STOCK PRICE PREDICTION

## TEAM -09

### PHASE 2: INNOVATION

A stock price prediction model is a complex task that requires a combination of data, machine learning techniques, and domain knowledge. The process involves gathering historical stock price data, preprocessing the data to remove missing values, outliers, and inconsistencies, and creating relevant features to improve the predictive power of the model. The data is divided into training, validation, and testing sets, with the training set used to train the model, the validation set for tuning hyperparameters, and the testing set for evaluating the model's performance.

An appropriate machine learning or deep learning model is chosen, such as linear regression, decision trees, random forests, support vector machines, recurrent neural networks (RNNs), or long short-term memory networks (LSTMs). The model is trained on the training data, adjusted hyperparameters, and evaluated using metrics like Mean Absolute Error (MAE), Mean Squared Error (MSE), and Root Mean Squared Error (RMSE). Hyperparameter tuning is performed using techniques like grid search or random search to optimize performance. Regularization and overfitting are also implemented to prevent overfitting.

The trained model is used to make stock price predictions on new, unseen data. The model is continuously monitored and updated as new data becomes available, and risk management strategies are incorporated into trading or investment decisions based on the model's predictions. If the model is deployed for real-time trading, it must be capable of handling data streaming and making predictions in real time.

Ethical considerations are crucial when using AI for stock trading, and documentation and reporting are essential for regulatory compliance and future reference. Stock price prediction is a challenging and uncertain task, and it is crucial to approach it with caution and a comprehensive understanding of financial markets and risk management strategies.