# Smartphone Recommendation System

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## Abstract

The use of mobile devices in combination with the rapid growth of the internet has generated an information overload problem. Recommender systems are essential for determining which data are useful to the user. However, numerous parameters, such as location, screen size, and processing speed, are critical to information retrieval on mobile devices. Therefore, this project is proposed to build a Smartphone Recommendation System.

## Design

This project originates from data provided by Kaggle to build a smartphone recommendation system. Before building the model, the data needs analysis and preparation such as checking if there are any missing values or dropping irrelevant features.

## Data

This project builds a smartphone recommendation based on Kaggle dataset. Smartphone recommendation dataset contains 374910 rows and 11 features. The description of each feature below:

• Author: name of the person who gave the rating.
• Country: country the person who gave the rating belongs to.
• Data: date of the rating.
• Domain: website from which the rating was taken from.
• Extract: rating content.
• Language: language in which the rating was given.
• Product: name of the product/mobile phone for which the rating was given

## Algorithms

- Data Analysis and Preparing

Data analysis and setup such as check missing values, fill in null values in the "score" and "score_max" column, round x scores to the nearest integer, and drop irrelevant features.

- Models

The dataset splatted based on common ratio 20% for the testing and the rest for training. Therefore, the training set used to train two models.
The models are used:
Model1: collaborative filtering model using SVD.
Model2: collaborative filtering model using kNNWithMeans from surprise using Item based model

- Model Evaluation

Model1: 2.3674 RMSE
Model2: 2.4202 RMSE

## Tools:

Google Colab-Python (Pandans, Numpy, Matplotlip , skelrarn ,and surprise).

## Communication

The visuals and discussion were presented at slide presentation.