NAME ANALYSIS

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PROBLEM STATEMENT

Name Analysis is the task of analyzing the given set of first names and last names and determining the country of origin.

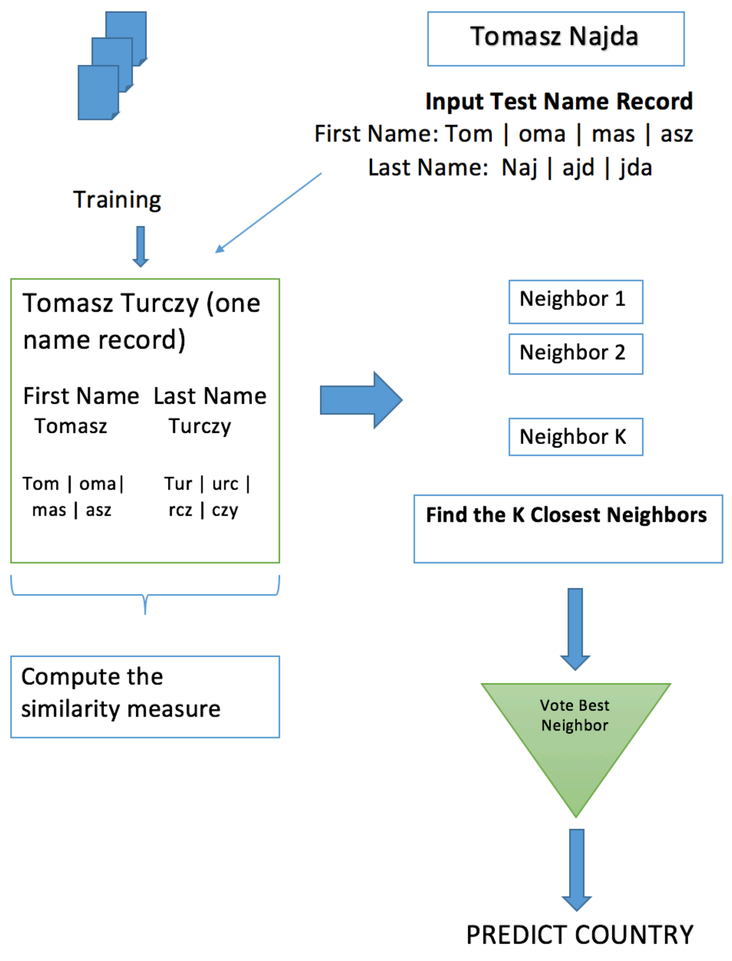
INTRODUCTION

- Names are given to any tangible object, place, person, music files etc.
- Names considered vary depending on things like the country of location, culture, origin language etc.
- Countries of origin considered: Netherlands, Ireland and Poland

BACKGROUND

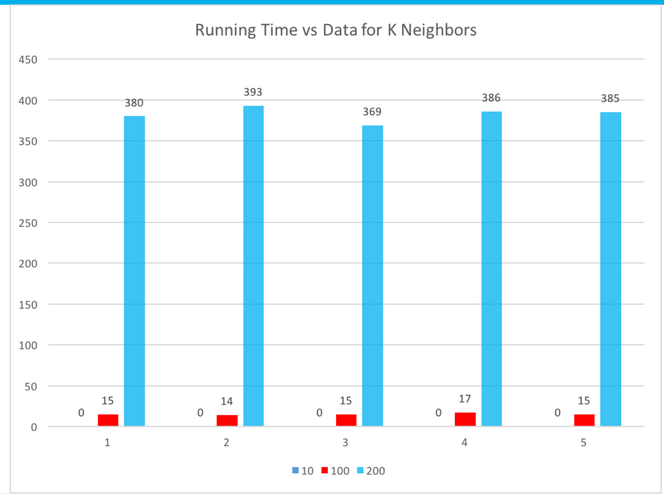
- Pachet et al analyze the syntax and semantics of file names and create heuristics on the basis of the structural analysis.
- Kridharan et al determine the ethnicity from names by dividing the names into substrings of length 3 and find the ethnicity using the naive Bayesian algorithm.
- The approach taken for analyzing the names involves parsing the names and segregating them into first names and last names.
- Each name is predicted by obtaining the set of trigrams associated with it and determining the country of origin by using the classification algorithm: k-nearest neighbors

APPROACH



- Data source: FamilySearch.org.
- Attributes included Name, Gender, Date of Birth , Address, Mother's Name, Father's Name.
- Data Cleaning and Preparation: Extracting First Name and Last Name, Gender, Country of each row.
- Modeling: Using k-nearest neighbors algorithm with trigrams.

RESULTS & OBSERVATIONS



- Accuracy & Running Time is directly proportional to data.
- Running Time is directly proportional to the value k.

CONCLUSION & FUTURE WORK

- Prediction of country of origin is possible by dividing the names into sets of tri-grams and using the k-nearest neighbors classification algorithm.
- Dice's coefficient is an adequate measure for calculating similarity between two names.
- Computation time can be significantly decreased by using the Map Reduce framework.

REFERENCES

- A Naturalist Approach to Music File Name Analysis. Pachet, F. Laigre, D. ISMIR 01, USA. (2001)
- A "Roziah" by Any Other Name: A Simple Bayesian Method for Determining Ethnicity From Names. Kridaraan Komahan and Daniel Reidpath. American Journal of Epidemiology (2014)