



A central graphic features three perfume bottles (two orange and one pink) surrounded by various aromatic ingredients: orange slices, apple slices, cinnamon sticks, star anise, and green leaves. The background is a light beige color with several large, clear water droplets scattered around the perimeter.

PERFUME RECOMMENDER SYSTEM

ARIANA BINA

INTRODUCTION

OBJECTIVE

- CONSTRUCT A RECOMMENDER SYSTEM
DESIGNED TO HELP USERS DISCOVER NEW
PERFUMES BASED ON THEIR PREFERRED
SCENT PROFILES.

GOAL

- INCREASE CUSTOMER ENGAGEMENT,
SATISFACTION, SALES



DATA OVERVIEW

Source:

Kaggle

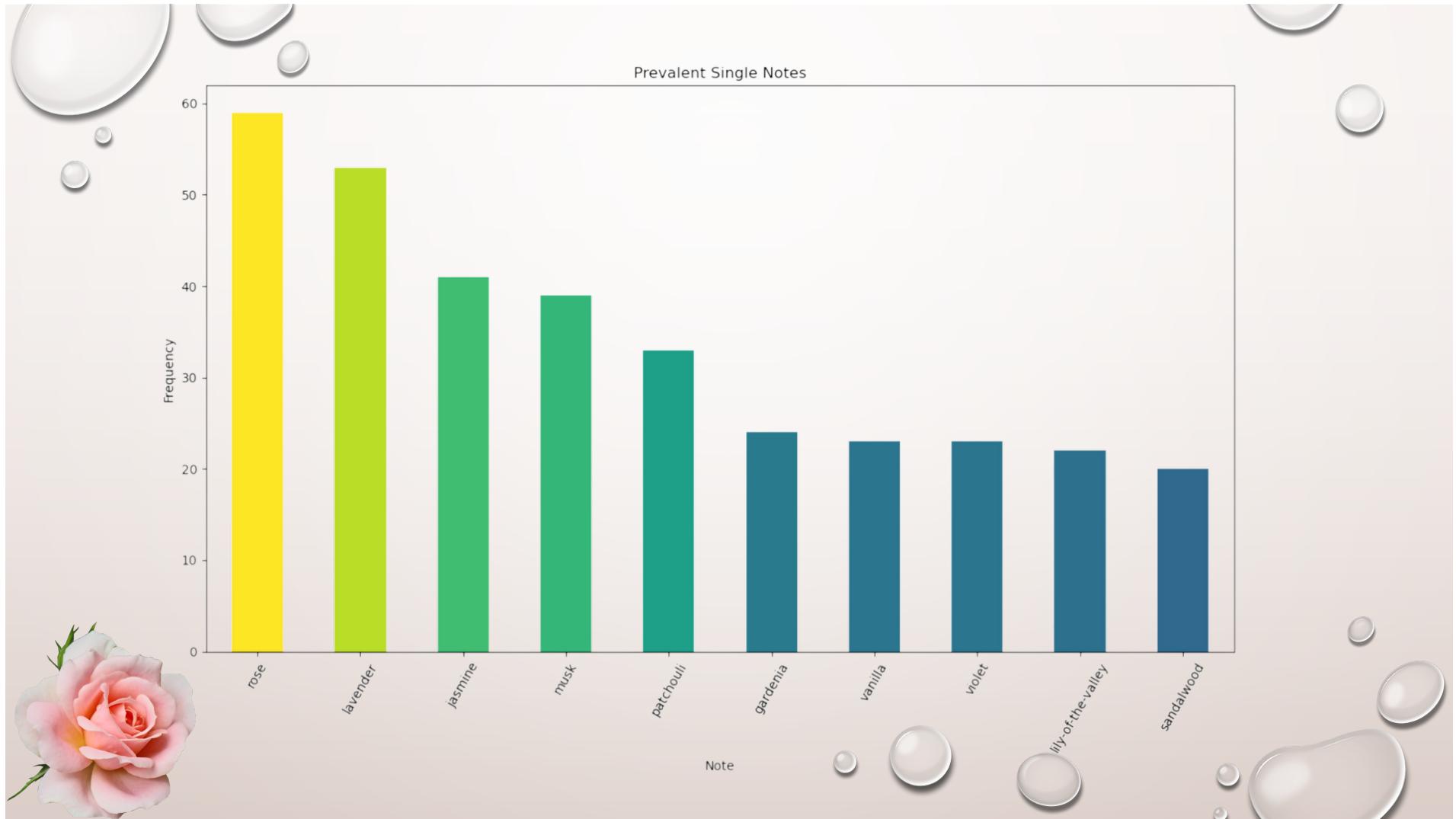
Summary Stats:

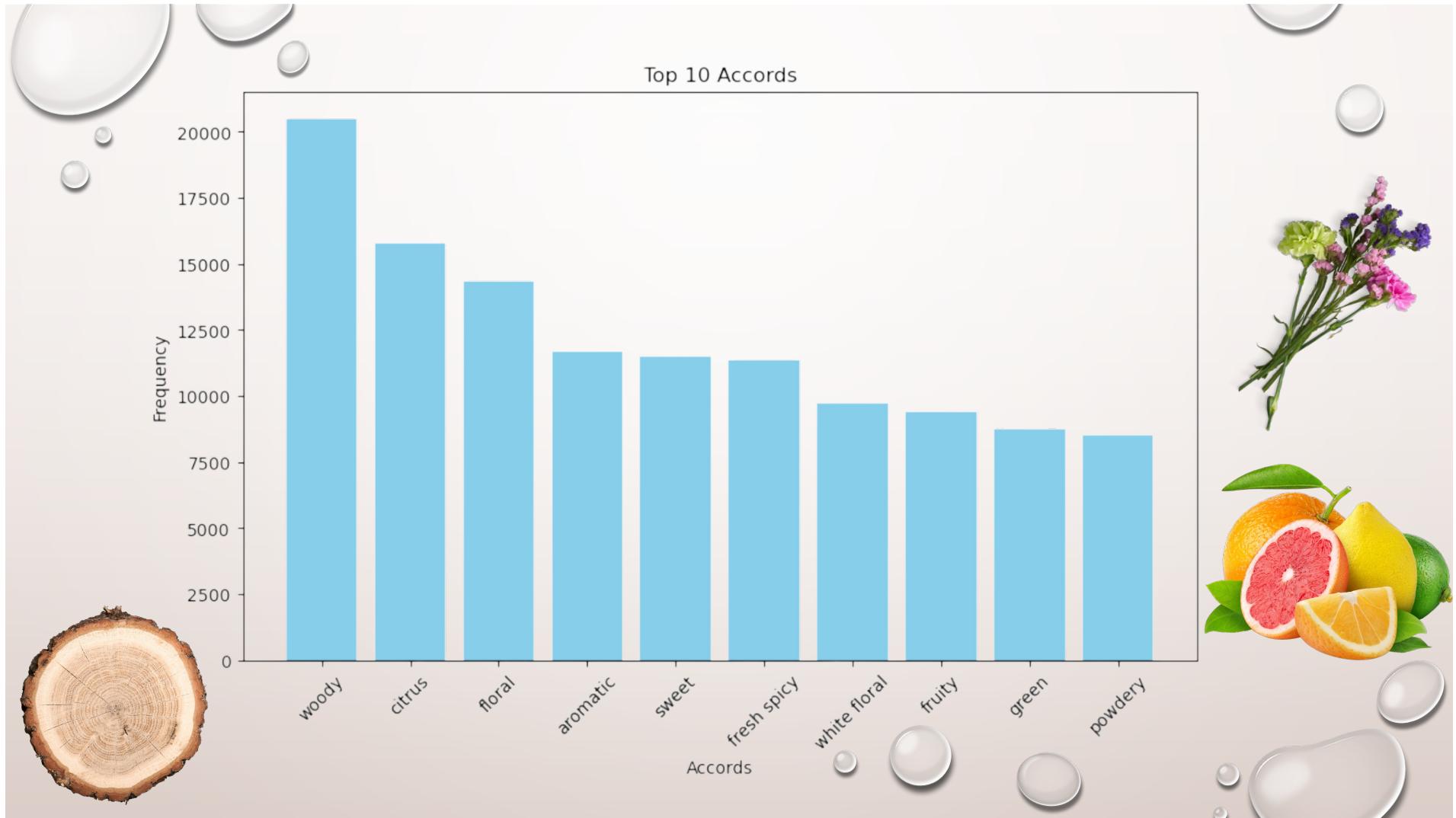
- 33,146 perfumes
- 2,536 brands
- 1,302 notes
- 144 accords

Launch Years:

1533 – 2017







RARE + STRANGE NOTES!

- CORK
- BBQ
- SURF WAX
- SKUNK CABBAGE
- ASPARAGUS
- JEANS
- ALUMINUM



OLDEST FRAGRANCE



Santa Maria Novella



main accords

citrus

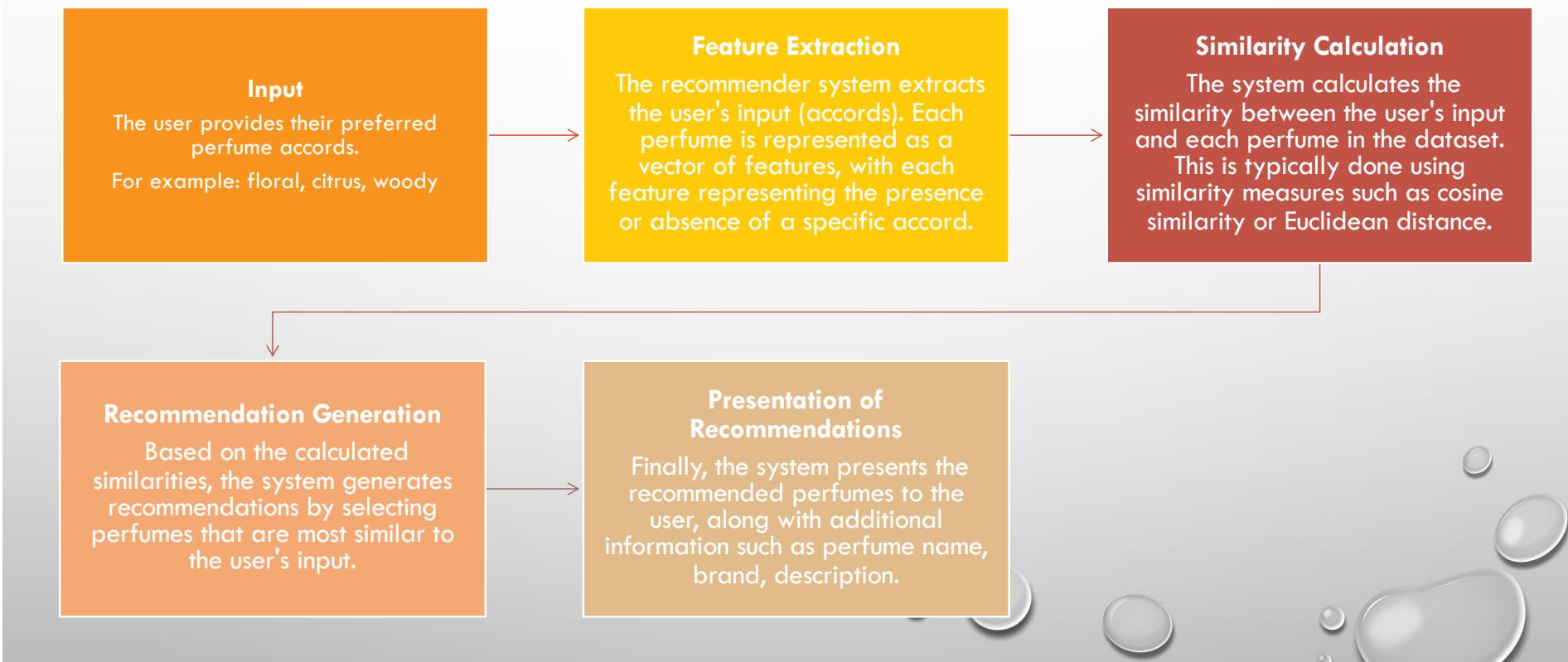
aromatic

fresh spicy

warm spicy

lavender

CONTENT BASED RECOMMENDER SYSTEM



SIMILARITY CALCULATION

RANDOM

- **HOW IT WORKS:** SELECTS PERFUMES RANDOMLY FROM THE AVAILABLE POOL OF OPTIONS WITHOUT ANY CONSIDERATION FOR USER INPUT.
- **APPLICATION:** USED AS A BASELINE FOR EVALUATING THE PERFORMANCE OF MORE SOPHISTICATED RECOMMENDATION ALGORITHMS.

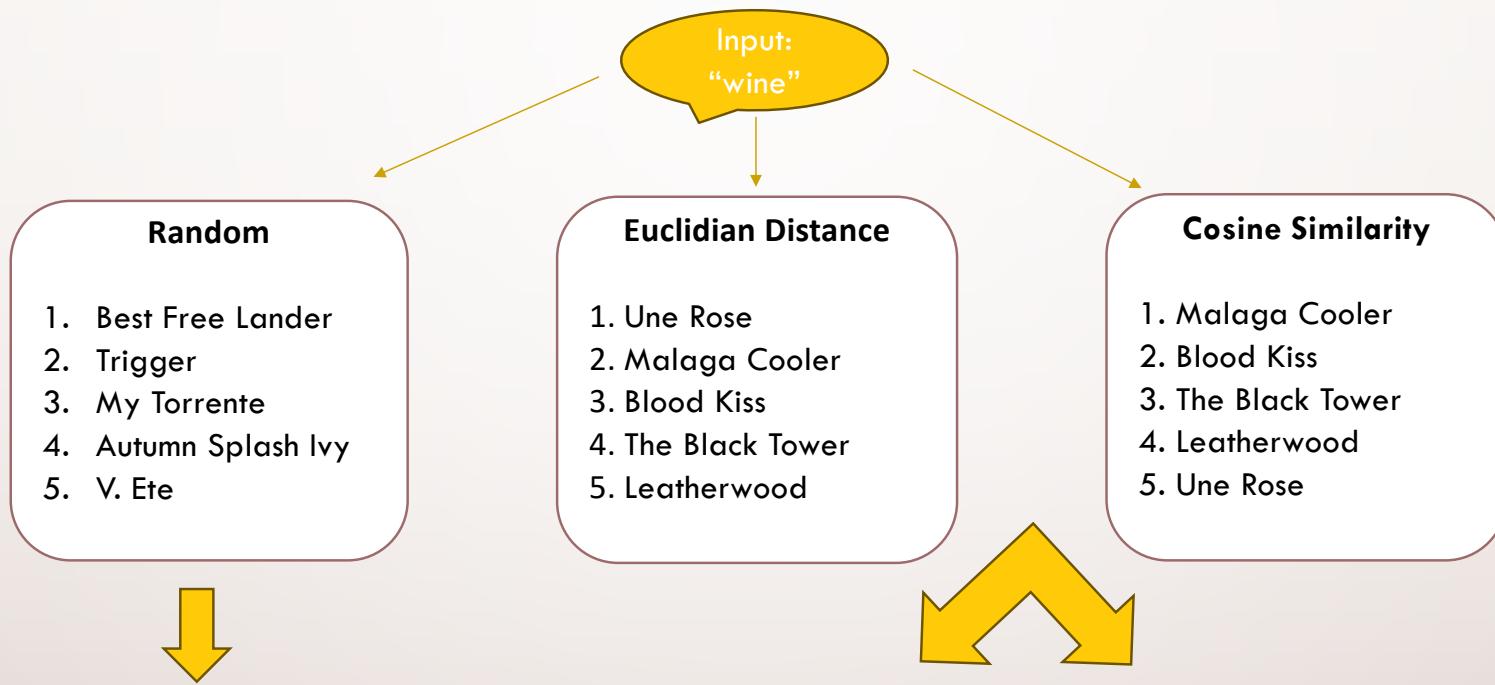
EUCLIDIAN DISTANCE

- **HOW IT WORKS:** THE FUNCTION CONVERTS THE SCENT PROFILES INTO NUMERICAL VECTORS, USING TF-IDF. THEN MEASURES THE DIFFERENCE BETWEEN THESE VECTORS BY CALCULATING THE SQUARE ROOT OF THE SUM OF THE SQUARED DIFFERENCES BETWEEN THEIR CORRESPONDING ELEMENTS. THIS QUANTIFIES THE DISSIMILARITY BETWEEN PERFUMES.
- **APPLICATION:** PERFUMES WITH SMALLER EUCLIDIAN DISTANCES ARE RECOMMENDED AS THEY ARE CONSIDERED MORE SIMILAR TO USER INPUT.

COSINE SIMILARITY

- **HOW IT WORKS:** THE FUNCTION CONVERTS THE SCENT PROFILES INTO NUMERICAL VECTORS, USING TF-IDF. THEN COMPUTES THE COSINE OF THE ANGLE BETWEEN TWO VECTORS.
- **APPLICATION:** PERFUMES WITH HIGHER COSINE SIMILARITY SCORES ARE CONSIDERED MORE SIMILAR TO USER INPUT.

COMPARING MODELS



- No wine accord in any of these

- Exact same perfumes, but in a different order