2 - k_1 + P_2 - 3P_1}$
- **Maximum profit** is **unlimited**.

PROFIT/LOSS FOR 1ST MONTH

- On 2nd May 2023 spot price of BIRLASOFT was 278.30.
- 3 calls of strike price (k_1) 280 were bought at a premium of (P_1) 9.2 of maturity at 25th May 2023.
- 1 call was written at strike price (k_2) 250 at premium of (P_2) 32 of maturity at 25th May 2023.
- Cost of strategy= $3P_1 - P_2 = 3(9.2) - 32 = -4.4$
- There was initial inflow of 4.4

PAYOFF/PROFIT MATRIX

	S_T >=280	280>S_T >=250	250 >S_T
3 Long calls	3(S_T - 280)	0	0
1 Short call	250 – S_T	250 – S_T	0
Payoff	2 S_T -3(280) + 250	250– S_T	0
Profit / Loss	2 S_T - 3 (280) + 250 + 32 – 3(9.2)	250 – S_T + 32 – 3(9.2)	4.4

- **Breakeven Point** is when **S_T** = (3(280) - 250 - 32 +3(9.2))/2 = **292.8**
- **Maximum loss**= 250 – 280 + 32 – 3(9.2) = **-25.6**
- **Maximum profit** is unlimited.

** In the above graph X- axis is representing the spot prices at maturity and the Y – axis is representing the corresponding profits.

Actual Profit/Loss on expiry

- On 25th May 2023 spot price of BIRLASOFT (S_T) was 335.40.
- As this lies in the region of $S_T > k_1$ (335.40>280) the profit is given by:
- Profit = $2\ S_T - 3\ k_1 + k_2 + P_2 - 3P_1$
- Profit = 2(335.40) – 3(280) + 250 + 32 – 3(9.2)
- **Profit = 85.2**

Thus, aggressively bullish expectations were realised and a profit of **Rs 85.2** was made in the 1st month.

2)Bottom Strangle

- A strangle is an options strategy in which the investor holds a position in both a call and a put option with different strike prices, but with the same expiration date and underlying asset.
- A strangle is a good strategy if you think the underlying security will experience a large price movement in the near future but are unsure of the direction. However, it is profitable mainly if the asset does swing sharply in price.
- A strangle is similar to a straddle but uses options at different strike prices, while a straddle uses a call and put at the same strike price.
- A strangle is a popular options strategy that involves holding both a call and a put on the same underlying asset.
- A strangle covers investors who think an asset will move dramatically but are unsure of the direction.
- A strangle is profitable only if the underlying asset does swing sharply in price.

  - Cost of strategy = $P_1 + P_2$ where P_1 is put premium and P_2 is call premium.

Profit / Payoff matrix

	$S_T \leqslant k_1$	$k_1 \leqslant S_T \leqslant k_2$	$S_T \geqslant k_2$
Long call	0	0	$S_T - k_2$
Long put	$K_1 - S_T$	0	0
Payoff	$K_1 - S_T$	0	$S_T - k_2$
Profit / Loss	$K_1 - S_T - (P_1 + P_2)$	$-(P_1 + P_2)$	$S_T - k_2 - (P_1 + P_2)$

- **Breakeven Points** are ${}^1S_T = K_1 + (P_1 + P_2)$ and ${}^2S_T = K_2 + (P_1 + P_2)$
- Maximum loss occurs when spot price at maturity is same as the strike price of the long calls.
- **Maximum loss** = $-(P_1 + P_2)$
- **Maximum profit** is unlimited.

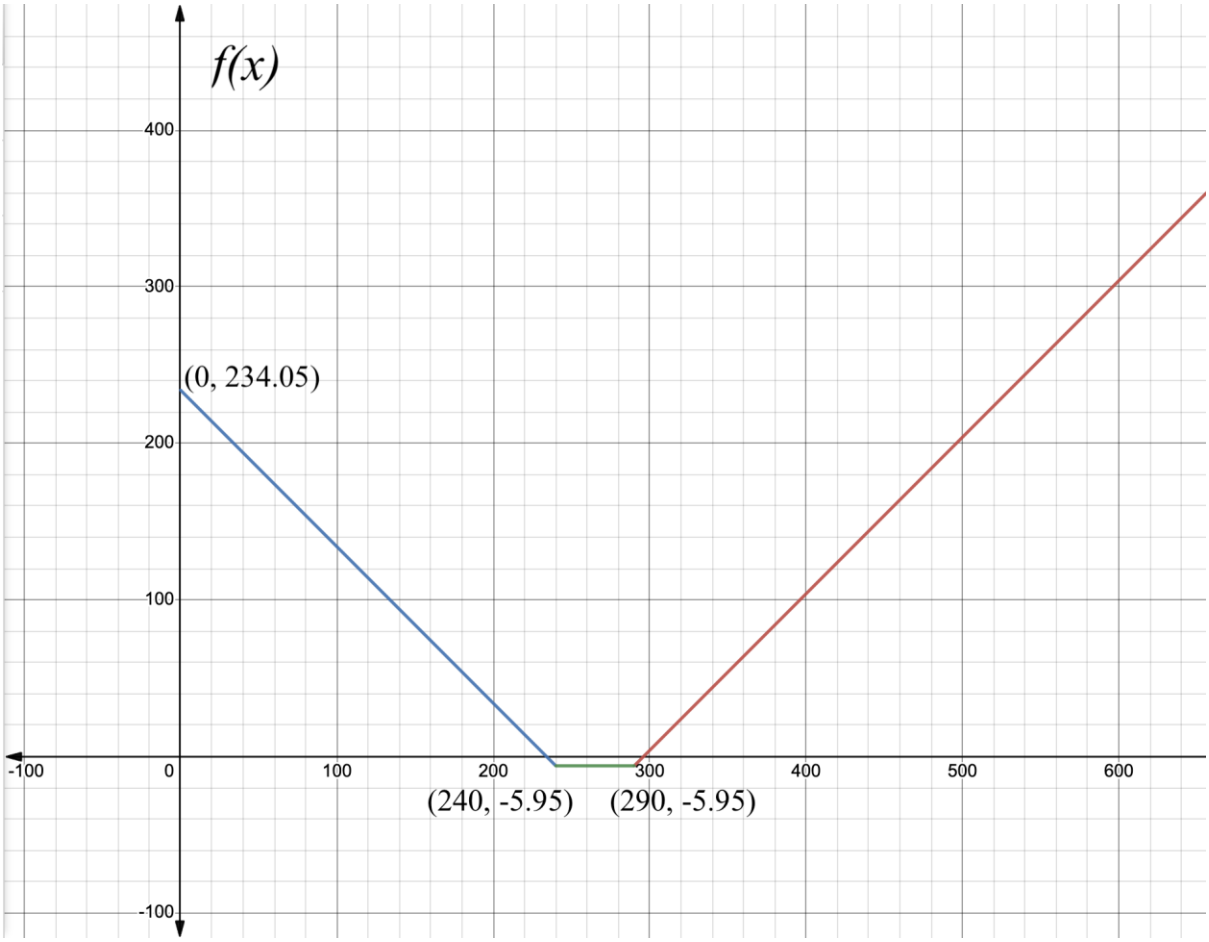
PROFIT/LOSS FOR 1ST MONTH

- On 2nd May 2023 spot price of BIRLASOFT was 278.30.
- 1 put of strike price (k_1) 240 was bought at a premium of (P_1) 0.65 of maturity at 25th May 2023.
- 1 call was bought at strike price (k_2) 290 at premium of (P_2) 5.30 of maturity at 25th May 2023.
- Cost of strategy= $P_2 + P_1 = 5.3 + 0.65 = 5.95$
- There was initial outflow of 5.95

PAYOFF/PROFIT MATRIX

	$S_T \leqslant 240$	$240 \leqslant S_T \leqslant 290$	$S_T \geqslant 290$
Long call	0	0	$S_T - 290$
Long put	$240 - S_T$	0	0
Payoff	$240 - S_T$	0	$S_T - 290$
Profit / Loss	$240 - S_T - (5.95)$	$-(5.95)$	$S_T - 290 - (5.95)$

- **Breakeven Points** are $^{1}S_T$ = 240 + (5.95) = **245.95**
  and $^{2}S_T$ = 290 + (5.95) = **295.95**
- **Maximum loss** = –(0.65 + 5.30) = –**5.95**
- **Maximum profit** is unlimited.



** In the above graph X- axis is representing the spot prices at maturity and the Y – axis is representing the corresponding profits.

Actual Profit/Loss on expiry

- On 25th May 2023 spot price of BIRLASOFT (S_T) was 335.40.
- As this lies in the region of $S_T > k_2$ (335.40 >290) the profit is given by:

Profit = $S_T - k_2 - (P_1 + P_2)$ = 335.40 – 290 – (5.95)

- **Profit = 39.45**

Thus, aggressively bullish expectations were realised and a profit of **Rs 39.45** was made in the 1st month.

3)Strap

- A strap is an options trading strategy that involves buying two at-the-money call options and one at-the-money put option on the same underlying asset, all with the same expiration date.
- The strap strategy is considered aggressively bullish because it heavily bets on the underlying asset's price increasing significantly.
- In a strap, the investor buys two call options to capitalize on potential upward movements in the underlying asset's price. Additionally, they purchase a put option as insurance in case the price decreases.
- The strap strategy can yield substantial profits if the underlying asset's price rises sharply. The profit potential is theoretically unlimited as the asset's price increases.
- Despite its bullish outlook, the strap strategy carries risks. If the underlying asset's price remains stagnant or decreases, the investor may incur losses due to the cost of purchasing the options.
- The strap strategy benefits from high volatility in the underlying asset's price. Increased volatility can lead to larger price movements, potentially resulting in higher profits.
- The strap strategy's breakeven point is the strike price of the purchased put option minus the combined cost of purchasing all options. The strategy becomes profitable if the underlying asset's price rises above the breakeven point.
  - Cost of strategy = $2P_1 + P_2$, where P_1 is the long call premium and P_2 is the long put premium. Let S_T be the spot price and k be the strike price.

Profit / Payoff matrix

	$S_T \geq k$	$S_T \leq k$
2 Long call	$2(S_T - k)$	0
1 Long put	0	$K - S_T$
Payoff	$2(S_T - k)$	$K - S_T$
Profit / Loss	$2S_T - 2k - 2P_1 - P_2$	$K - S_T - 2P_1 - P_2$

- **Breakeven Points** are ${}^1S_T = (2K + 2P_1 + P_2)/ 2$ and ${}^2S_T = K - 2P_1 - P_2$
- **Maximum loss =** $-2P_1 - P_2$
- **Maximum profit** is unlimited.

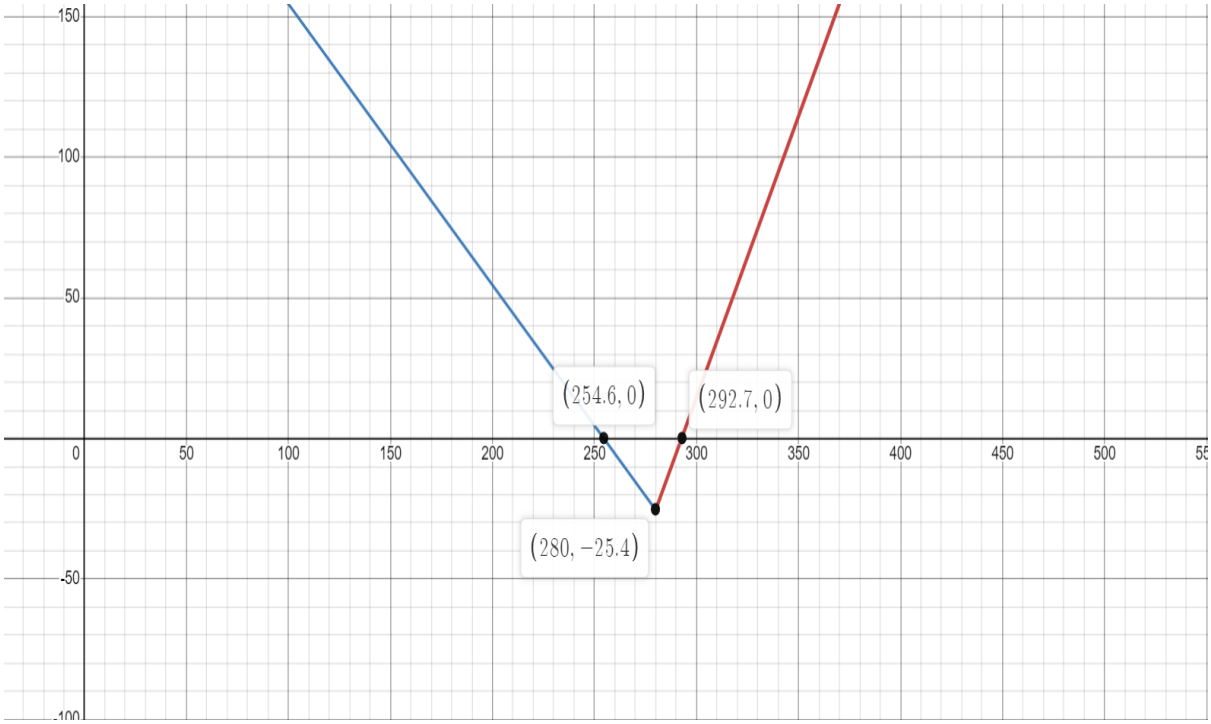
PROFIT/LOSS FOR 1ST MONTH

- On 2nd May 2023 spot price of BIRLASOFT was 278.30.
- 2 long calls of strike price (k) 280 was bought at a premium of (P_1) 7.30 of maturity at 25th May 2023.
- 1 long put was bought at strike price (k) 280 at premium of (P_2) 10.80 of maturity at 25th May 2023.
- Cost of strategy = $2P_1 + P_2 = 2*7.30 + 10.80 = 25.40$
- There was initial outflow of 25.40

PAYOFF/PROFIT MATRIX

	$S_T \geq 280$	$S_T \leq 280$
Long call	$2(S_T - 280)$	0
Long put	0	$280 - S_T$
Payoff	$2(S_T - 280)$	$280 - S_T$
Profit / Loss	$2S_T - 560 - (25.40)$	$280 - S_T - (25.40)$

- **Breakeven Points** are $^1\mathbf{S_T}$ = (560+25.40)/2 = **292.7**
  and $^2\mathbf{S_T}$ = 290 + 25.40 = **254.6**
- **Maximum loss** = – (2*7.30 + 10.80) = –**25.40**
- **Maximum profit** is unlimited.



** In the above graph X- axis is representing the spot prices at maturity and the Y – axis is representing the corresponding profits.

Actual Profit/Loss on expiry

- On 25th May 2023 spot price of BIRLASOFT (S_T) was 335.40.
- As this lies in the region of $S_T > k_2$ (335.40 >280) the profit is given by:
- Profit = $2S_T - 2k - 2P_1 - P_2$ = (2*335.40 – 2*280 – 2*7.30 – 10.80)
- **Profit = 85.40**

Thus, aggressively bullish expectations were realised and a profit of Rs **85.40** was made.

OPTION TRADING STRATERGIES

For 1st Month – June

(Moderately Bullish)

TYPE OF INVESTOR- NEUTRAL TO BULLISH SPECULATOR

4)Bull Call Spread

A bull call spread is an options trading strategy designed to benefit from a stock's limited increase in price. The strategy uses two call options to create a range consisting of a lower strike price and an upper strike price. The bullish call spread helps to limit losses of owning stock, but it also caps the gains.

- A bull call spread is an options strategy used when a trader is betting that a stock will have a limited increase in its price.
- The strategy uses two call options to create a range consisting of a lower strike price and an upper strike price.
- The bullish call spread can limit the losses of owning stock, but it also caps the gains.

Components:

- **Buy Call Option:** This involves buying a call option, which gives the investor the right to purchase the underlying stock at a specific price (strike price) within a certain time frame (expiration date). The investor pays a premium for this right.
- **Sell Call Option:** Simultaneously, the investor sells a call option with a higher strike price but the same expiration date. By selling this call option, the investor receives a premium, which helps offset the cost of buying the first call option.

Risk and Reward:

- **Maximum Loss:** The maximum loss incurred in a Bull Call Spread is limited to the net premium paid to initiate the position. This occurs if the stock price decreases or remains below the lower strike price at expiration.
- **Maximum Profit:** The maximum profit is achieved if the stock price is at or above the higher strike price at expiration. The profit is capped at the difference between the strike prices minus the net premium paid.

- **Market Outlook:** A Bull Call Spread is suitable for a moderately bullish outlook. It allows investors to potentially profit from a rise in the stock price while limiting their downside risk.
- **Break Even Point:** The breakeven point is the stock price at which the strategy neither makes a profit nor incurs a loss at expiration. It's calculated by adding the net premium paid to the lower strike price of the bought call.

Payoff/Profit Matrix:

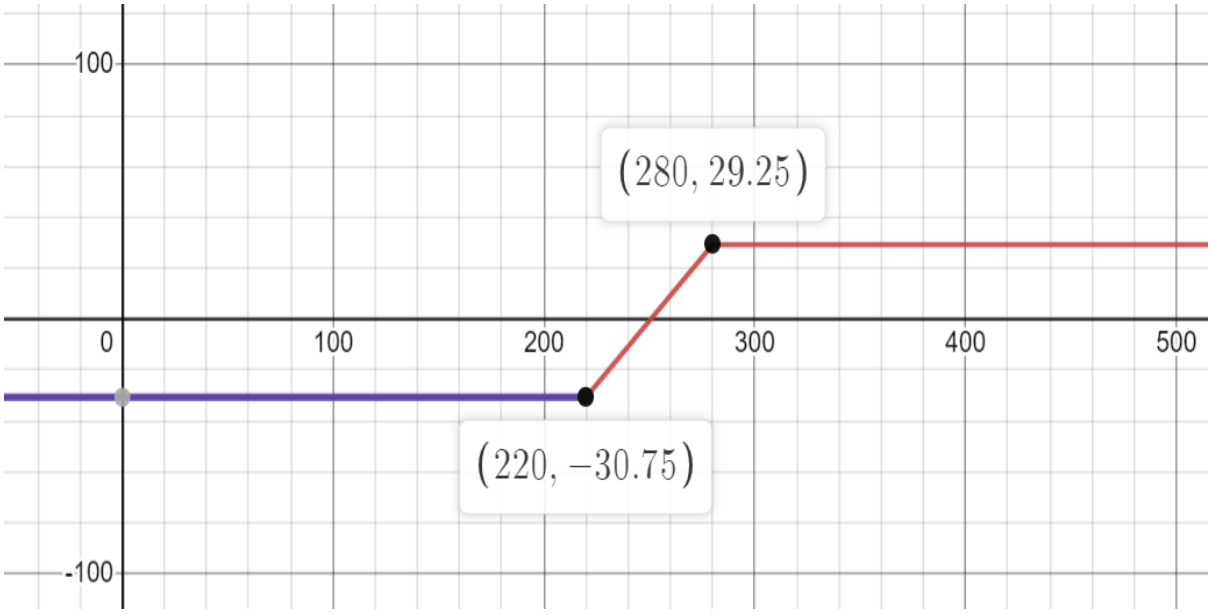
PAYOFFS	St <=K1	K1< St <=K2	St >K2
LONG CALL	0	St-K1	St-K1
SHORT CALL	0	0	K2-St
PAYOFF	0	St-K1	K2-K1
PROFIT	-(p1-p2)	(St-K1) -(p1-p2)	(K2-K1) -(p1-p2)

MAX LOSS	**-(p1-p2)**
MAX PROFIT	**(K2-K1)- (p1-p2)**
BREAKEVEN PRICE	**St= K1+ p1-p2**

PROFIT/LOSS FOR 2ND MONTH

SHORT CALL	K2= 280	P2= 16.75
LONG CALL	K1= 220	P1= 47.5

- From the profit diagram/graph, we observe that:
- The **breakeven point** (price) for the strategy is 250.75 Rs.
- The **maximum loss** is -30.75 Rs.
- The **maximum profit** that can be realized by using this strategy is 29.25 Rs.



** In the above graph X- axis is representing the spot prices at maturity and the Y – axis is representing the corresponding profits.

Actual Profit/Loss on expiry

- On 29th June 2023, the spot price of BIRLASOFT (ST) was 351.75.
- As this lies in the region ST> K2 (351.75> 280), the profit is given by:
- Profit= (K2-K1)- (p1-p2)
- Profit= (280-220)- (47.5-16.75) = 29.25
- This is also the maximum realizable profit of the strategy

Thus, moderately bullish expectations were realised and a profit of Rs **29.25** was made for the 2nd month.

5)Call Ratio Spread

- Call ratio spread is an options trading strategy used when an investor expects moderate price movement in the underlying asset, but with a bias towards moderately bullish movement.
- It involves buying a certain number of at-the-money or slightly out-of-the-money call options and simultaneously selling a greater number of out-of-the-money call options.
- In this case we will be buying 1 call and writing 2 calls.
- Usually, the Call Ratio Back Spread is deployed for a net inflow because of the two short calls for which we receive the premium and against it there's only one long call.
- The profits in this case are capped and the losses can be unlimited this the only drawback for the strategy.
- Maximum profit is realized when the strike price of short becomes the maturity spot price.
- The strategy aims to capitalize on limited price movements while reducing the cost of establishing the position or even generating a net credit.
- Cost of strategy= $P_1 - 2P_2$ (Long premium – Short premium)

PAYOFF/PROFIT MATRIX

	$S_t<k_1$	$k_1<=S_t<k_2$	$S_t>=k_2$
1 Long call (k_1)	0	$S_t - k_1$	$S_t - k_1$
2 Short calls(k_2)	0	0	$2(k_2- S_t)$
Payoff	0	$S_t - k_1$	$2k_2-k_1-S_t$
Profit/loss	$P_2 - P_1$	$S_t - k_1+ 2P_2 - P_1$	$2k_2-k_1-S_t+2 P_2 - P_1$

- Breakeven points: $S_{t1} = k_1 - 2P_2 + P_1$ and $S_{t2} = 2k_2 - k_1 + 2P_2 - P_1$
- Maximum loss is **unlimited**
- Maximum profit = $k_2 - k_1 + 2P_2 - P_1$

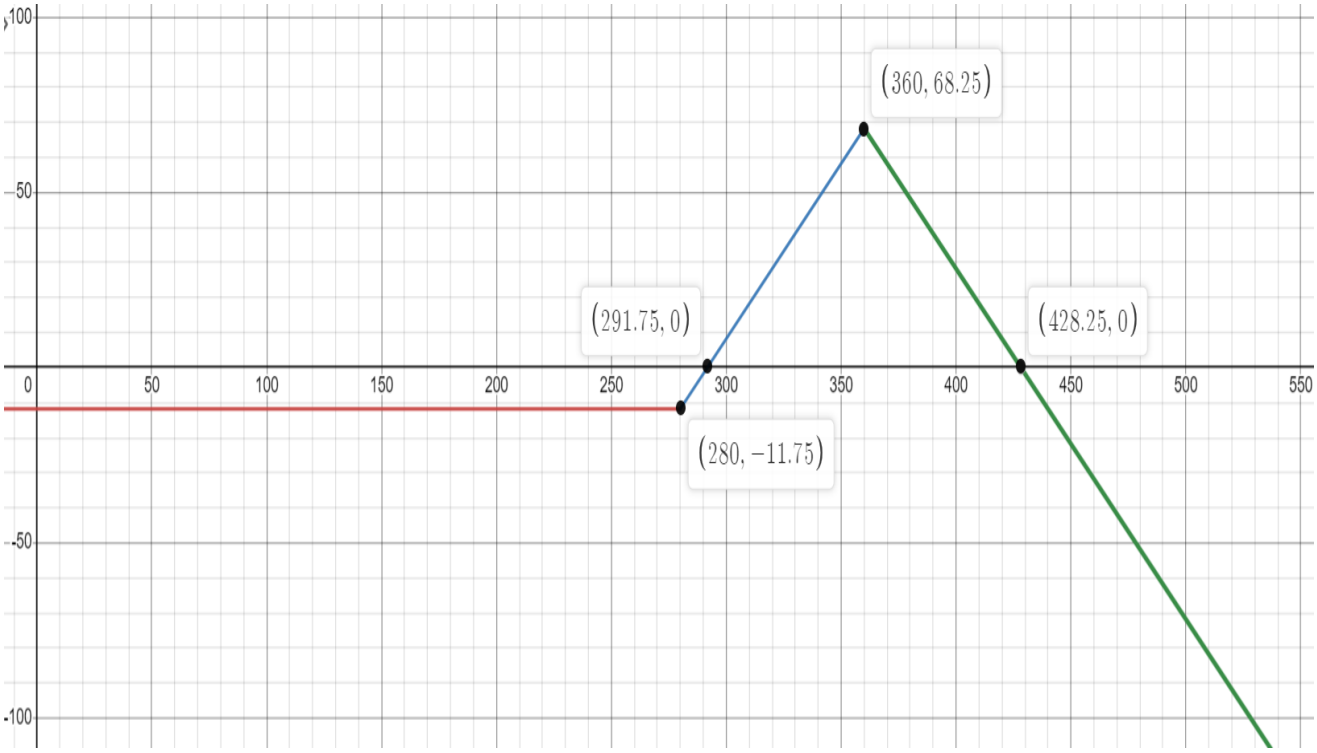
PROFIT/LOSS FOR 2nd MONTH

- On 2nd May 2023 spot price of BIRLASOFT was 278.30.
- 1 call of strike price (k_1) 280 were bought at a premium of (P_1) 16.75 of maturity at 29th June 2023.
- 2 calls of strike price (k_2) 360 were bought at a premium of (P_2) 2.5 of maturity at 29th June 2023.
- Cost of Strategy = $P_1 - 2P_2 = 11.75$
- There was an initial outflow of 11.75.

PAYOFF/PROFIT MATRIX

	$S_t<280$	$280<=S_t<360$	$S_t>=360$
1 Long call (k_1)	0	$S_t - 280$	$S_t - 280$
2 Short calls(k_2)	0	0	$2(360- S_t)$
Payoff	0	$S_t - 280$	$2(360)-280-S_t$
Profit	5- 16.75	$S_t - 280+ 5- 16.75$	$2(360)-280-S_t + 5- 16.75$

- Breakeven points: $S_{t1} = k_1 - 2P_2 + P_1 = 280-5+16.75=$ **291.75**
  - $S_{t2} = 2k_2-k_1 + 2P_2 - P_1 = 2(360)-280+ 5- 16.75=$ **428.25**
- Maximum loss is unlimited
- Maximum profit = $k_2 – k_1+ 2P_2 - P_1 = 360 – 280+ 5- 16.75 =$ **68.25**



** In the above graph X- axis is representing the spot prices at maturity and the Y – axis is representing the corresponding profits.

Actual Profit/Loss on Expiry

- On 25th May 2023 spot price of BIRLASOFT (S_T) was 351.75.
- This price lies in the region of $k_1 <= S_t <k_2$ (280 < 351.75< 360).Thus, the profit is given by $S_t – k_1+ 2P_2 - P_1$.
- Profit = 351.75 – 280 + 5 – 16.75
- Profit = **60**

Thus, moderately bullish expectations were realized and a profit of **Rs 60** was made in the 2nd month.

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