Finding missing people

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Overview

1. CONAN
   - Detailed analysis
   - Face recognition
   - System architecture
   - distance
   - database design

Team Names

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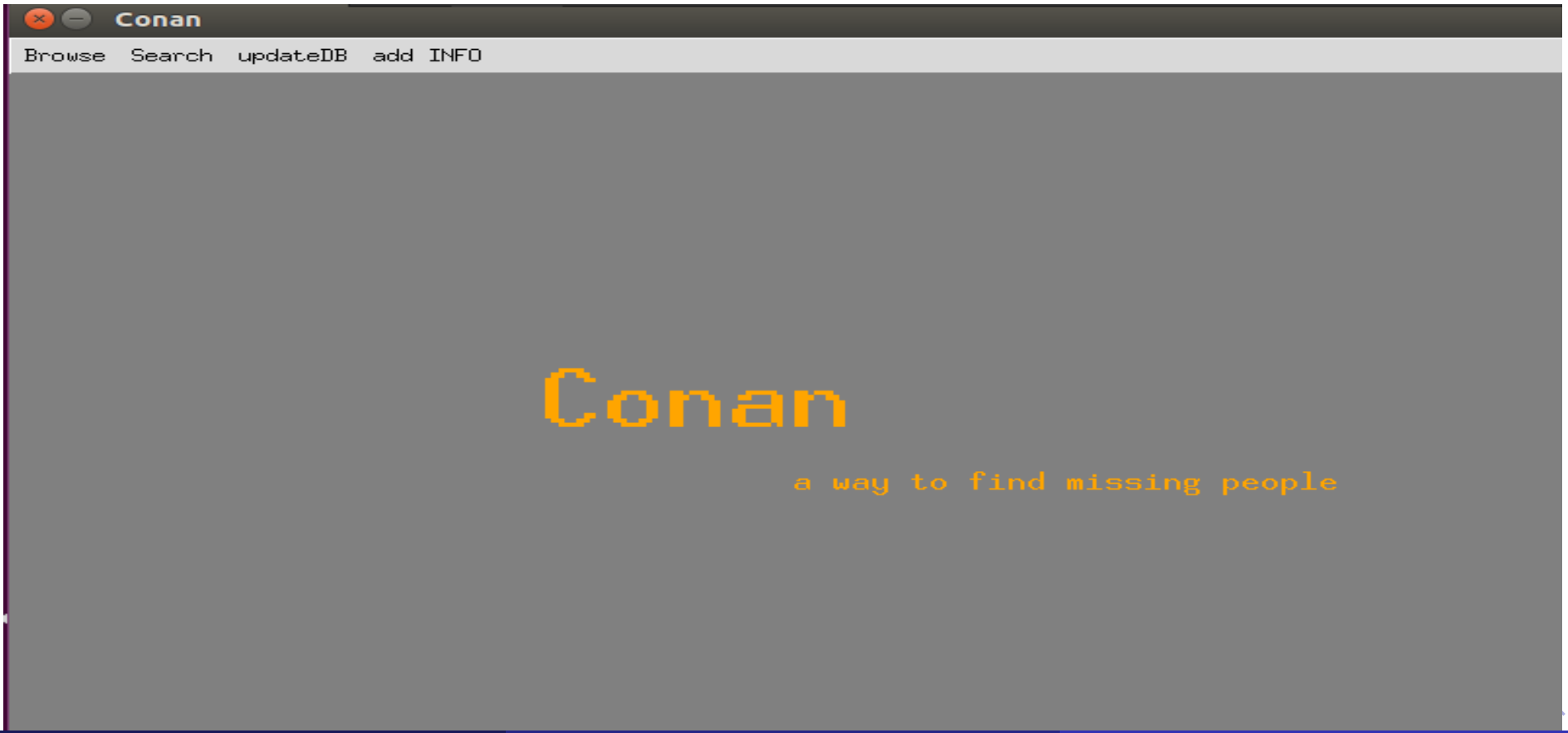
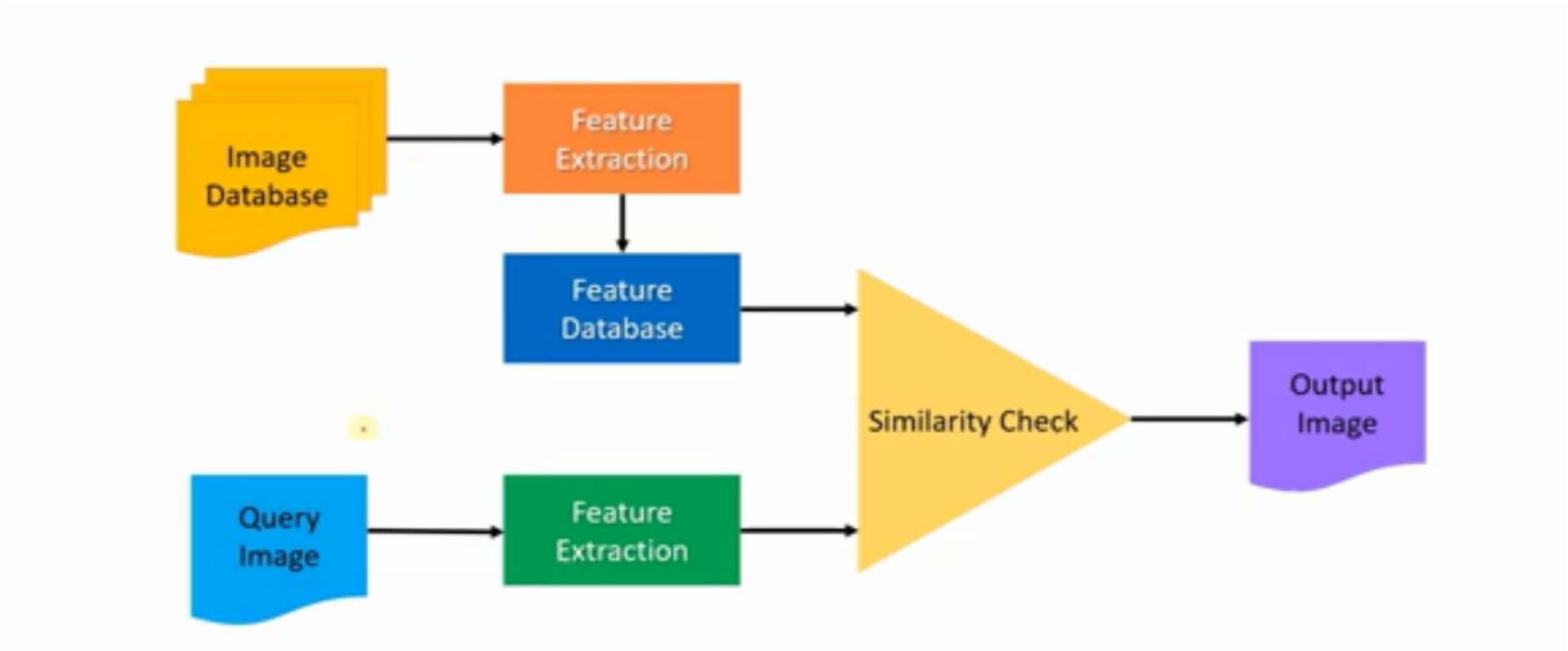
Introduction

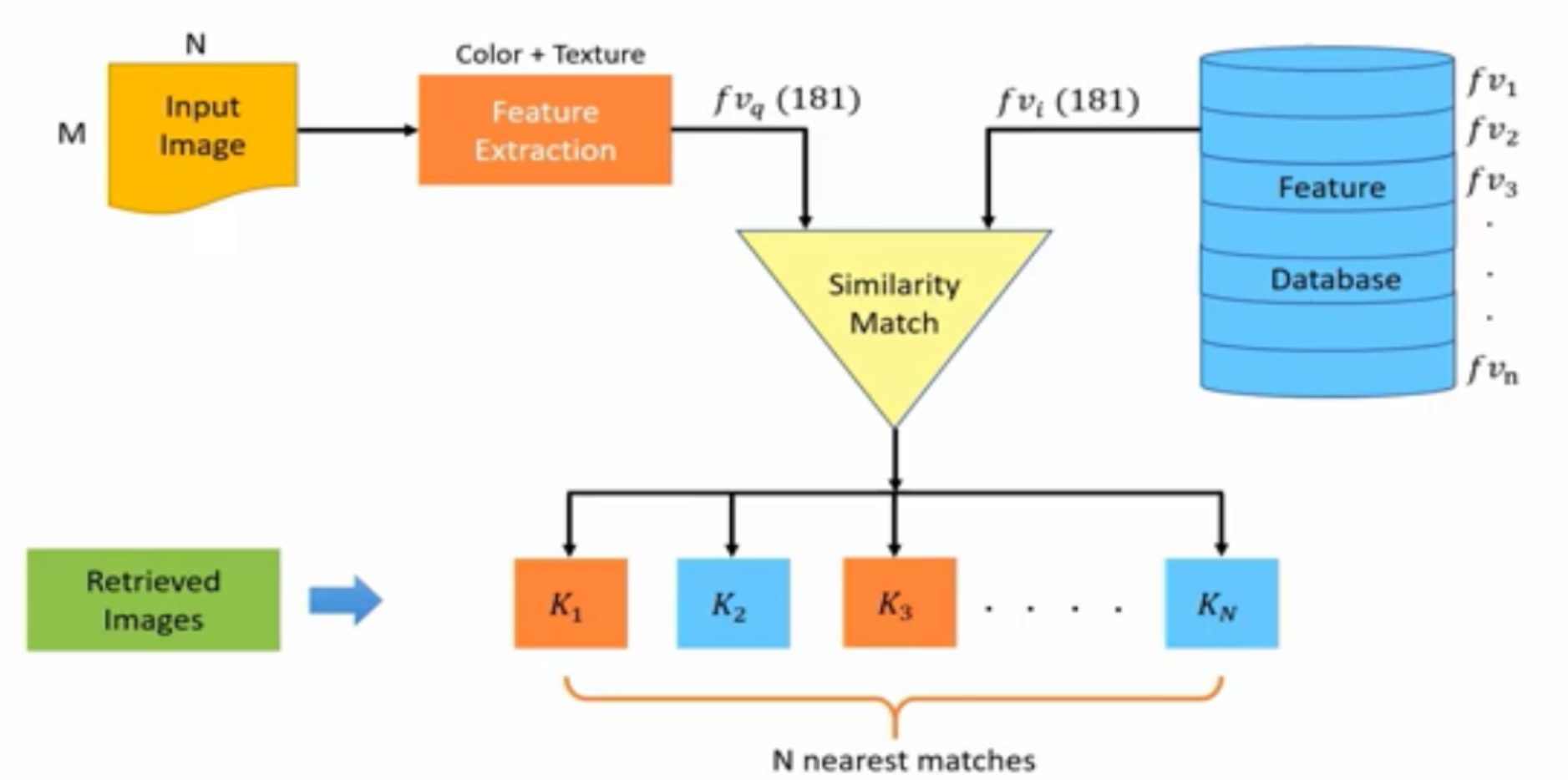
In this project the user can find missing people by search with the old pictures or young pictures of missing people. The project uses techniques that extract features from the pictures and check similarity between the query picture and the pictures in the dataset to retrieve the similar picture to the query picture.



Detailed analysis



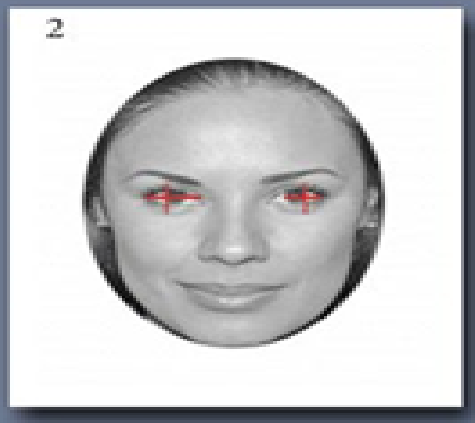
cont

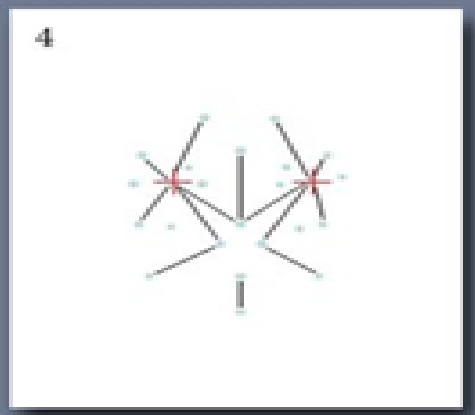

N
M
Input Image
Color + Texture
Feature Extraction
fv_q (181)
fv_i (181)
Feature Database
fv_1
fv_2
fv_3
fv_n
Similarity Match
Retrieved Images
K_1
K_2
K_3
K_N
N nearest matches

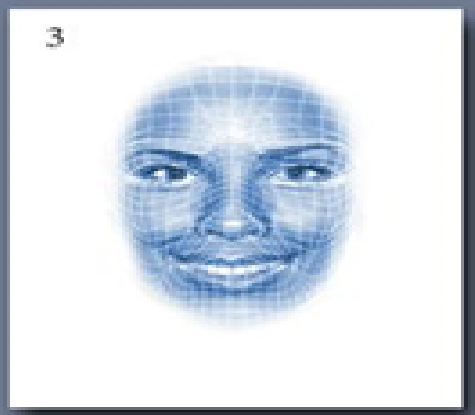
Face recognition

How facial identification works

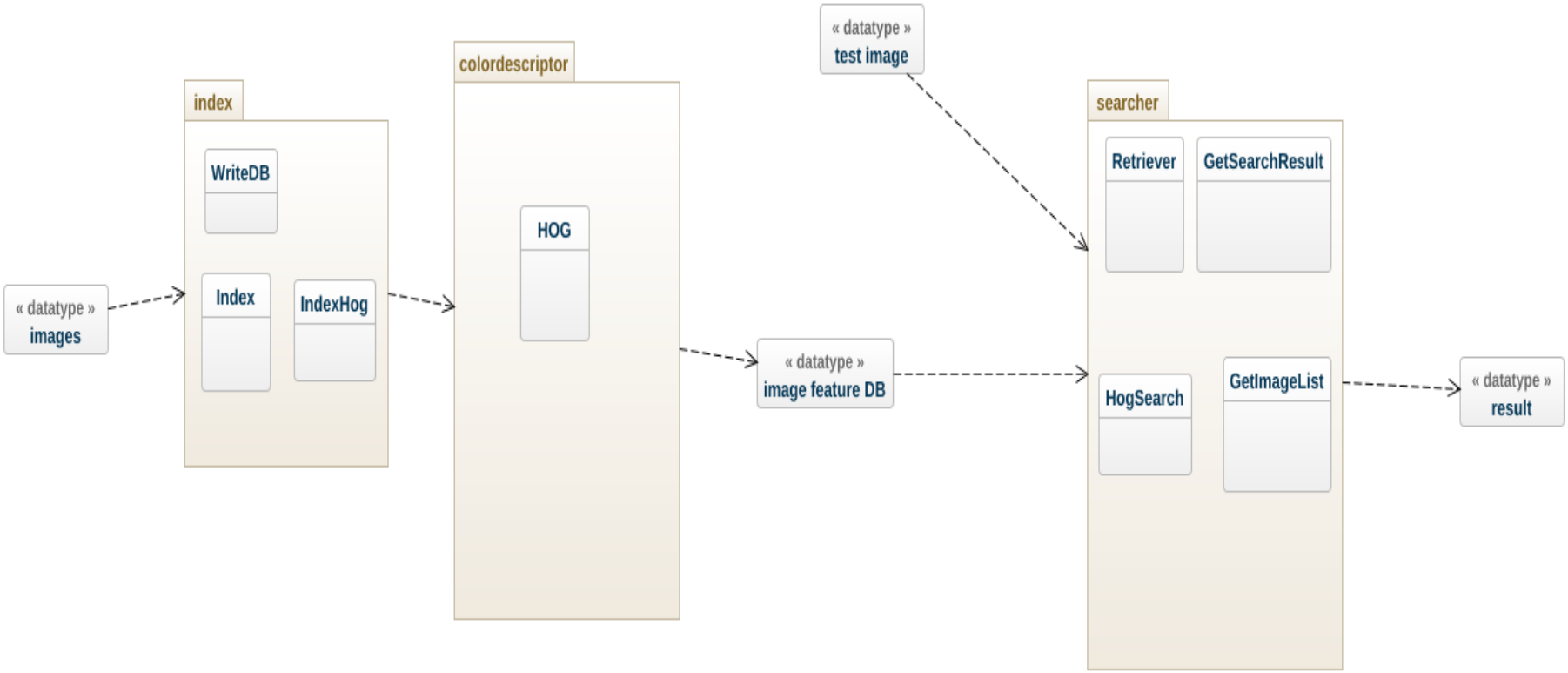
1. Image is captured
2. Eye locations are determined
3. Image is converted to grayscale and cropped
4. Image is converted to a template used by the search engine for facial comparison results
5. Image is searched and matched using a sophisticated algorithm to compare the template to other templates on file
6. Duplicate licenses are investigated for fraud







System architecture



distance

we use Mean squared error method to compare between the image we search for and images saved in database

- Absolute Distance

$$D_{Absolute}(h, \bar{h}) = \sum_{K-1}^{K} |h_K - \bar{h_K}| \tag{1}$$

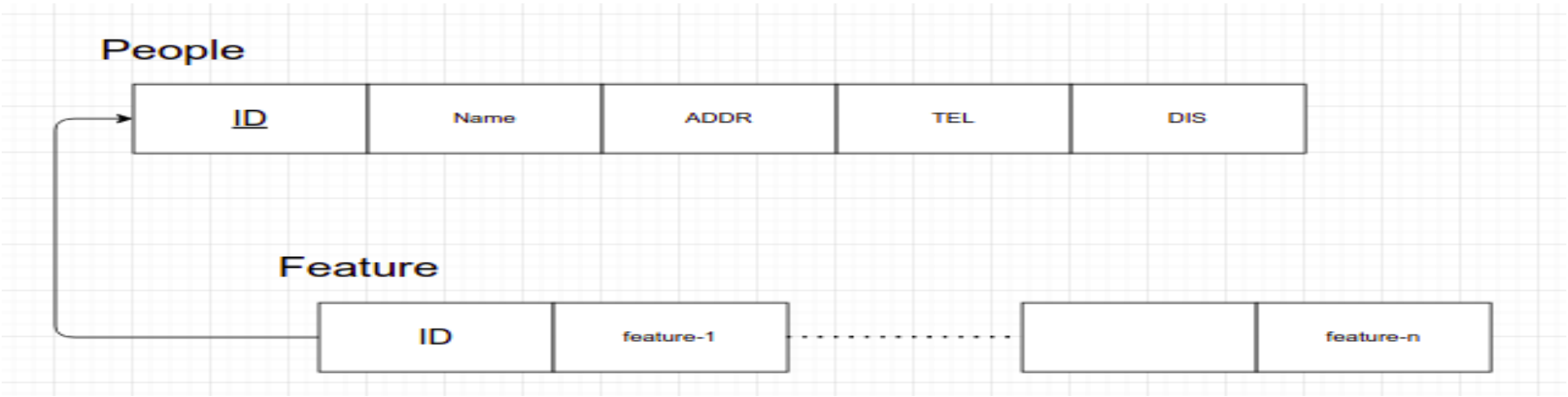
- Euclidean Distance

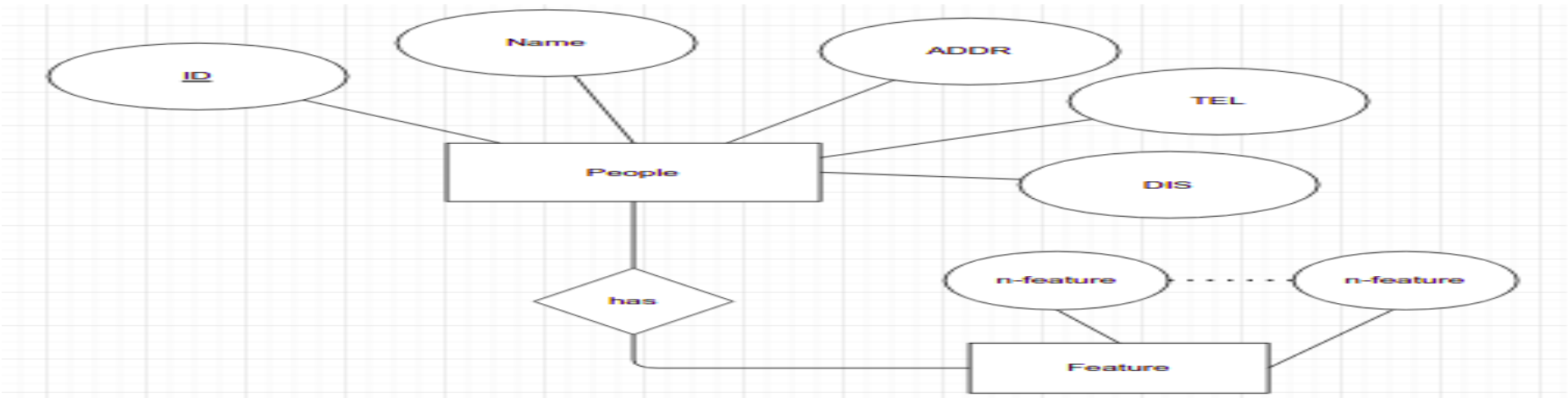
$$D_{Euclidean}(h, \bar{h}) = \sqrt{\sum_{K-1}^{K} (h_K - \bar{h_K})^2} \tag{2}$$

- Intersection Distance

$$D_{Intersection}(h, \bar{h}) = 1 - \sum_{K-1}^{K} in(h_K, \bar{h_K}) \tag{3}$$

database design





References

CSE 576

washington.edu

courses.cs.washington.edu/courses/cse576/19s/notes/

The End