Predicting Song Popularity

Classification Project

Presented by : **Mai & Basma**

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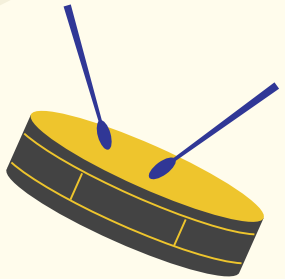
Introduction



About Spotify

World's largest music streaming service providers

Founded on 23 April 2006

165 million paying subscribers

About Spotify

- Sweden

Back Story

Situation

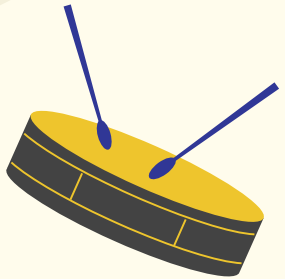
- Meeting with Spotify
- Deploy User friendly interface

Solution

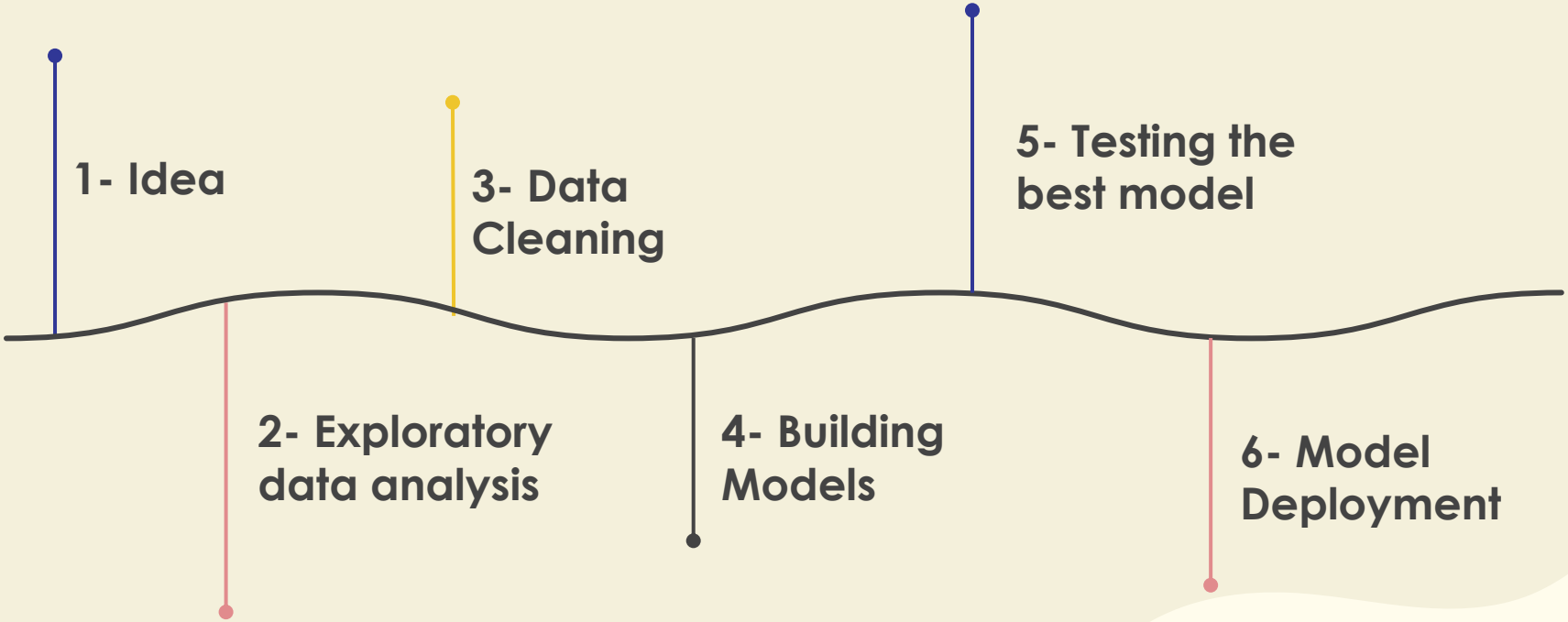
Building a classification model to predict whether a song will be a hit or not

02

Workflow



Workflow


1- Idea
2- Exploratory data analysis
3- Data Cleaning
4- Building Models
5- Testing the best model
6- Model Deployment

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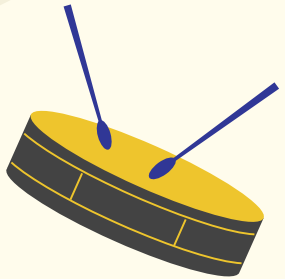
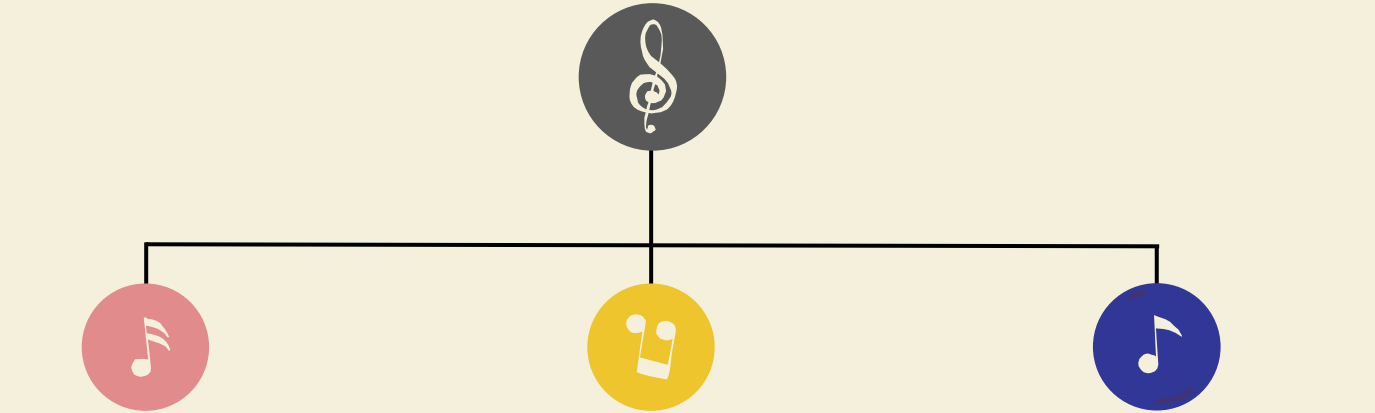
Data & Design

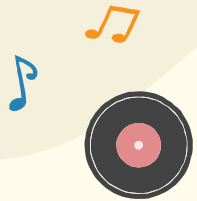


Dataset

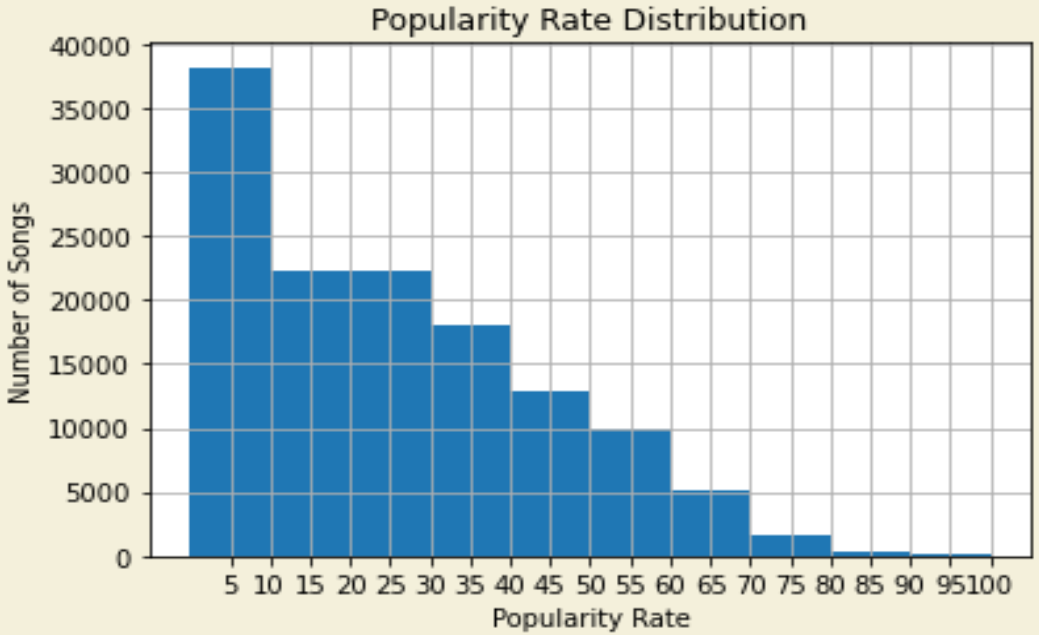

130,662
Observations
16
Features
Target
Popular, not popular

Data Cleaning

- Checking for null values
- Duplicate rows
- Renaming columns
- Creating a new column
- Drop unnecessary columns



Target Transformation

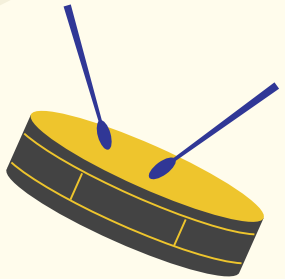


1 Popular

0 Not Popular

04

Tools



Tools

Numpy,Pandas

Data Cleaning and Manipulation

Matplotlib,Seaborn

Visualization

SKlearn

Model Bulliding

Flask

Web Deployment

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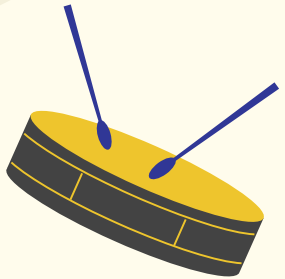
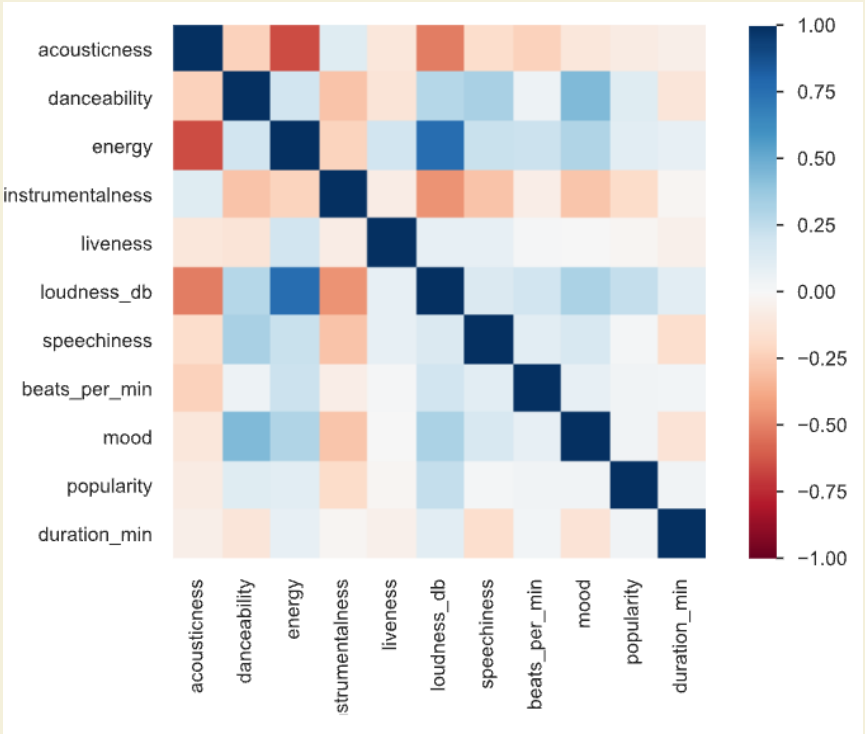
Data Visualization



Data Visualization

The most repeted artist names in dataset

Data Visualization



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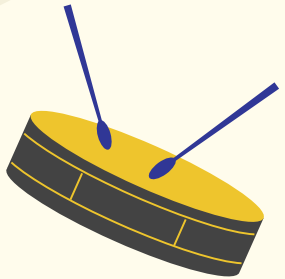
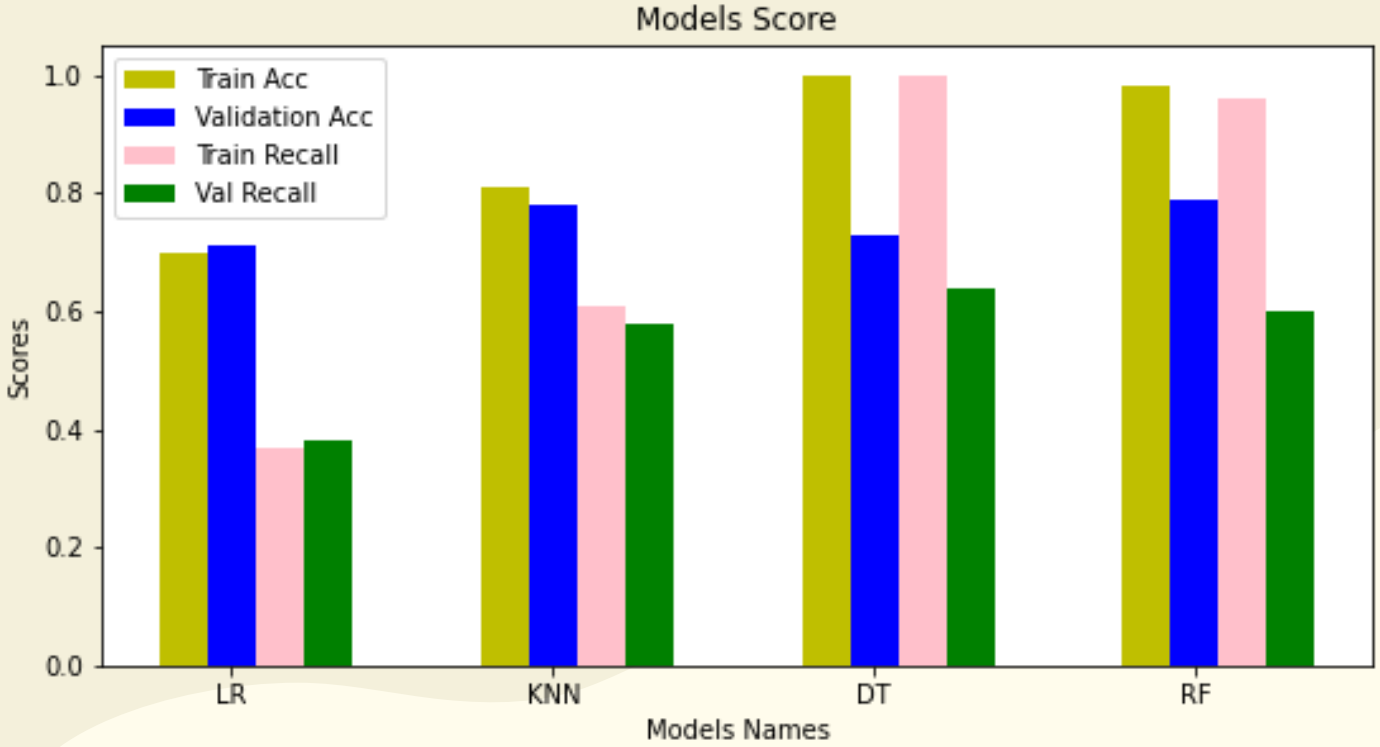
Models



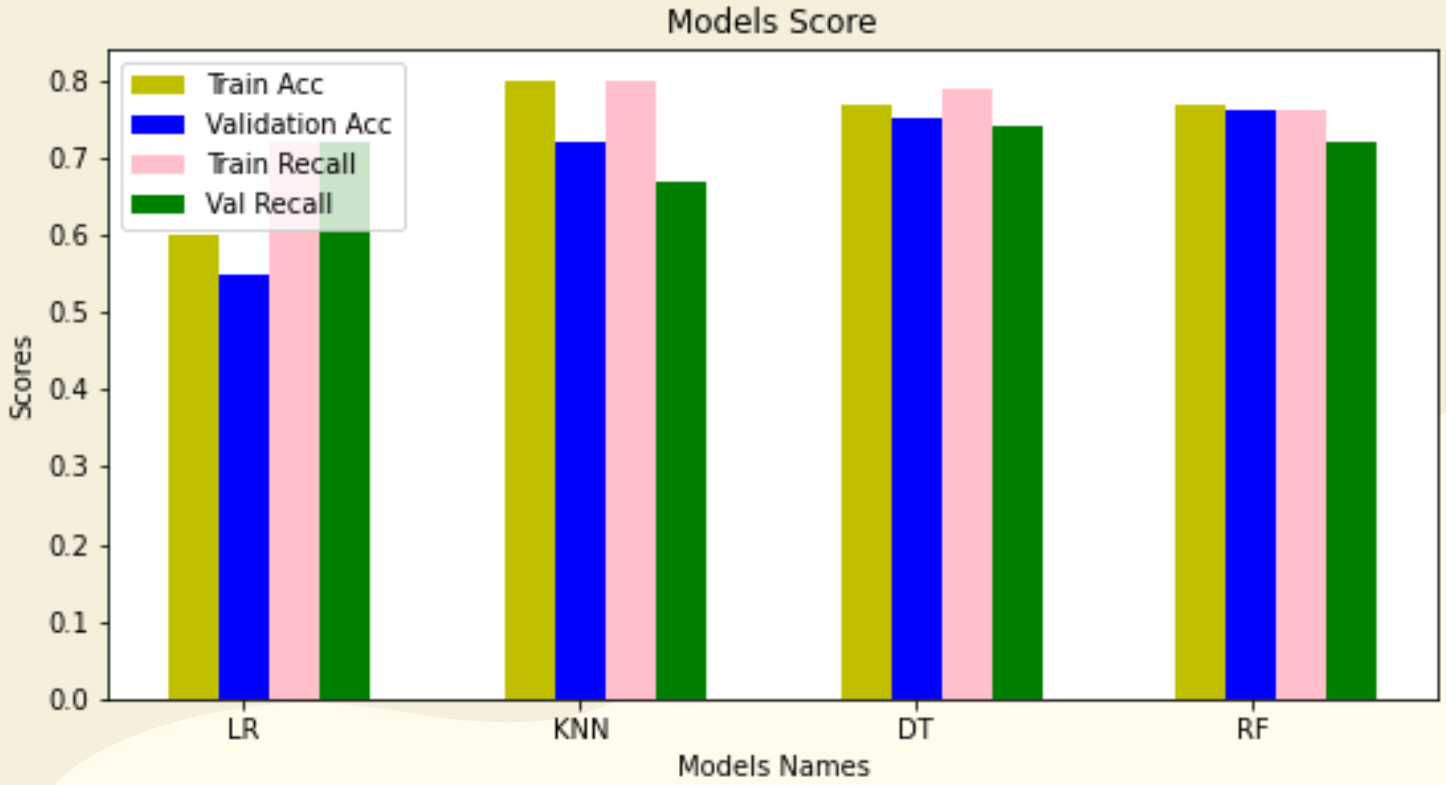
Bassline Models Metrics



Experiments

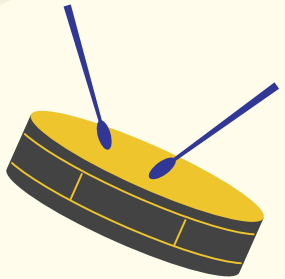
I. Class Imbalance
II. Features Importance
III. Ensembling
IV. Stacking
V. GridSearch
VI. Removing Features and Tuning Hyper Paramerters

Metrics

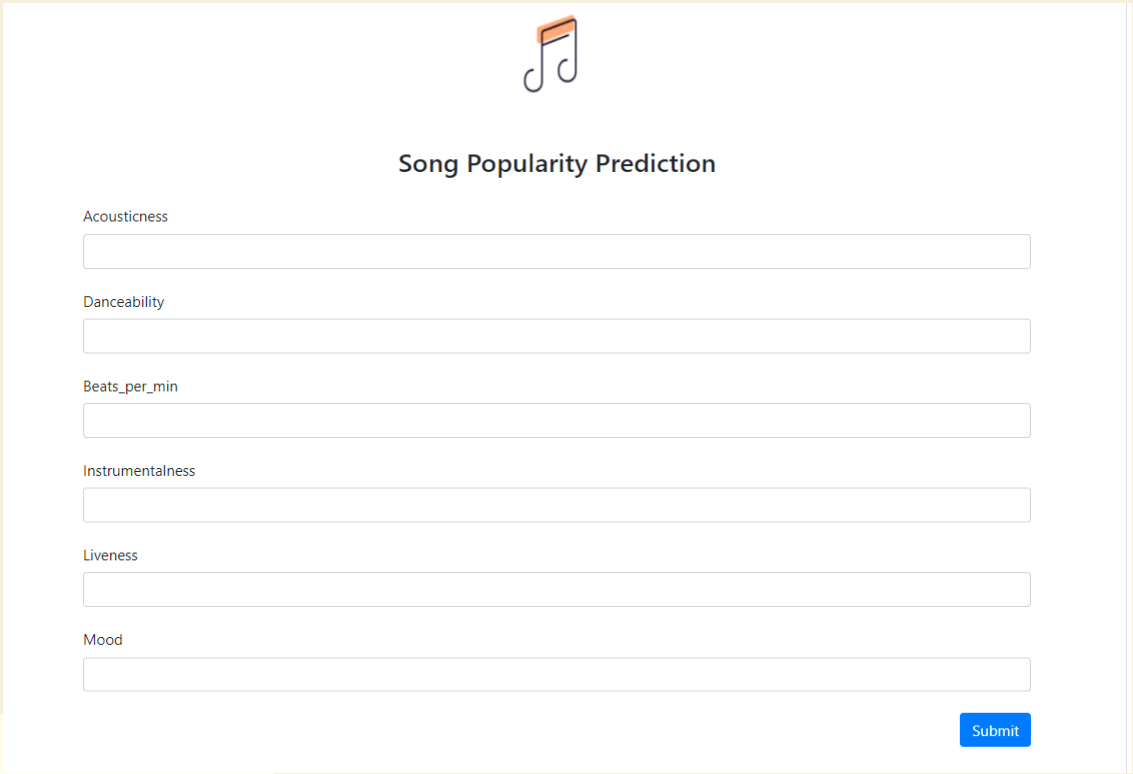

Models Score
Train Acc
Validation Acc
Train Recall
Val Recall
Scores
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
LR
KNN
DT
RF
Models Names

07

Model Deployment



Model Deployment



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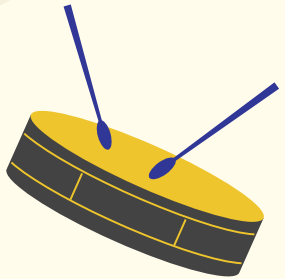
Conclusion

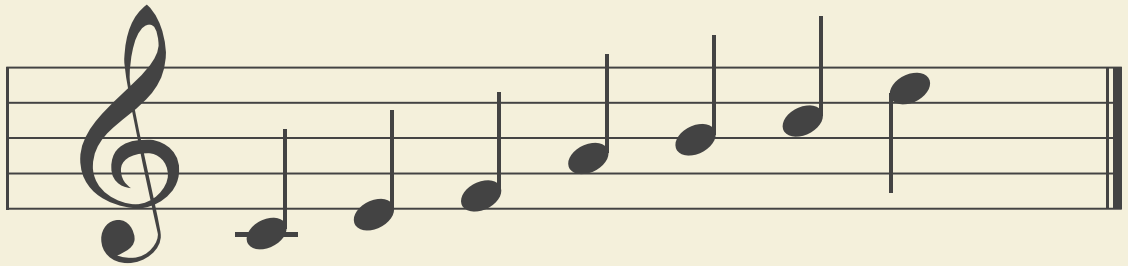


Conclusion

- This project demonstrated the possibility of predicting music popularity
- Decision Trees provided the best predictions on the validation model, with an Accuracy score of **0.75** / **0.74** Recall

Future work

- Optimizing the model
- Explore additional features



Thank you