1. \*\*Machine Learning Models:\*\*

- XGBoost

- Random Forest

- LASSO Regression

- Ridge Regression

- Elastic Net Regression

- Support Vector Machine (SVM)

2. \*\*Model Evaluation:\*\*

- Evaluate each model using appropriate evaluation metrics such as RMSE (Root Mean Squared Error), accuracy, precision, recall, or F1-score.

- Cross-validate the models to ensure robustness and generalization.

- Compare the performance of each model to determine which one performs best for the task of predicting and creating an investment portfolio.

3. \*\*Portfolio Creation:\*\*

- After selecting the best-performing model, use it to predict the returns of the shares included in the DAX30 index.

- Based on the predicted returns, create an investment portfolio that maximizes return or minimizes risk, depending on the investment objectives.

4. \*\*Visualization:\*\*

- Visualize the stock prices, returns, and technical indicators of the shares included in the DAX30 index to gain insights into their historical performance.

- Visualize the performance of each machine learning model using appropriate plots such as ROC curves, precision-recall curves, or learning curves.

- Visualize the predicted returns and the composition of the investment portfolio created by the selected model.

5. \*\*Documentation:\*\*

- Provide comprehensive documentation that includes explanations of the data preprocessing steps, feature engineering, model selection, evaluation metrics, and portfolio creation strategy.

- Include code comments and annotations to ensure clarity and reproducibility of the analysis.