# **Semester Project (Data Science)**

**TOPIC: SMART PHONES COST RECOGNITION AND PREDICTION MODEL**

**SUMMARY:**

Forecasting guide us to look at past and real-time data to predict future demand. As a result, we'll be able to better predict demand fluctuations. On the other hand, forecasting the future is difficult. Even if we have a great process in place our forecasts will never be accurate. This data science project has two main objectives; to predict the price range of the mobile for dataset based on different features and to check the accuracy of four different machine learning classifiers, which are Decision tree, Logistic Regression classifier, K- Nearest Neighbor and Random Forest model. This project is more and less inclined towards data analysis and machine learning. In this project, price range is the target variable. Ram and battery power are proved to have a better relationship with price range which contributes most towards changing the price range from lower to higher. After careful deployment of four different machine learning algorithms, KNN classifier got the highest accuracy which 91.25% and Logistic Regression classifier got the lowest accuracy 61.25%. But this case is not same for all datasets, since different ML algorithms are accurate for different models. Apart from that, accuracy score, precision score, recall score, f1 score, f-beta score, hamming loss, balanced accuracy score, cohen-kappa score, explained variance score, r2 score, mean absolute error are also calculated with a representation and validation with classification report, confusion matrix and cross validation report. This is a challenging data science problem because similar smartphones with minor difference in features such as additional specifications, different brand qualifications, and product demand can have a significant impact on the product prices.