Stock Trading Strategy – Usage of Regression Analysis

BetAnalytica is into Financial Analytics. It was established in India in 2016 as a stock broker. It transformed itself as Stock Strategy Adviser for High Networth individuals.
An HNI client approached it, seeking an expertise in creating a Stock trading Strategy Model. The client wanted to focus on IBM Stock. International Business Machines Corporation is an American multinational technology and consulting company headquartered in Armonk, New York, with more than 350,000 employees serving clients in 170 countries.

The client specified that data to be used would be from 02 July 2020 to 31 December 2020 to build a univariate model for forecasting returns. It was Regression is a statistical method used in finance, investing, and other disciplines that attempts to determine the strength and character of the relationship between one dependent variable (usually denoted by Y) and a series of other variables (known as independent variables).

The Stock Market Outlook
Although the S&P 500 has risen year to date and is nearly 50% up from the March low, the performance has been very narrowly focused. Indeed, the S&P 500 growth index has returned more than 20% while the value index has fallen by more than 10%. The performance is even more skewed than this would suggest.

The IBM price data has two columns – Date and Adjusted Close price.

The IBM's Performance
IBM reported adjusted EPS that beat analysts' expectations for Q3 2020. Revenue was also higher than expected. Both adjusted EPS and revenue, however, were down compared to the same quarter a year ago. IBM's total cloud revenue grew YOY, led by strong performance from RedHat. The company noted that the recent spinoff of its managed infrastructure services business will help IBM to focus on its open hybrid cloud platform and AI capabilities.
It was stated in requirement that the Model should clearly provide insights on the following: -

1. Predicted Returns for next period.
2. Initial wealth to be invested
3. The trading Strategy based on Regression
4. The number of units to be traded.
5. The total profit

Case Questions

1. Does the data for IBM prices display a momentum or a contrarian pattern?
2. How can you use this information for devising trading strategies?
3. What are the ways to show the price movements visually?