In [1]:
```
import pandas as pd
import numpy as np
```

In [2]:
```
data=pd.read_csv("tradelog.csv")
```

In [4]:
```
data
```

Out[4]:

	Unnamed: 0	Ticker	Entry Time	Entry Price	Exit Time	Exit Price
0	1	BANKNIFTY09JUL2022800PE	08-07-2020 09:29	163.50	08-07-2020 13:15	301.00
1	2	BANKNIFTY09JUL2022700CE	09-07-2020 09:29	162.50	09-07-2020 10:34	166.75
2	3	BANKNIFTY09JUL2022700PE	09-07-2020 09:29	110.55	09-07-2020 10:34	147.00
3	4	BANKNIFTY16JUL2022700CE	10-07-2020 09:29	295.10	10-07-2020 15:24	437.55
4	5	BANKNIFTY16JUL2022700PE	10-07-2020 09:29	555.20	10-07-2020 15:24	403.15
...	...	...	...	...	...	...
244	245	BANKNIFTY31DEC2031300PE	29-12-2020 09:29	216.65	29-12-2020 13:10	274.60
245	246	BANKNIFTY31DEC2031200CE	30-12-2020 09:29	248.25	30-12-2020 10:24	283.90
246	247	BANKNIFTY31DEC2031200PE	30-12-2020 09:29	221.70	30-12-2020 10:24	240.10
247	248	BANKNIFTY31DEC2031300CE	31-12-2020 09:29	161.80	31-12-2020 10:37	173.85
248	249	BANKNIFTY31DEC2031300PE	31-12-2020 09:29	105.05	31-12-2020 10:37	124.00

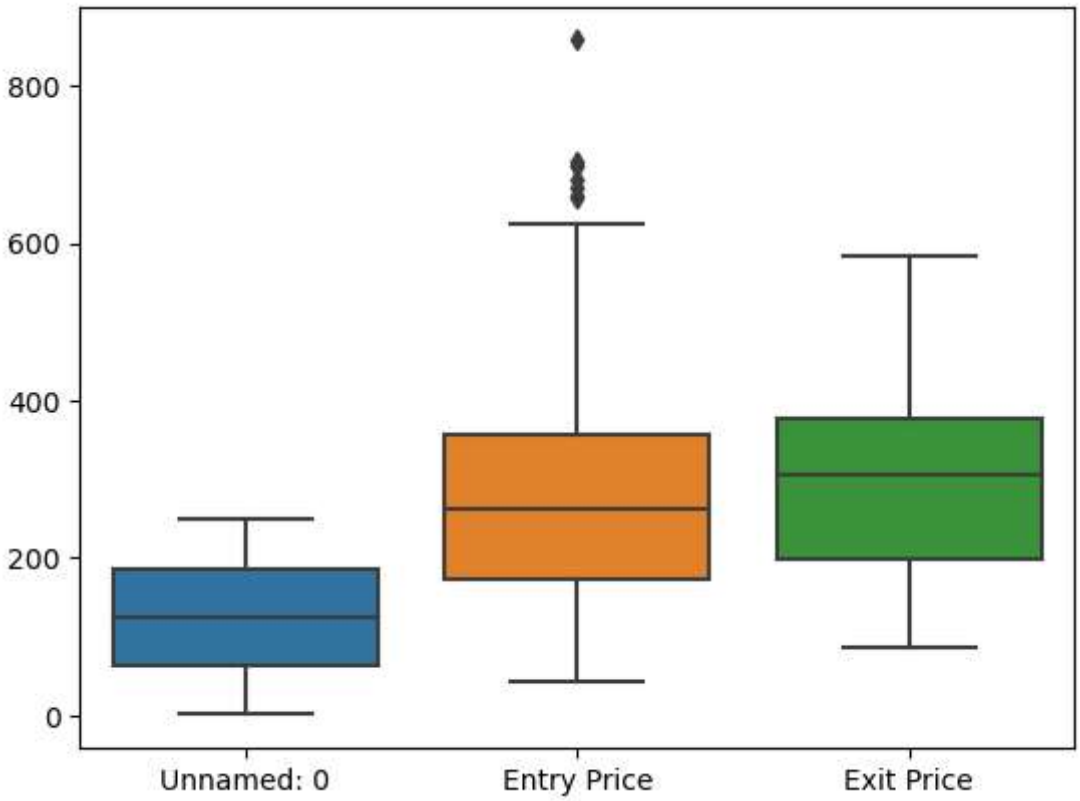
249 rows × 6 columns

In [14]:
```
data.isnull().count()
```

Out[14]:
```
Unnamed: 0     249
Ticker         249
Entry Time     249
Entry Price    249
Exit Time      249
Exit Price     249
dtype: int64
```

In [16]:
```
import seaborn as sns
import matplotlib.pyplot as plt

sns.boxplot(data)
plt.show()
```



In [7]:
```
# Constants
initial_portfolio_value = 6500
risk_free_rate = 0.05  # 5%
```

In [9]:
```
len(data)
```

Out[9]:
```
249
```

In [25]:
```
# Calculate parameters
total_trades = len(data)
profitable_trades = len(data[data['Entry Price'] < data['Exit Price']])
loss_making_trades=len(data[data['Entry Price']> data['Exit Price']])
#print(profitable_trades + loss_making_trades)
print(profitable_trades , loss_making_trades)
```

```
153 96
```

In [27]:
```
win_rate = profitable_trades / total_trades
win_rate
```

Out[27]:
```
0.6144578313253012
```

In [52]:
```
data['Profit/Loss'] = data['Exit Price'] - data['Entry Price']
data['Profit/Loss']
```

Out[52]:
```
0      137.50
1        4.25
2       36.45
3      142.45
4     -152.05
         ...
244     57.95
245     35.65
246     18.40
247     12.05
248     18.95
Name: Profit/Loss, Length: 249, dtype: float64
```

In [30]:
```
average_profit_profitable = data[data['Entry Price'] < data['Exit Price']]['Profit/Los
average_profit_loss_making = data[data['Entry Price'] > data['Exit Price']]['Profit/Lo

print("Average Profit for Profitable Trades:", average_profit_profitable)
print("Average Profit for Loss-Making Trades:", average_profit_loss_making)
```

```
Average Profit for Profitable Trades: 76.09542483660131
Average Profit for Loss-Making Trades: -105.54375
```

In [34]:
```
loss_rate = 1 - win_rate
expectancy = (win_rate * average_profit_profitable) - (loss_rate * average_profit_loss
print(loss_rate,expectancy)
```

```
0.3855421686746988 87.44899598393575
```

In [42]:
```
average_profit = data['Profit/Loss'][data['Entry Price'] < data['Exit Price']].mean()
average_loss = data['Profit/Loss'][data['Entry Price'] > data['Exit Price']].mean()
risk_reward_ratio = average_profit / abs(average_loss)

print('avg Profit',average_profit)
print('avg Loss',average_loss)
print('RRR',risk_reward_ratio)
```

```
avg Profit 76.09542483660131
avg Loss -105.54375
RRR 0.720984661210174
```

In [41]:
```
print(risk_reward_ratio)
```

```
0.720984661210174
```

In [53]:
```
# Calculate the daily returns
data['Daily Return'] = data['Profit/Loss'] / initial_portfolio_value
```

In [54]:
```
# Calculate the cumulative returns
data['Cumulative Return'] = (1 + data['Daily Return']).cumprod()
```

In [56]:
```
# Calculate the standard deviation of daily returns
daily_returns = data['Daily Return']
volatility = daily_returns.std()
```

In [57]:
```
# Calculate the Sharpe Ratio
rate_of_return = (ending_value / beginning_value) ** (1 / num_periods) - 1
sharpe_ratio = (rate_of_return - risk_free_rate) / volatility
```

In [58]:
```
# Calculate the maximum drawdown
cumulative_returns = data['Cumulative Return']
```

```
max_drawdown = (cumulative_returns / cumulative_returns.cummax() - 1).min()
```

In [59]:
```
# Calculate the max drawdown percentage
max_drawdown_percentage = max_drawdown * 100
```

In [60]:
```
# Calculate the Calmar Ratio
calmar_ratio = rate_of_return / max_drawdown
```

In [61]:
```
results = {
    "Total Trades": [total_trades],
    "Profitable Trades": [profitable_trades],
    "Loss-Making Trades": [loss_making_trades],
    "Win Rate": [win_rate],
    "Average Profit per Trade": [average_profit],
    "Average Loss per Trade": [average_loss],
    "Risk Reward Ratio": [risk_reward_ratio],
    "Expectancy": [expectancy],
    "Average ROR per Trade": [rate_of_return],
    "Sharpe Ratio": [sharpe_ratio],
    "Max Drawdown": [max_drawdown],
    "Max Drawdown Percentage": [max_drawdown_percentage],
    "CAGR": [cagr],
    "Calmar Ratio": [calmar_ratio]
}

results_df = pd.DataFrame(results)
results_df.to_csv('strategy_results1.csv', index=False)
```

In [ ]:

In [ ]:

In [ ]: