Conan:Finding missing people

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Abstract

This paper presents imp DIP project

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.

1 project description

This is a python desktop application, it applies the Pattern Recognition and Digital Image Processing techniques to analyze, design, and implement multi-media retrieval system, where the media that we are going to use are the images .we have implemented many techniques belong Pattern Recognition and Digital Image Processing and AI techniques in retrieval and face Recognition. .

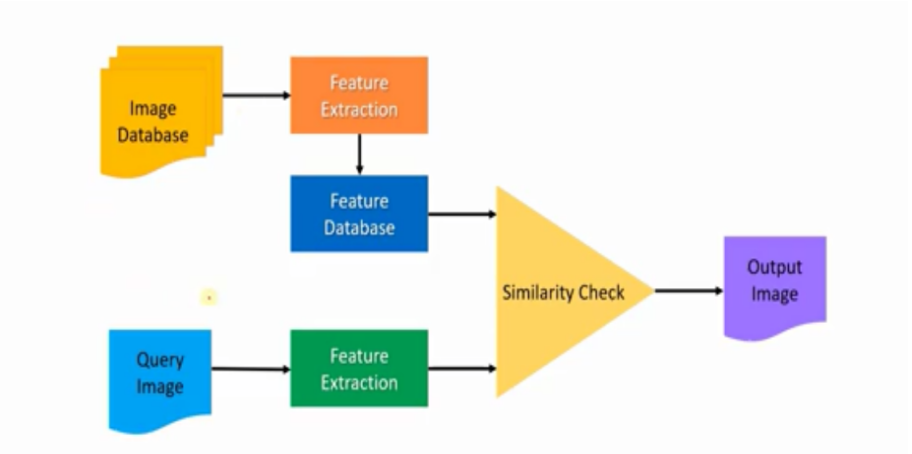


Figure 1: image system block diagram

2 Beneficiaries of the project

The family who want to find any one of their members because of missing of him. Any one who the government wants to find from his traffic camera's pictures to detect his data and find him.

3 Detailed analysis

some distance that we used to measure similarity

- 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

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

4 Detailed description of the adopted techniques

steps

1. We make picture to parts to make a better histogram
2. Make histogram for each part
3. Combine all histograms

distance

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

5 Time plan

In Prepairing Datasets phase, We search for qualified dataset that qualify project. In parrallel, Extraction Features Algorithms design are finished. The software is developed and then make testing for all functionality of the program.

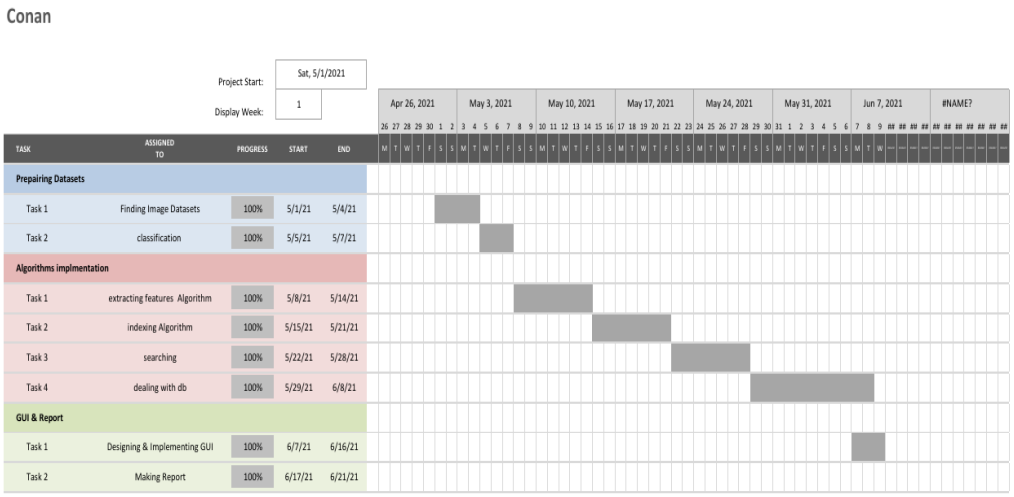


Figure 2: time plan

6 System architecture

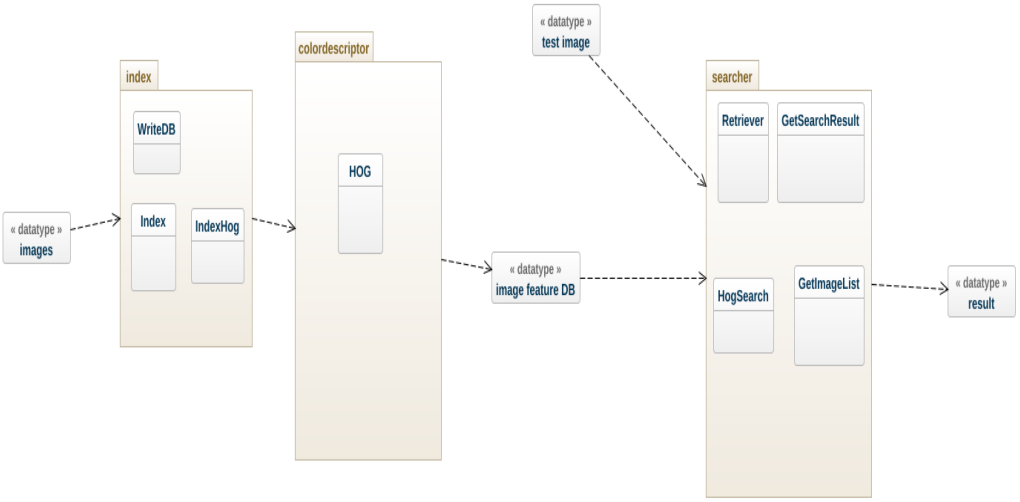


Figure 3: System architecture class-diagram

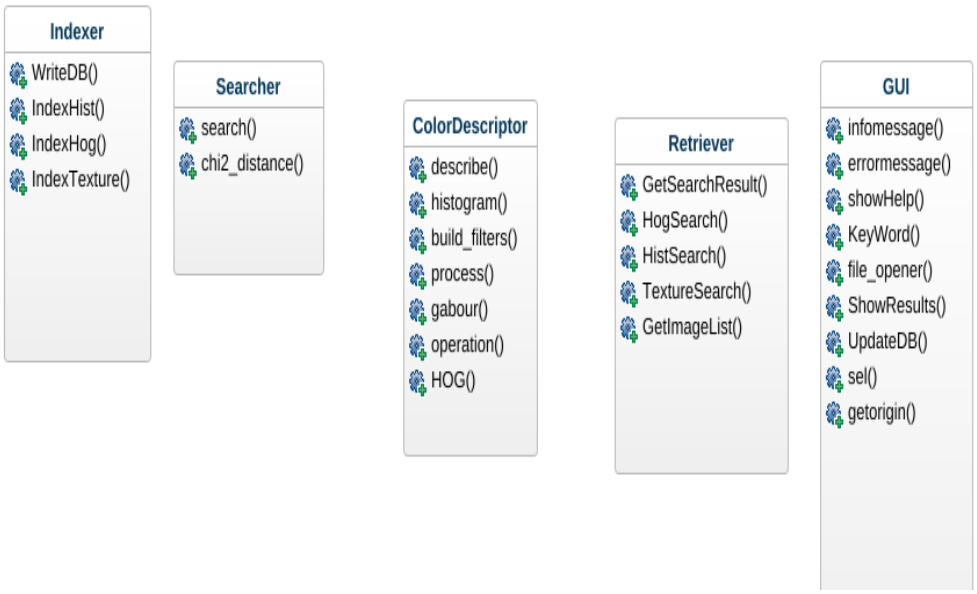


Figure 4: class-diagram

7 database design

- We implemented the schema in sqlite and store features in csv file which ID is the path of the image.

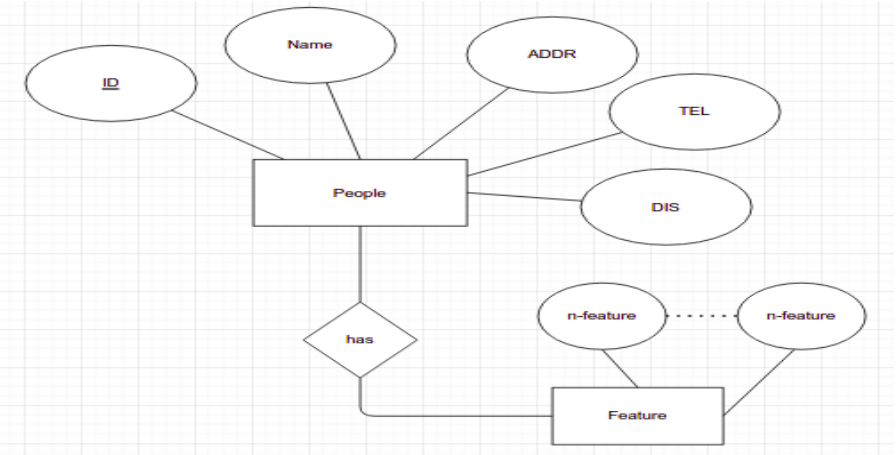


Figure 5: DB EER Diagram

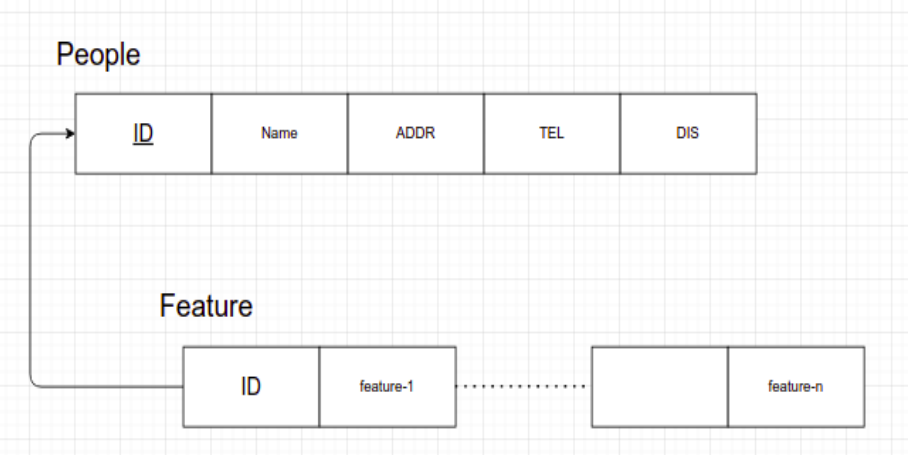


Figure 6: Database Schema

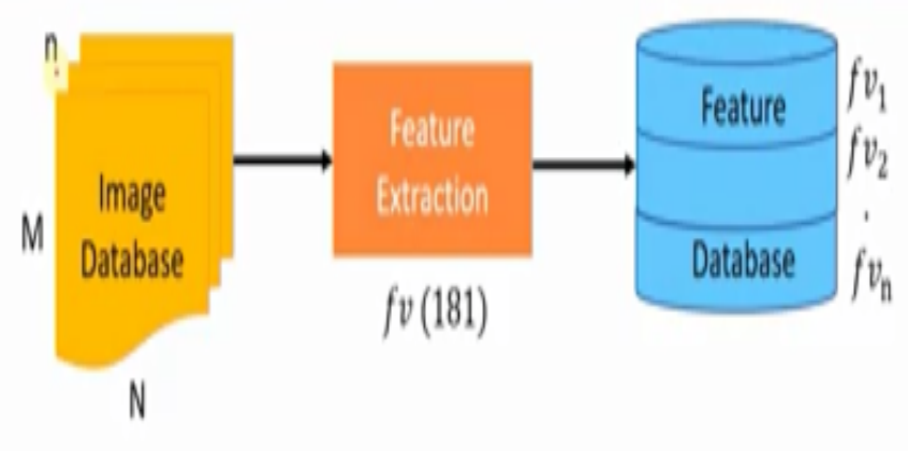


Figure 7: image feature exract diagram

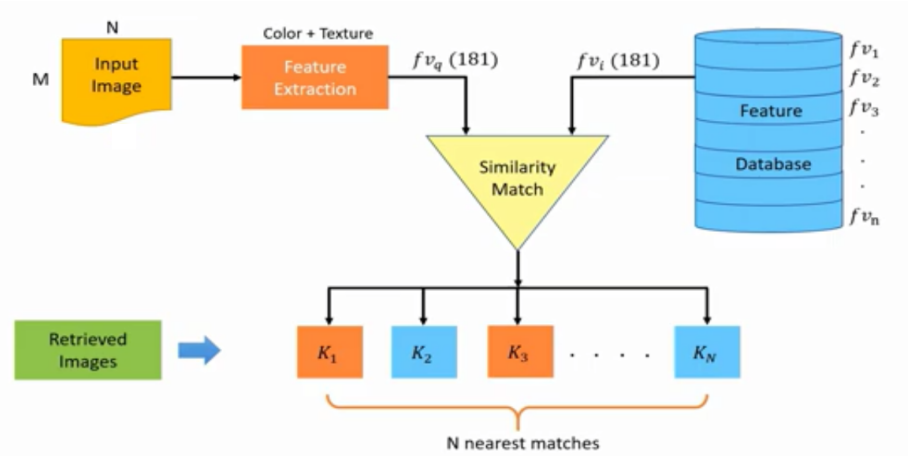


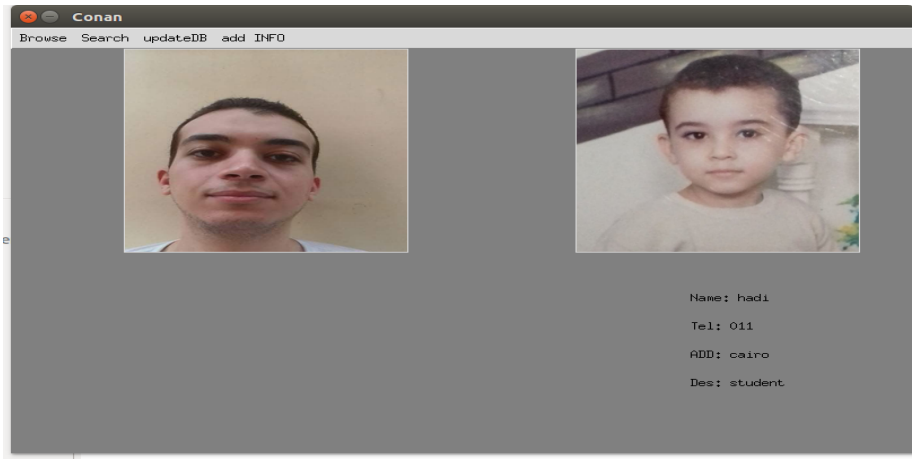
Figure 8: image query diagram

8 System design

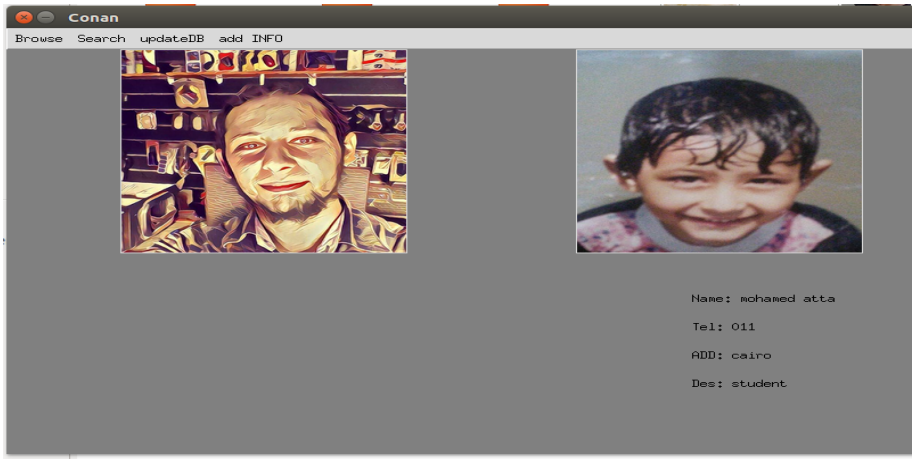
1. **system database**
   in this project we have a database for images which has a CSV file each one store features for all techniques.
2. **user UI**
   this is a GUI the user interact with to make queries.
3. **the processing part**
   this part is responsible to process images according to the selected technique.
4. **operating scenario**
   first we build our database for images for all technique and then select from GUI image search if image user select the technique and the image want to search with. all data from GUI is passed to the processing part to give results and print it in the GUI

9 Testing scenarios and results

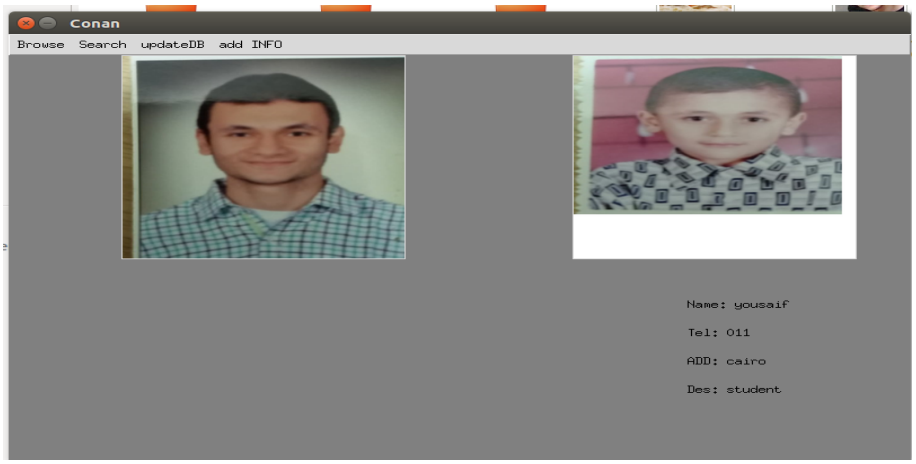
- search for one member of team using his old pic and we get the younger pic that stored in our DB



- search for one member of team using his old pic that has some animation as noise and we get the younger pic that stored in our DB

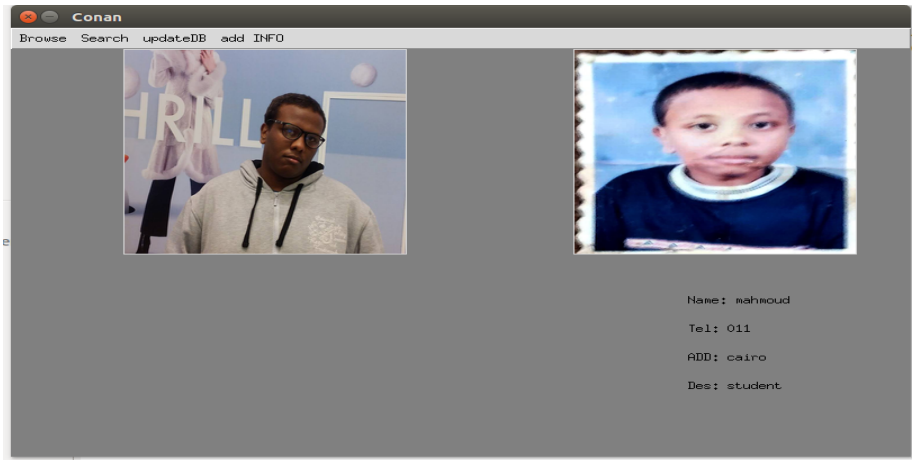


- search for one member of team using his old pic that scanned from mobile and we get the younger pic that stored in our DB

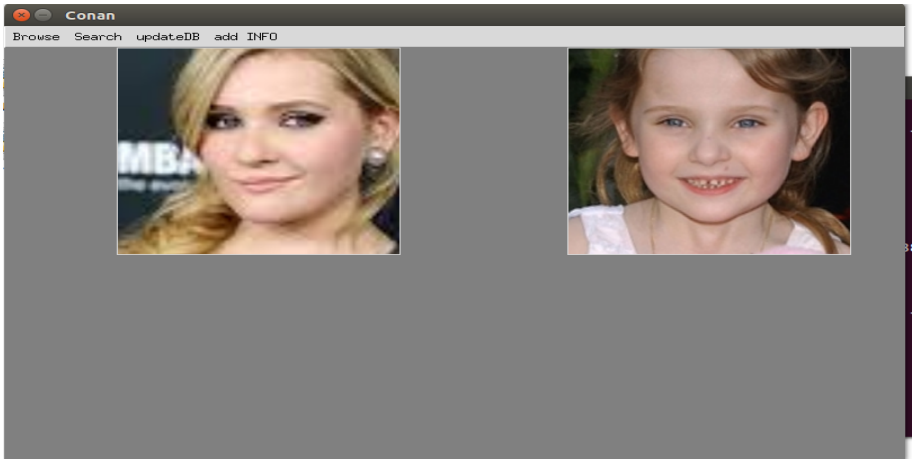


- search for one member of team using his old pic that scanned using digital scanner and we get the younger pic that stored in our DB

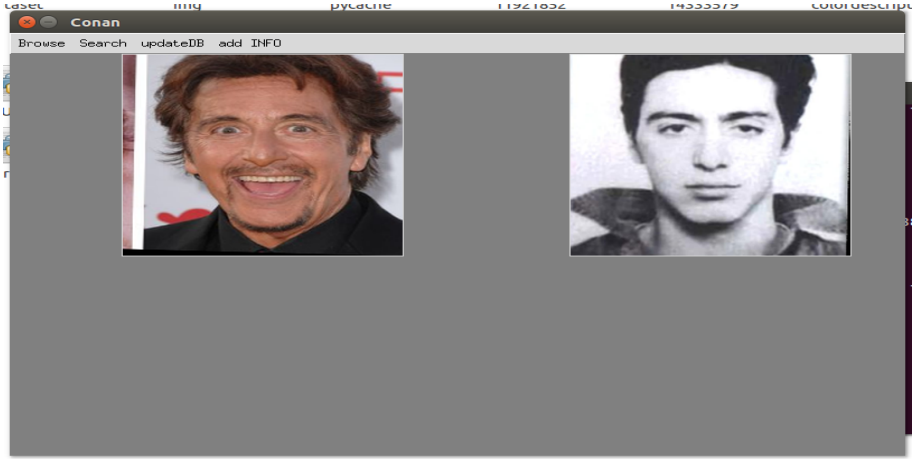
- search for one member of team using his old pic that taking by digital camera and we get the younger pic that stored in our DB



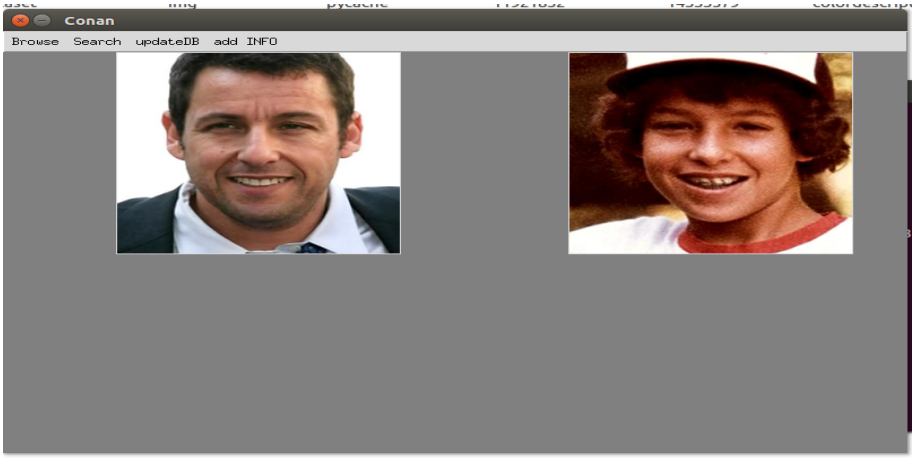
- search for an actress using her old pic and we get the younger pic that stored in our DB



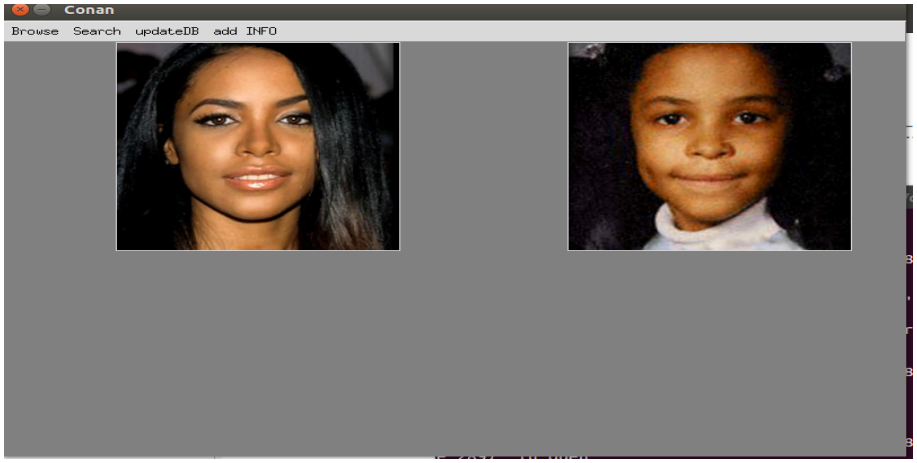
- search for an actor using his old pic and we get the younger pic that stored in our DB even if it is black and white



- search for an actor using his old pic and we get the younger pic that stored in our DB

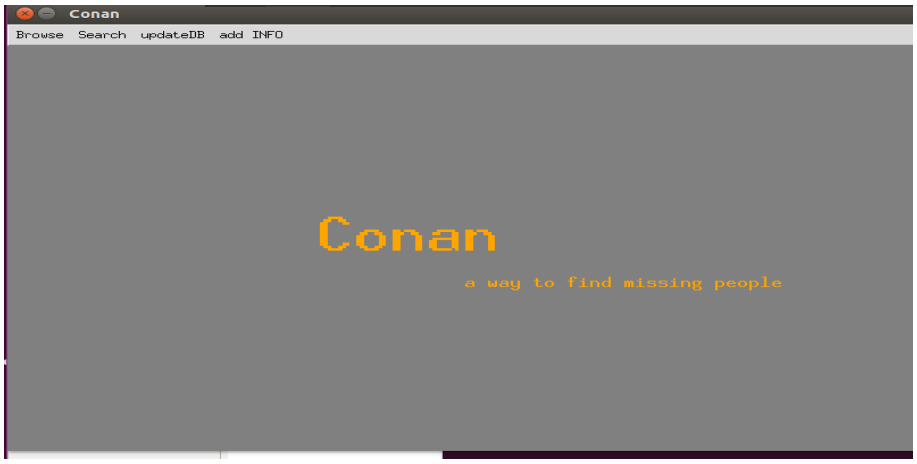


- search for an actress using her old pic and we get the younger pic that stored in our DB

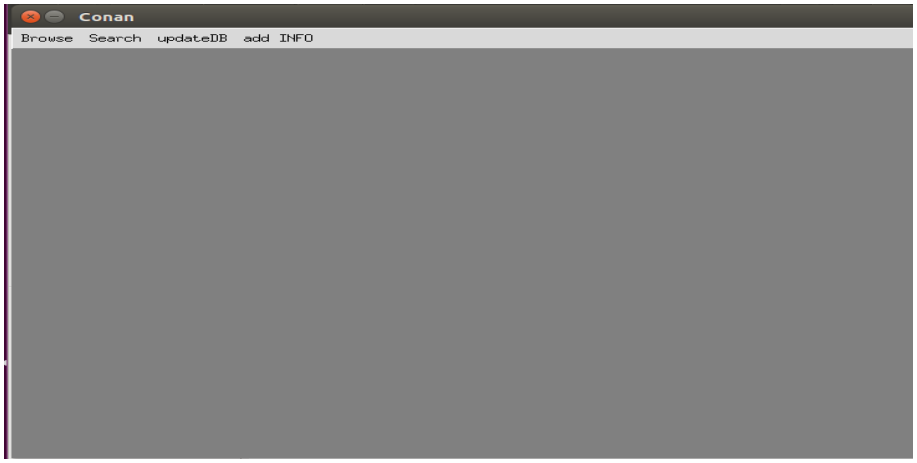


10 End user guide

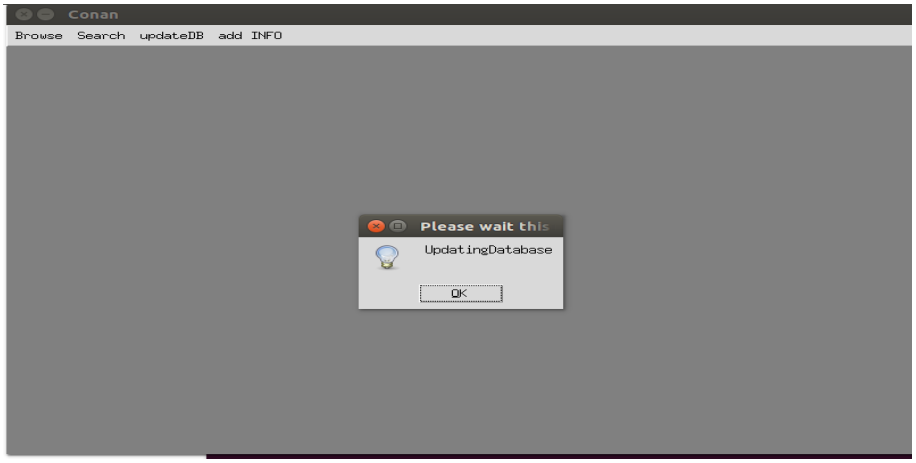
1. This is the primitive user interface.



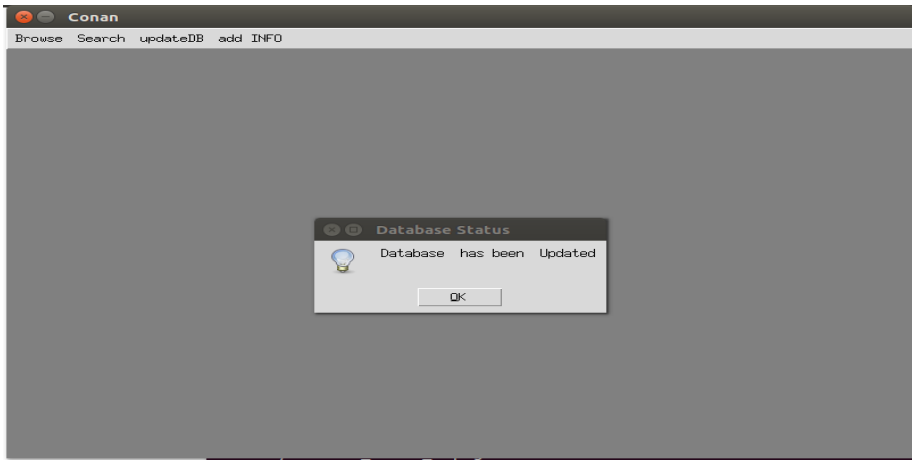
2. before to go in query we need to build database first so go from updateDB



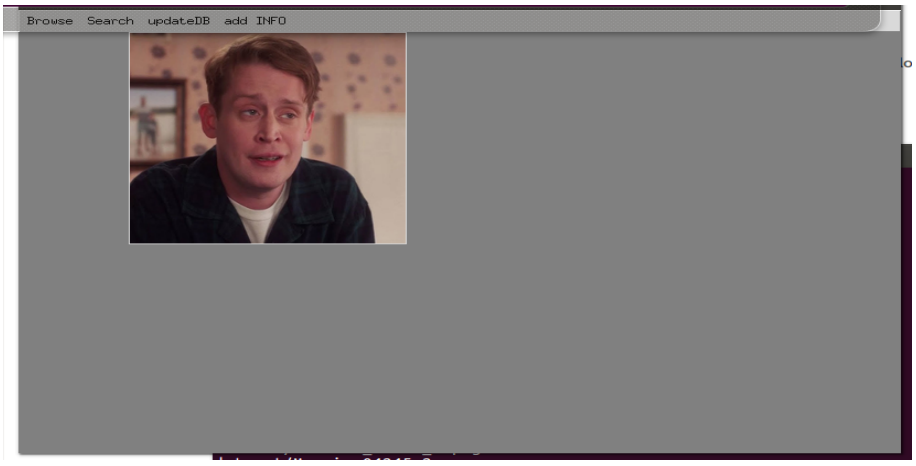
3. It may take a time and give you alert message for waiting.



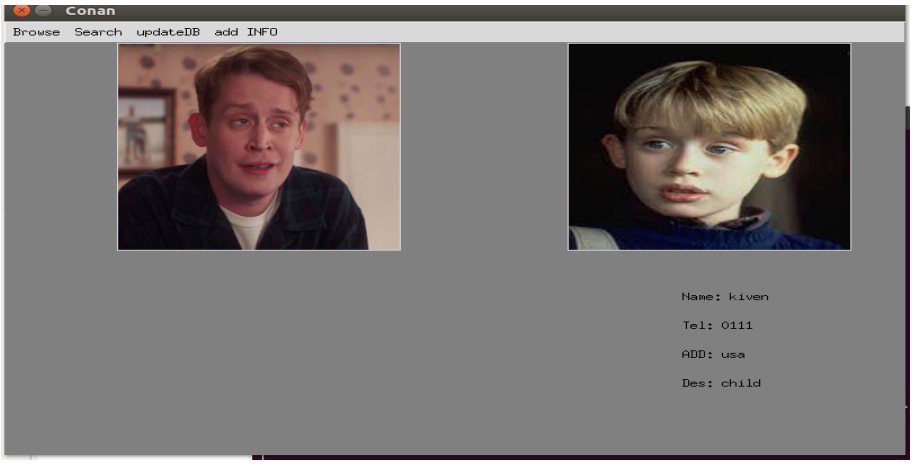
4. When the database is finished updating, a message Database Status will appear.



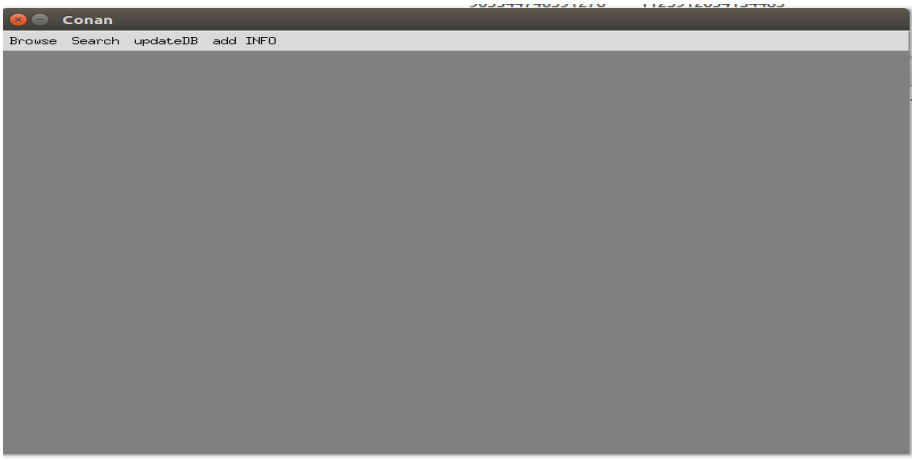
5. now we can search for any image we want From Browse choose Image ex Image.



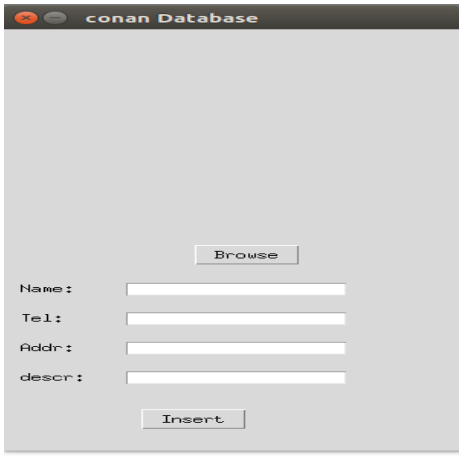
6. to get the result Click on search button and the result will appear in the area for displaying results, and when you click at any result image it will be standalone

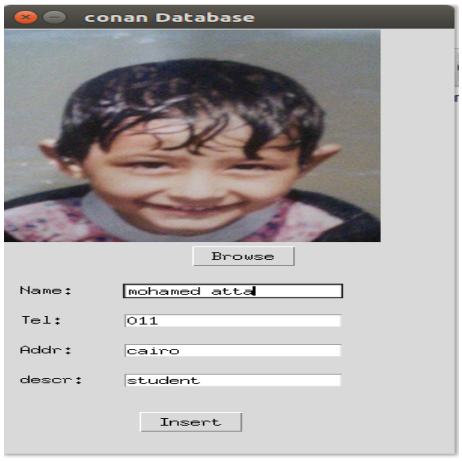


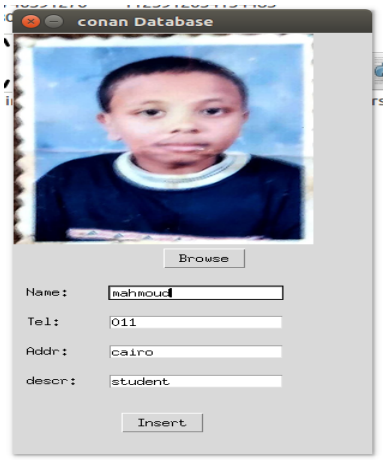
7. to enter information to image click to add INFO.

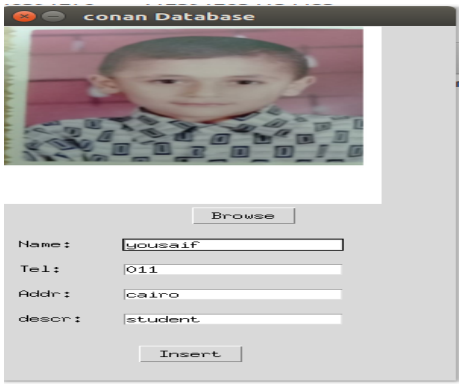


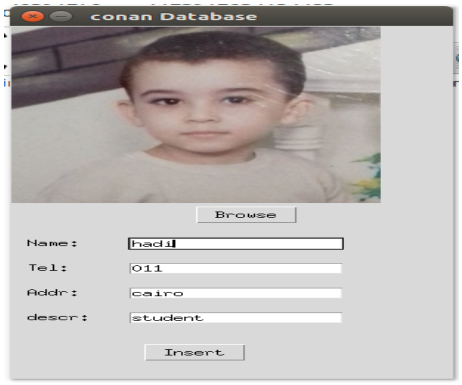
8. another page will appear to enter information in diffrant fields.











9. When finshed entering info , a message Status will appear.

11 Conclusion

Finally, Conan application has been able to recongize missing people even if they have different ages.