Search Gallery

operation manual, 2022

Image Gallery with text descriptions, you can search by keywords/classes, using synonyms and generalizations, building you own expert system with rules and facts for fast and suitable image search.

Results can be collected, sorted, stored and viewed as slides and shared with standard iOS tools

Starting application, you get a launch screen for a while.

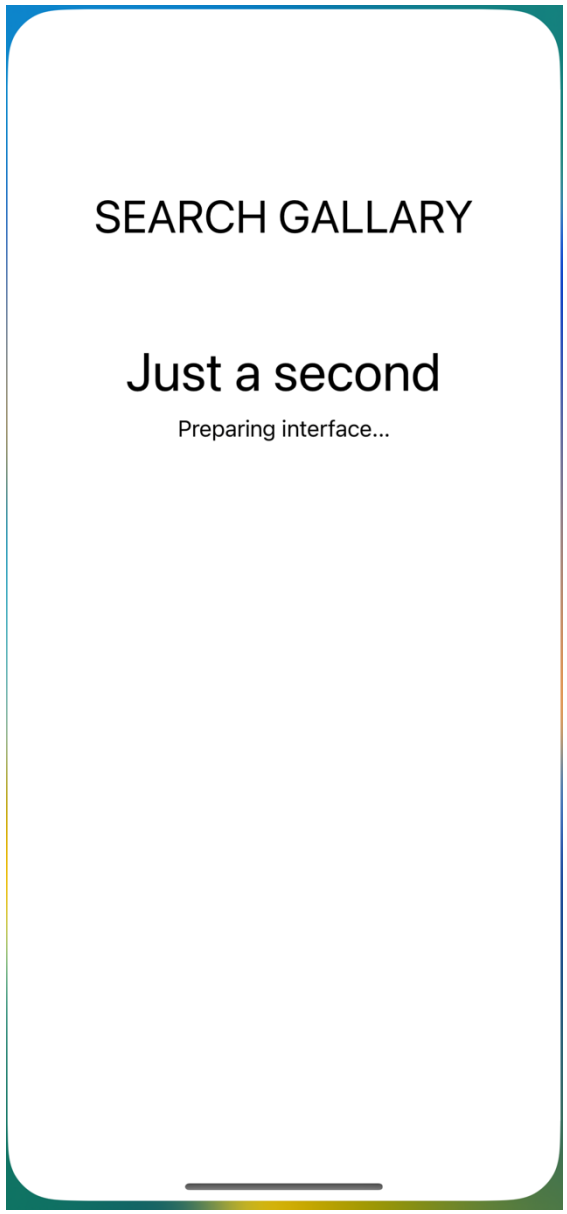
The launch screen will be displayed until the application has read all the image files in the directory. This may take tens of seconds if there are tens of thousands of Images in the gallery.

Privacy notes: no information is collected or sending elsewhere by this app.

This application presented “as is” without any warranty of data loss.

Manual based on test database included

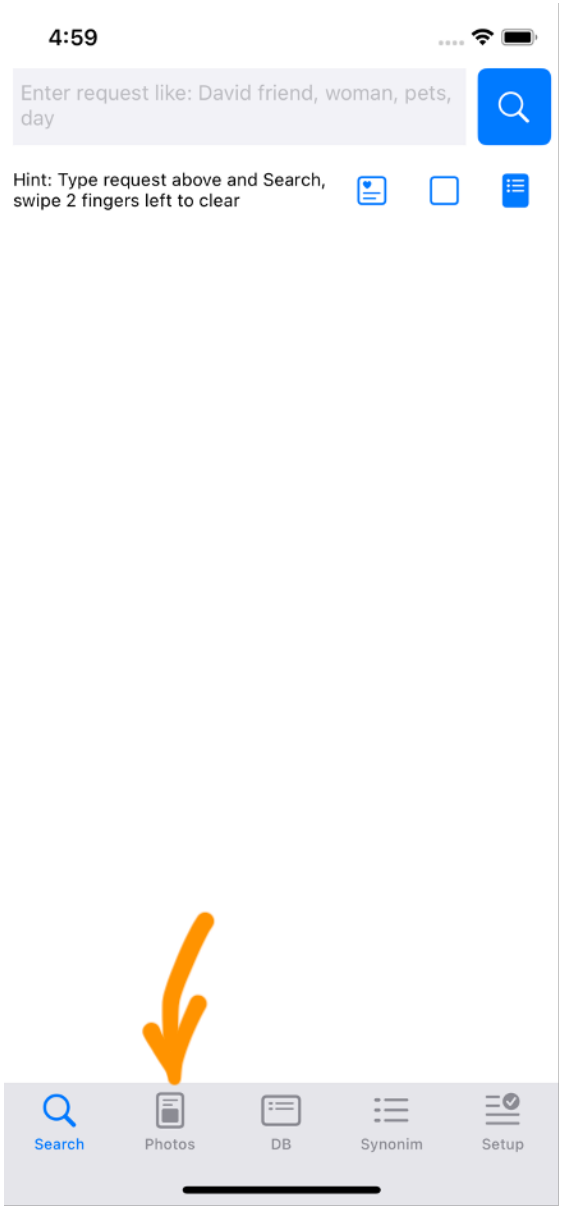
Known problems are presented at the end of this file



Quick start

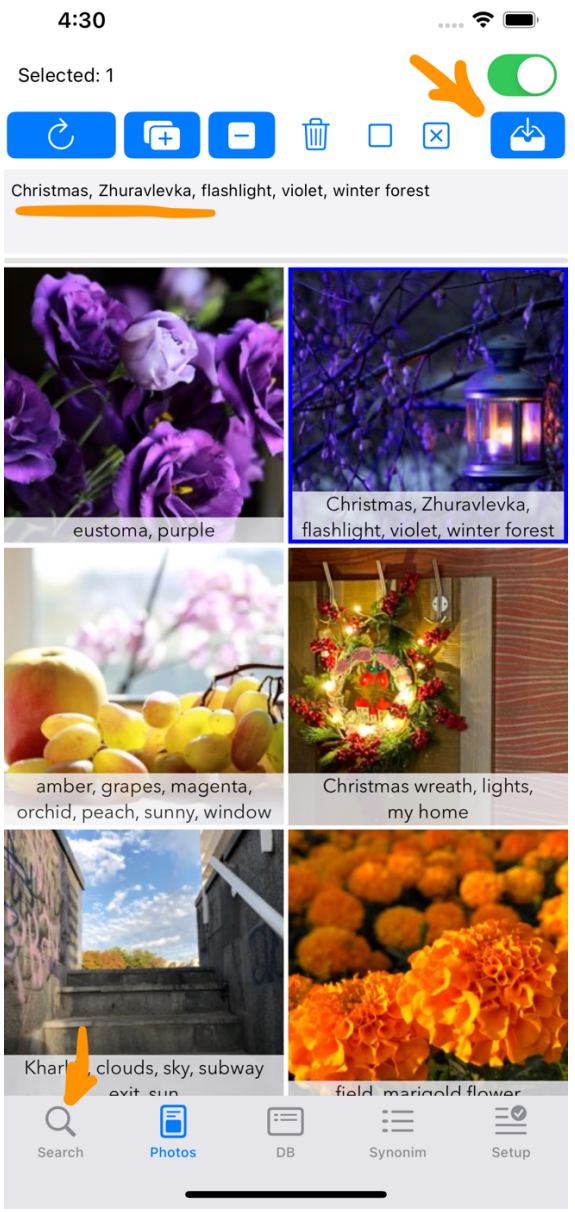
1. Open application
2. Tap **Photos** tab
3. Tap “**+**” icon to browse you phone gallery

⬇️



4. Select pictures you want to add tapping them
5. Tap “**Add**” in up right corner to finish
6. Tap picture to select
7. Add description in the box above, write what you see on the picture
8. Press “**Arrow to box**” button to save written description
9. After adding descriptions to pictures tap “**Search**” tab to back search

⬇️



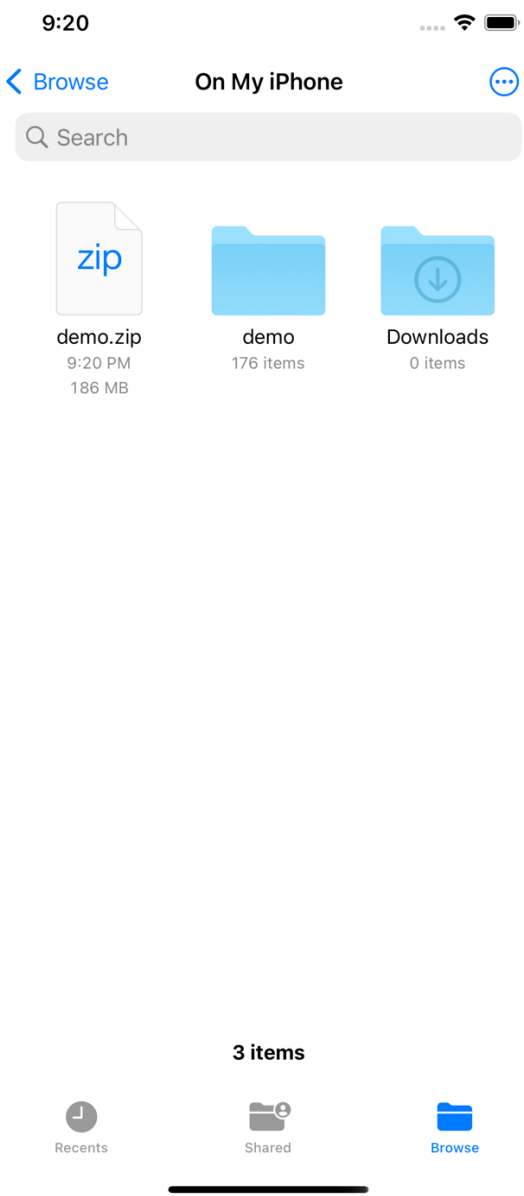
10. Type in the box what you want to find
11. Tap “**Big lens**” button right
12. You got the result!

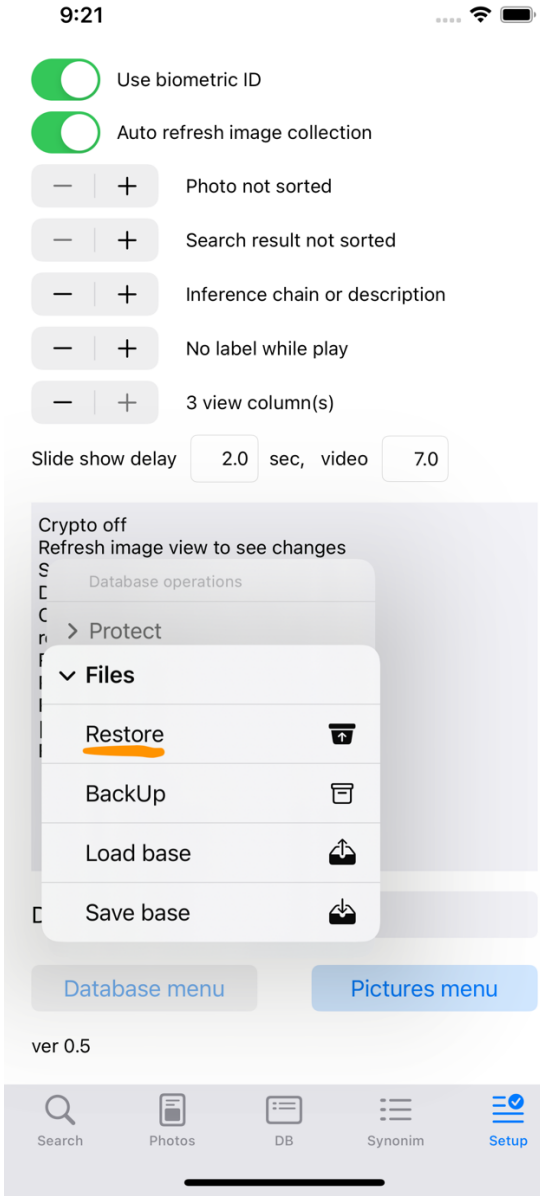
Use demo DB

You can download and experiment with demo DB form link

1. Download demo.zip to **Files** application folder
2. Unzip
3. In **Setup** tab choose **Database menu** then **Files** and **Restore** item

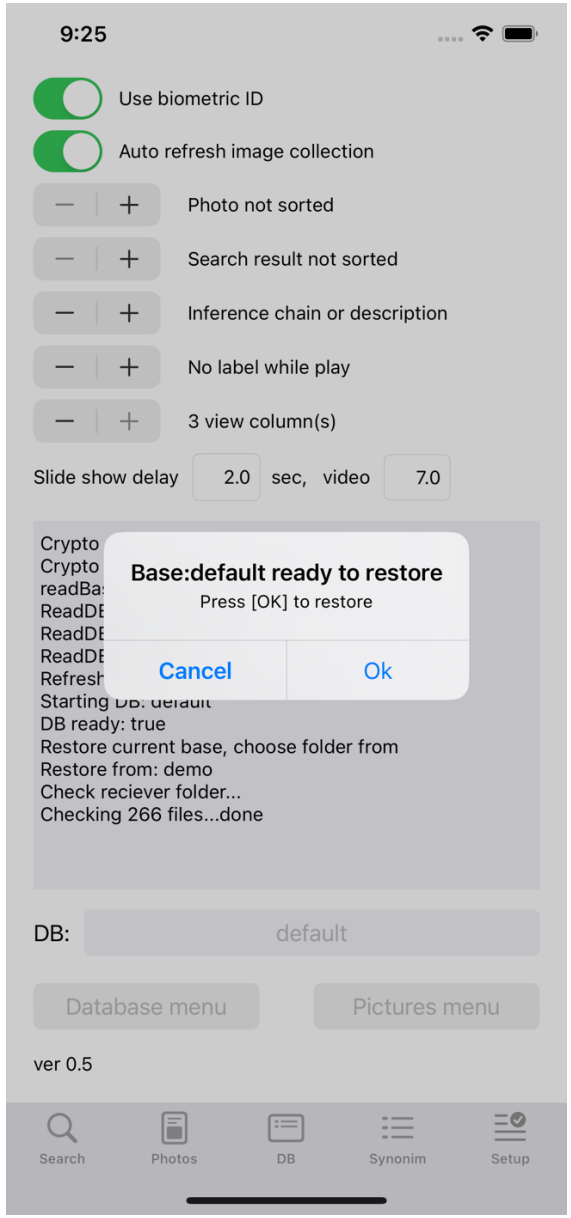
⬇️





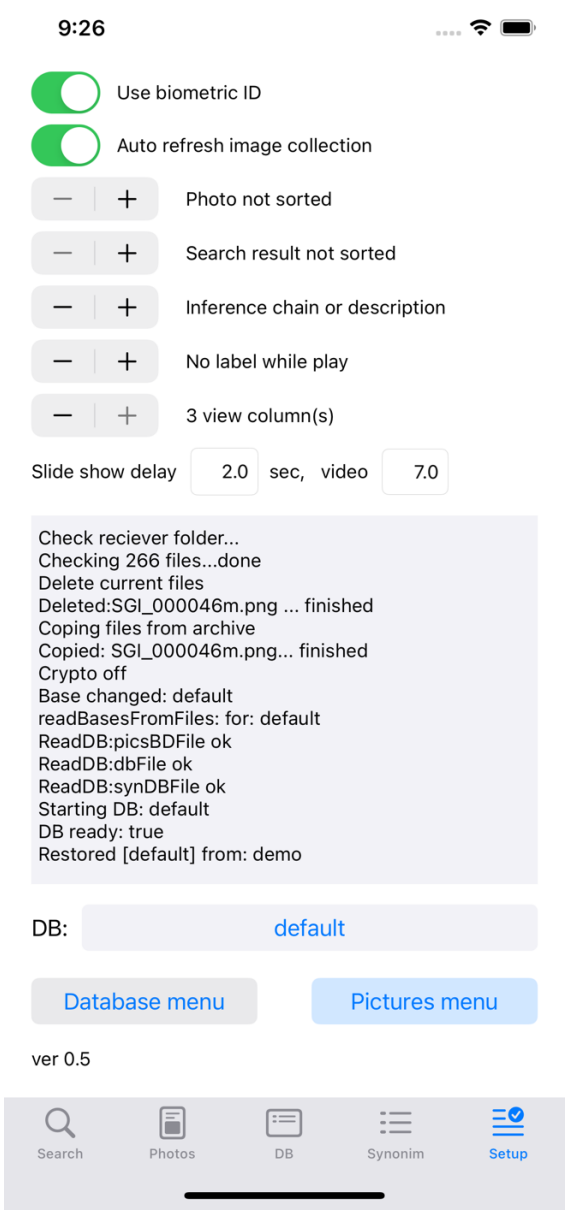
4. Select **demo** folder ant tap **Open**
5. You may asked to begin restoration process or erase old files – tap **Ok**

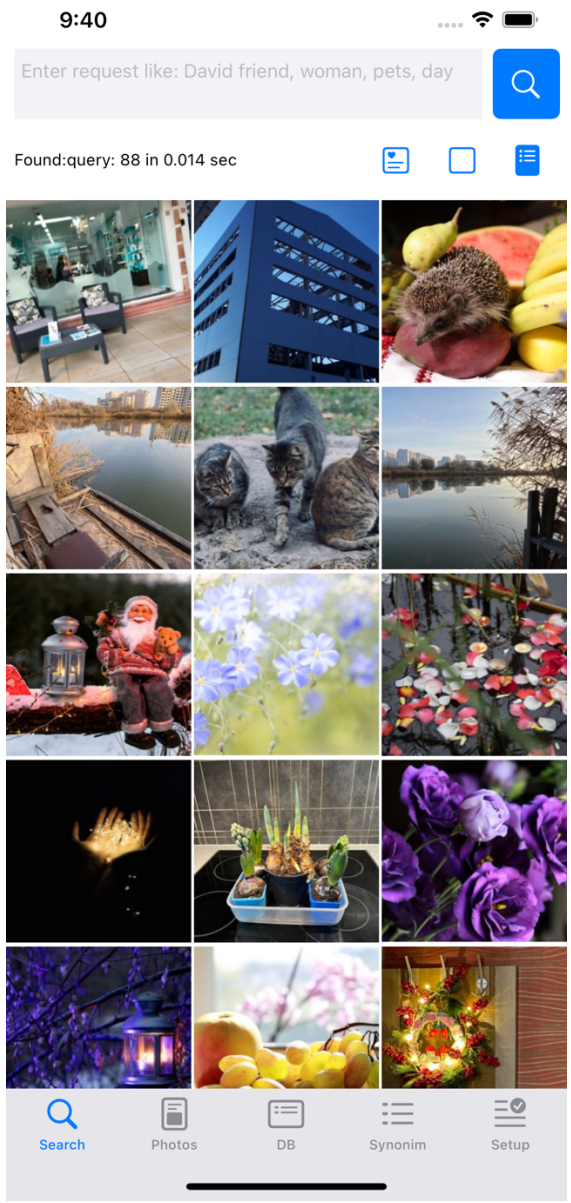
⬇️



6. When restoration completes - you got message **Restored [...] from demo**
7. Tap **Search** tab and **Big lens** button after - you should see something like this(right pic)

Enjoy





How to search

This application can search thru pictures descriptions in two ways:

- context search of input characters
- rule and facts based search defined in database and synonyms, like expert systems

If it's not defined explicitly, all ways applied simultaneously

If sing "!" after word used – it switch off rule based search

Context search

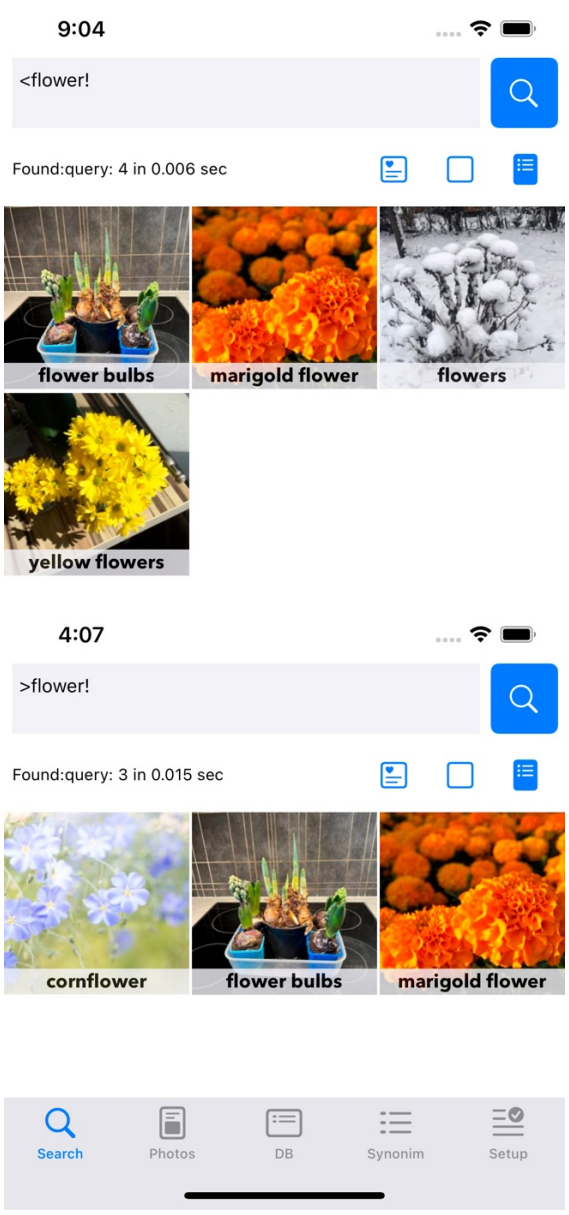
Very simple and use 3 operators:

< (left angle bracket) - input characters should be from the beginning of the word

> (right angle bracket) - input characters should be at the end of word

. (dot) - input characters can be everywhere in the word

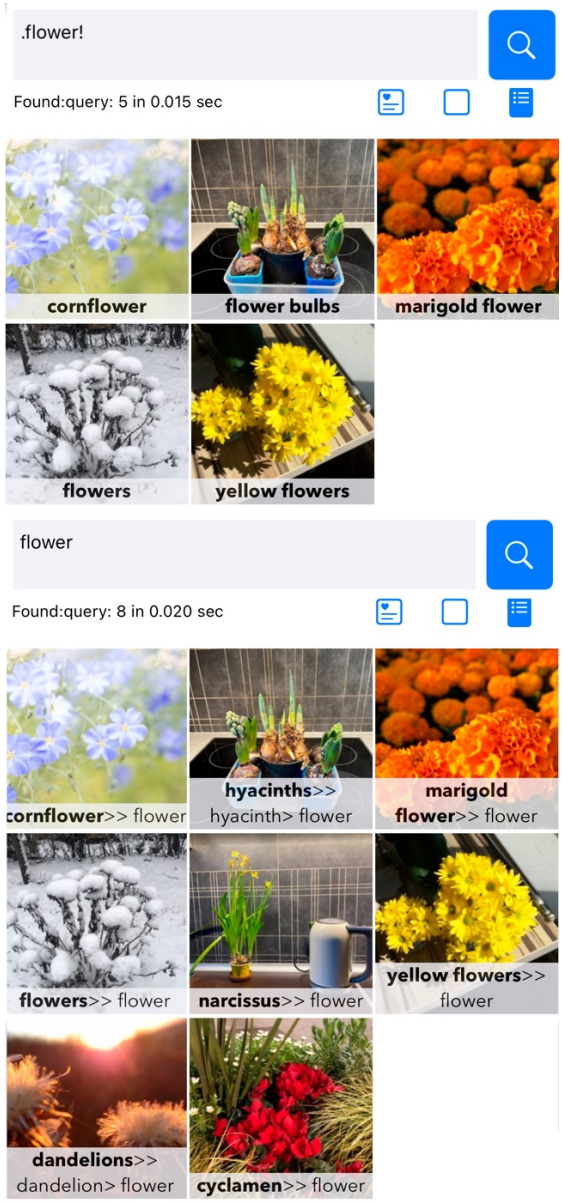
Lets look the difference of using context search "flower" from beginning, at the end and anywhere



Rules based search

If you set the rules, how your “pictures world” will be catalogued, for example, you set, that flowers contains: cornflower, cyclamen, dandelion, hyacinth, marigold flower, narcissus, wild rose, yellow flowers, - application will find that fact in the descriptions of all picture you have in the base

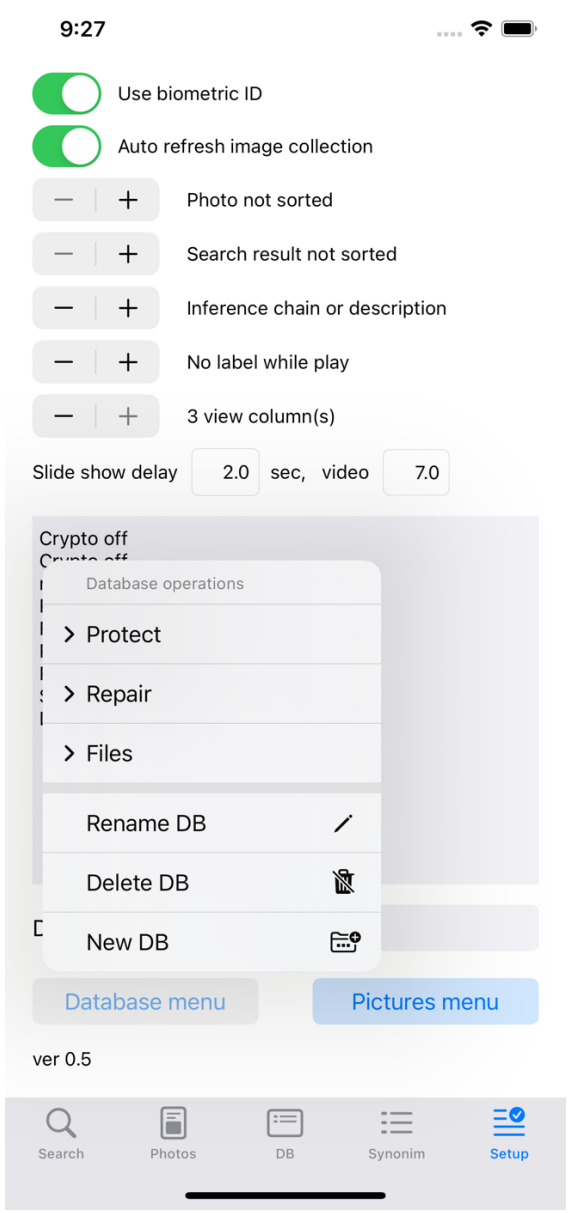
Let us see the difference between context search word “flower” everywhere in the phrase and rule “flower” that found additional pictures with narcissus, dandelion, cyclamen

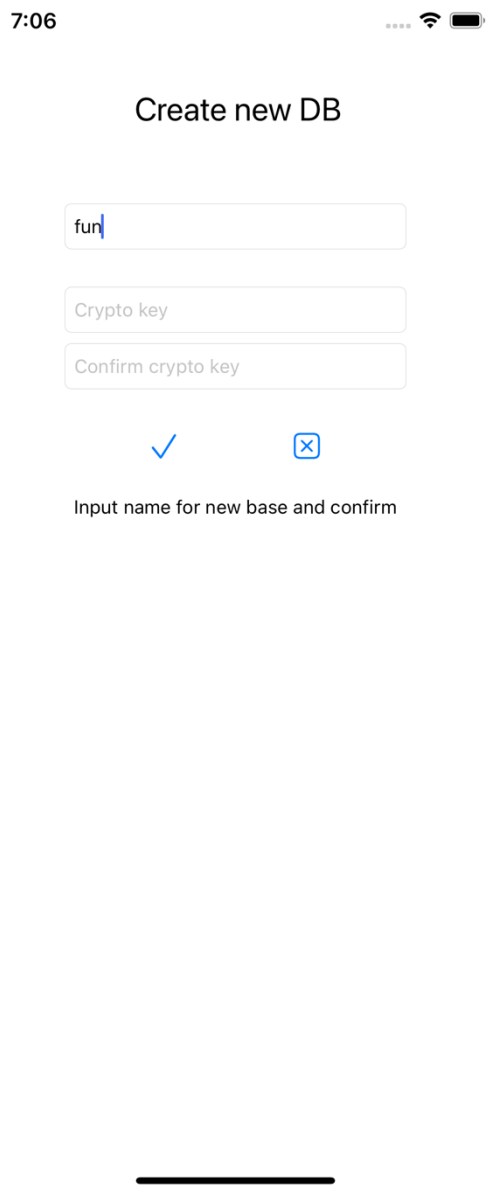


How to protect your pictures and movies?
There are two ways to protect your data:

1. Go to Setup tab, press Database menu and select New DB, just enter desired DB name and cryptokey with conformation check, which will be used for Apple CryptoKit AES algorithm. Every image, GIF or movie you will add to this base will be immediately encrypted without any temporary files, etc. Also, no unprotected duplicates will be generated while you are browsing protected base.
2. If you already have a base, you can simply go to the Protect sub menu and select Encrypt base. Just wait some time for all your data became protected. Encrypted files just written over your original images make impossible attempts to restore originals

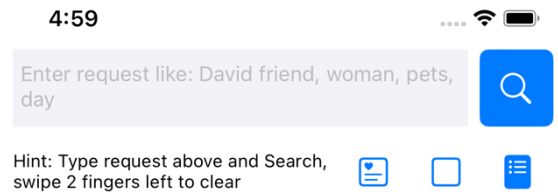
Very recommended to store cryptokeys in a safe place or use iOS password valet (save as login (db name) and password for a dummy website like “lala.com”, “www.site”). We never collect your data and have no algorithm for password restoration





All APPLICATION DESCRIPTION

Search tab opens immediately



In the field above, you can enter a search query of tags (words, phrases of two or more words), separated by a comma.

Below is the search button, hint and interface switch button (left arrow)

At the button there are tabs for switching between:

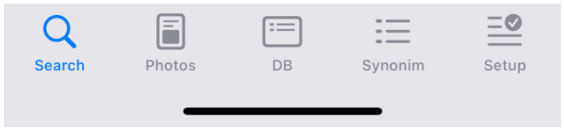
Search – here we are

Pictures - adding pictures to the gallery and picture descriptions

DB - adding new classes of image descriptions to the base

Synonyms - synonyms database operations

Setup - settings for app



First menu button on Search page:

Catalog (**folder**) – all tags that are in the photo database are displayed

Clear edit bar (**trash** can) - clear input request

Clear selected pictures (**x** in a box)

Deselect all pictures

Share what you find - files can be sent by mail or via instant messengers, saved in files

Application supports simultaneously two image collection:

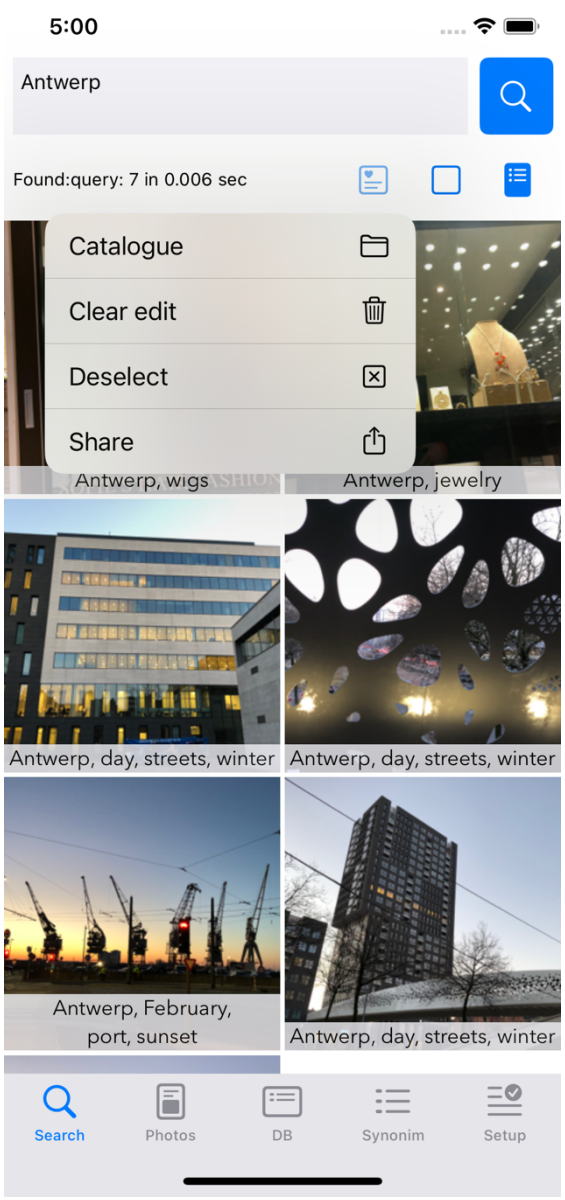
- Current query
- All – for collecting images from several queries, adding them

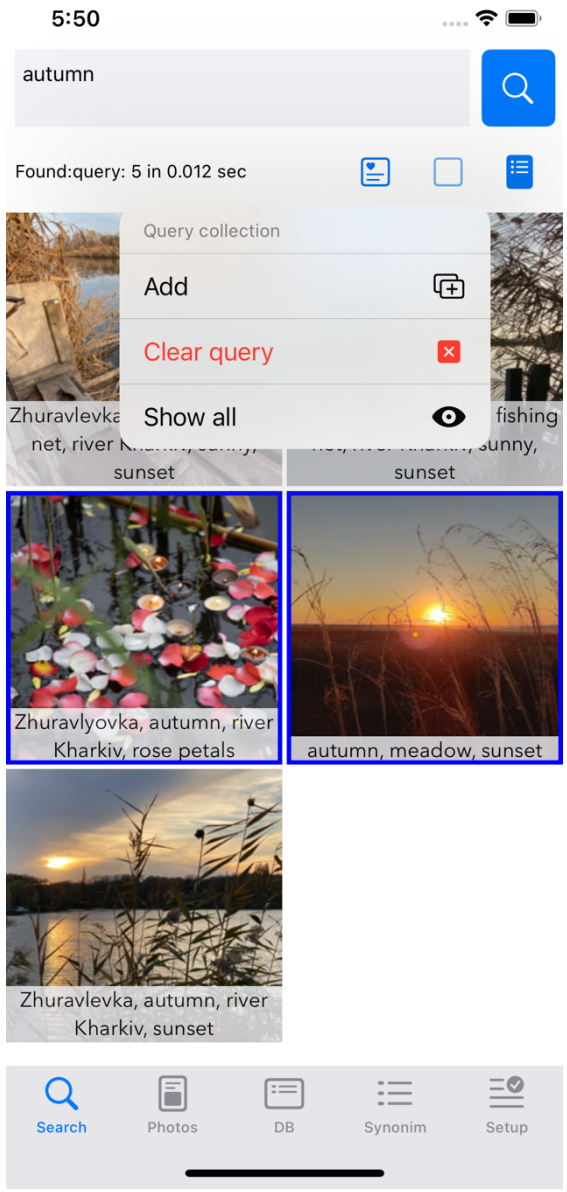
Second menu button on Search page for current **Query** collection:

Add selectes images from current query to **All**(common) collection then switch to All collection

Clear query – clear results of current query

Show All – switch view to **All** collection





You can join results of different queries in **All** collection

Second menu button on Search page for **All** collection:

Undo last – undo last changes for All collection(add delete)

Del selected – delete selected images from collection

Show Query – switch to **Query** collection view

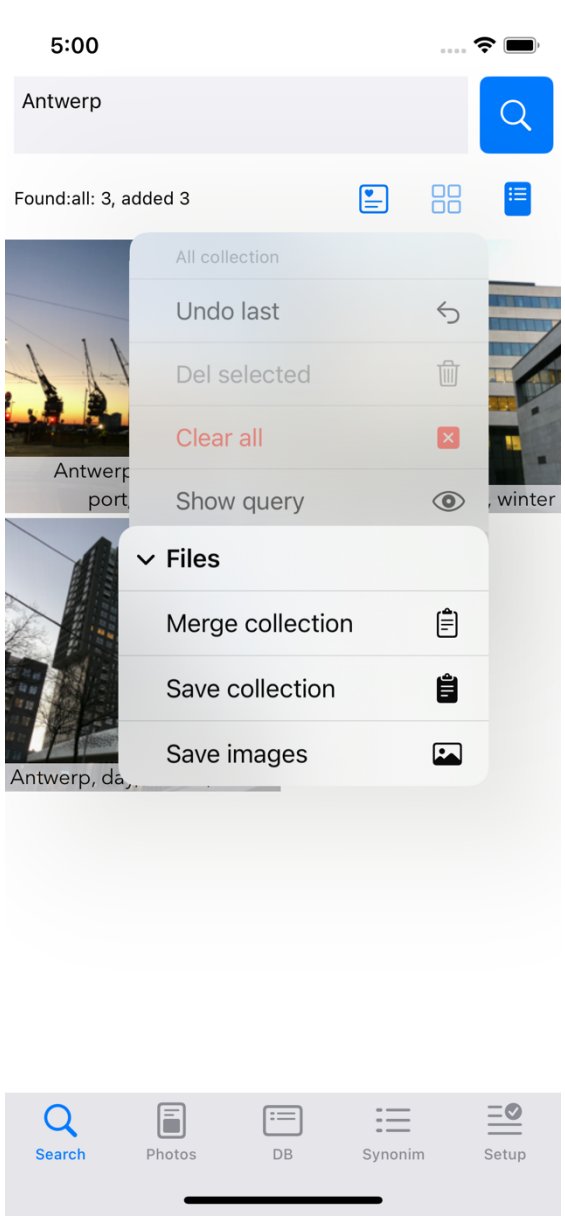
Files submenu:

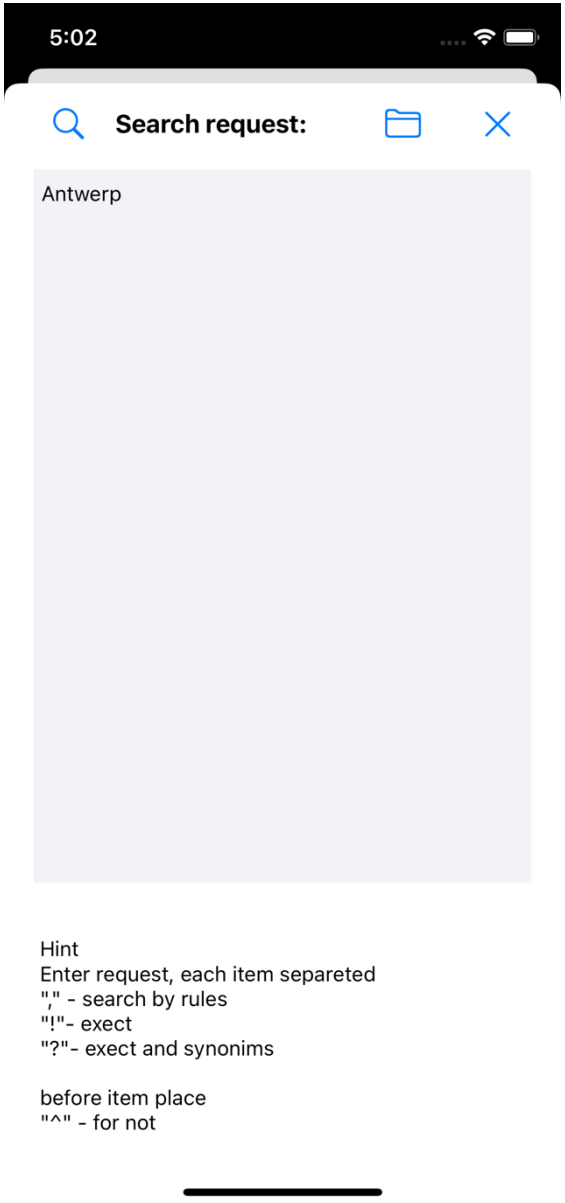
Merge collection – merge saved list of references from file to current collection, same references not merged

Save collection – save list of references for collected images to file

Save images – share selected images anywhere

Third menu button – is extended query editor, where items Catalog is also accessible for big queries





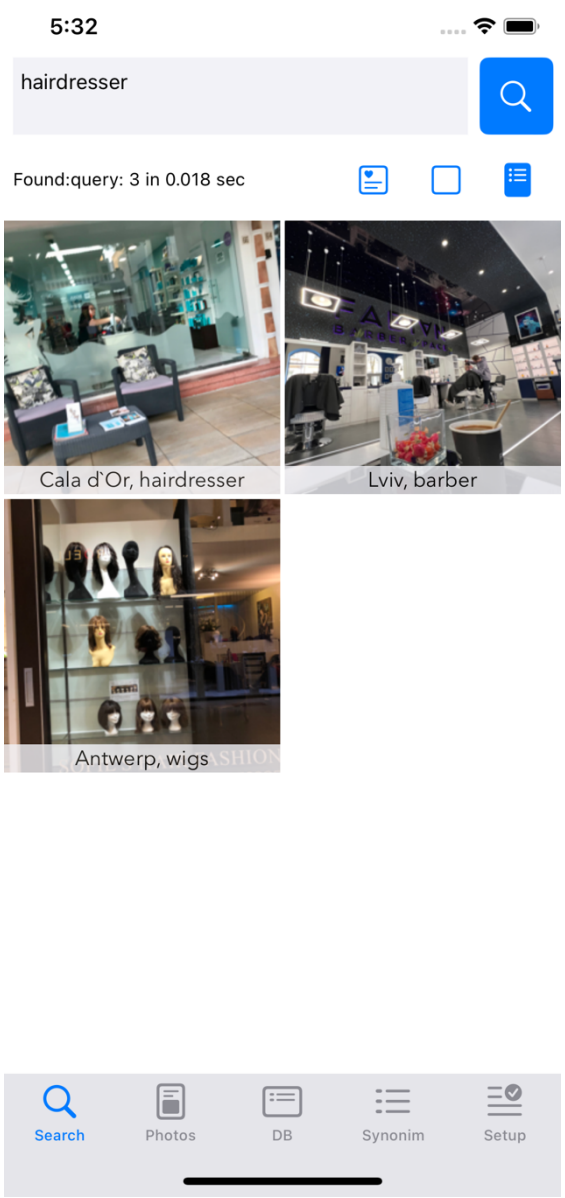
When entered the search query, in our example: "hairdresser", press the "Search" button and get search result as thumbnails of the selected images with captions, which match the entered query

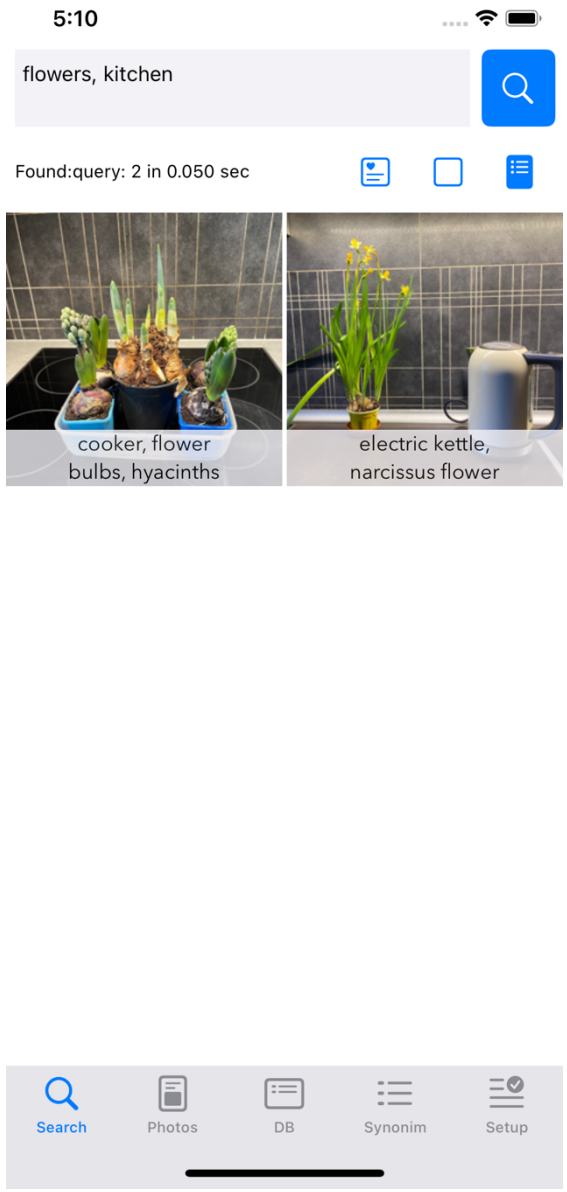
The total number of found images will appear in the hint line

Search time VERY depends on rules and facts complexity and number of stored images, progress is shown while searching

Pictures can be scrolled, long tap on collection image - it will be shown in maximum size

Tags entered with coma should much all in shown images





Maximum/zoom image view

Selected image will appear in full screen with buttons:

Close (**x**) - close the window

Share (**square with arrow**) - share a picture with other applications

With gestures, you can:

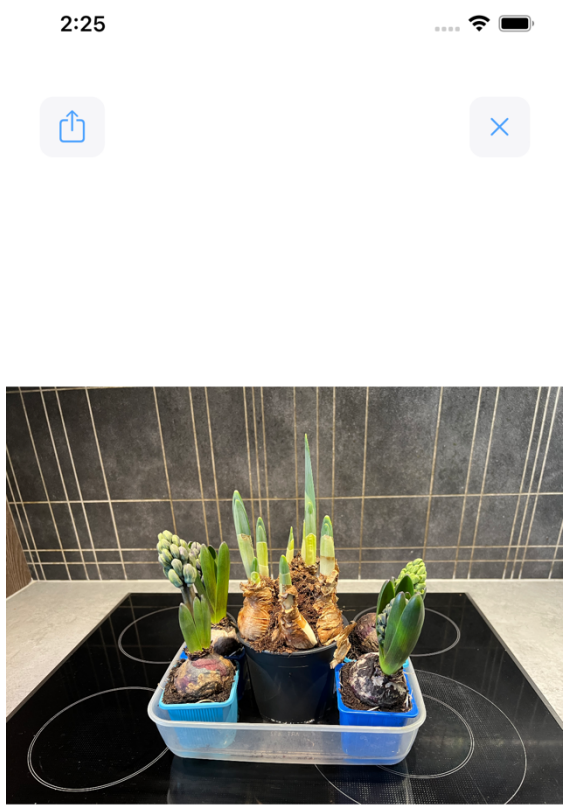
Touch with one finger - a slide show will start from all selected pictures at the show interval specified in the settings as demo. **Touch again** in demo mode - stop demo

Swipe right/left - swipe previous, next picture

Zoom in/ Zoom out – Zoom image in detail with two fingers

Below image there is a full description of the image.

Description can be not to show in settings



Zoom in/ Zoom out – Zoom image in detail allowed with gesture 2 fingers

Maximum zoom is 5 times

Clicking on the button with a folder picture, a **Catalog** Dictionary of all keywords / tags entered as a description will be displayed with number of their appearance in image descriptions.

They can be clicked, scrolled, when clicked, they are added to the search bar separated by commas

For example, let's choose "winter, Antwerp"

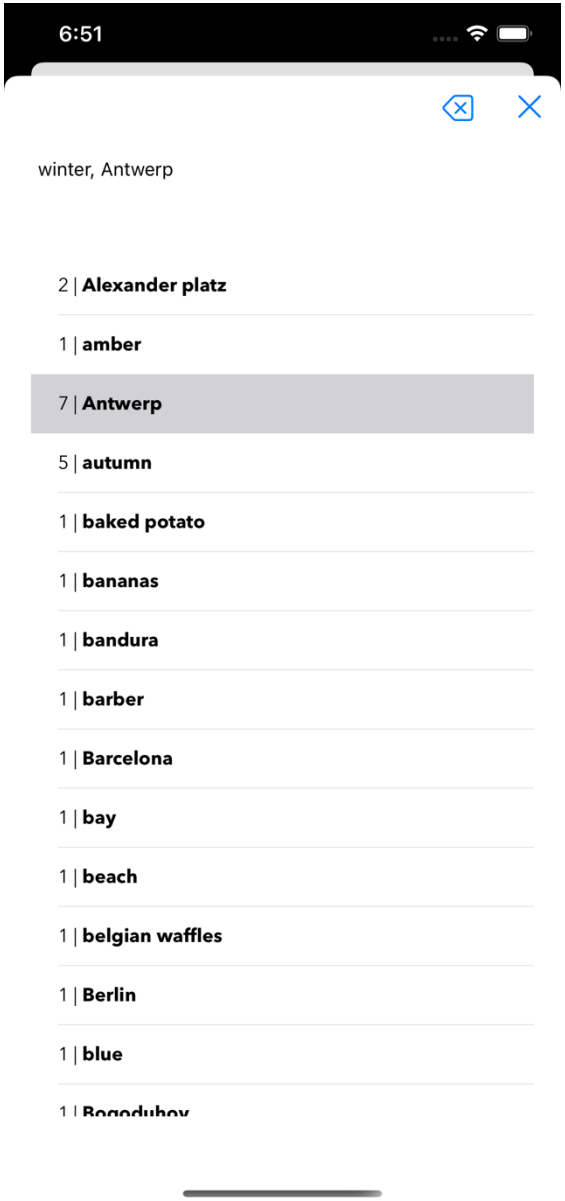
Close the list and return to the search

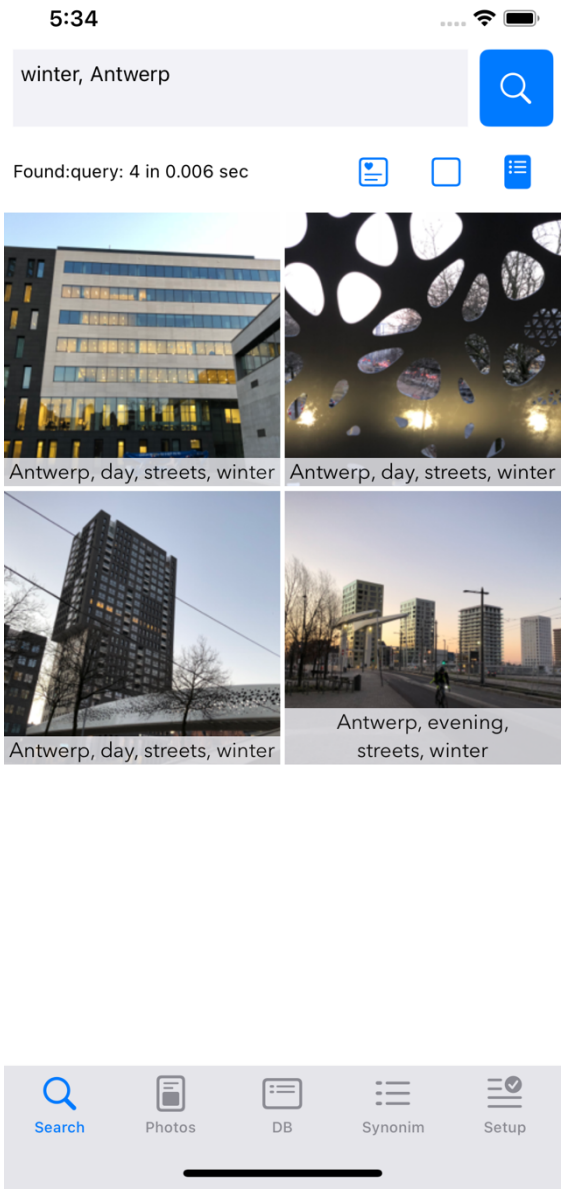
As a result of the search, we get 4 images where there are such tags

Buttons:

Delete item – delete last description item

Close(X) – close this window



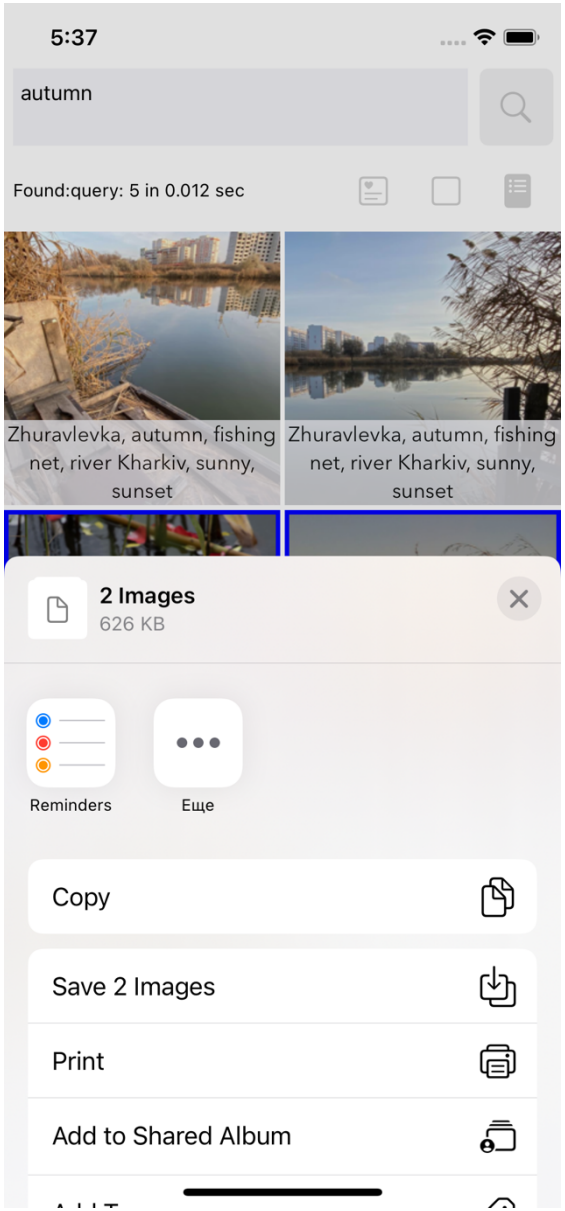


Search results can be shared or saved to files.

To do this, you can select one or more pictures and click the share button.

First, results are saved to telephone file’s folders, then they can be transferred to phone's photo gallery

Transfer to messengers occurs immediately



"**Photo**" tab you can manage the image database (buttons from left to right):

- **update pictures and descriptions**, if “limit to description” is set (in settings), then here you can set a tag (one) by which pictures will be selected without taking into account synonyms and classes here

- **add a picture** (+)
    - in **one picture selecting mode** - this is the addition of new pictures to the database
    - in **multi-picture selection mode** - is a batch adding description items added to all selected pictures

- **delete the picture** (-)
    - in **one picture selecting mode** - this is the deletion of the selected picture
    - in **the multi-picture selection mode -** is a batch deletion description items in the selected pictures

- **clear input field** (basket), you can also swipe it with two fingers to the left

- **image selection mode**:
    - one empty square - selection of only one picture
    - four empty squares - selection of several pictures

- **square with "x"** - deselect pictures

- **box with an arrow inside -** saving edited description for selected picture (does not work in multi-picture selection mode)

In single picture selection mode - you click on the “+” button, picture selector from the phone gallery appears (screen on the left) to add pictures in the base

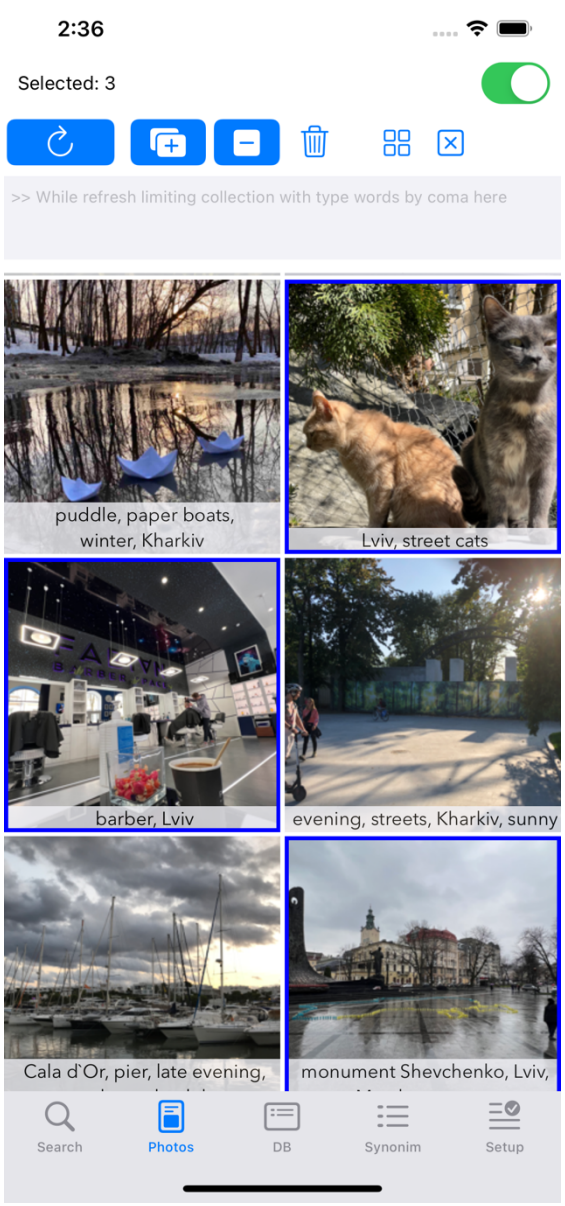
In the multi-picture selection mode, a hint is displayed to use the +/- buttons to add the entered description to the selected pictures (screen on the right)

When multiple images are selected - number of selected images is entered in the tooltip at the top.

You can cancel the selection by clicking on **box with a cross** on the right (left screen)

Also, in this tab using gestures: **long press** - you can view the picture in full (right screen)

You can do with gestures **Zoom in/ Zoom out** – Zoom image in detail



In the full picture(left screen), using gestures:

- **one tap** - turn off all buttons for easy viewing

- **double tap** - view Exif pictures (right screen)

- by **swiping it to the right / left** you can view the previous / next pictures in order

DB Tab

Editing a classifier (classes and concepts)

Search here is based on concepts:

- **whole: its elements**, like

    "water: river, sea, ocean"

    "river: Thames, Nile, Amazon", etc

- **synonyms**, like:

    "cat, kitty"

    "man, men" (to avoid plural if you like)

You can set an infinite number of such relations, they will be used while searching, for example, you set

Classes

    "**Joe Company: Katya, Pasha, Eva, Lisa, Sergey**"

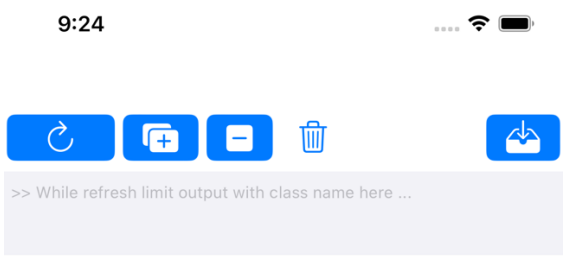
    "**Guys: Pasha, Sergey, Ivan, Kostya**"

    "**Girls: Katya, Eva, Lisa, Natasha, Tatyana**"

Synonyms

    "**Girlfriends, Girls**"

And uploaded photos which will be marked with tags, described in these rules and then enter a query: " **Joe Company, Girlfriends**", then photos marked with tags: **Katya, Eva, Liza** will be displayed



Application is provided with demo base, which is presented on screen shot.

You can edit search rule's base in this tab using buttons:

Refresh (circular arrow) - display the current database after changes

Add class(+) – add rule as text "whole: element 1, element 2, element 3, …."

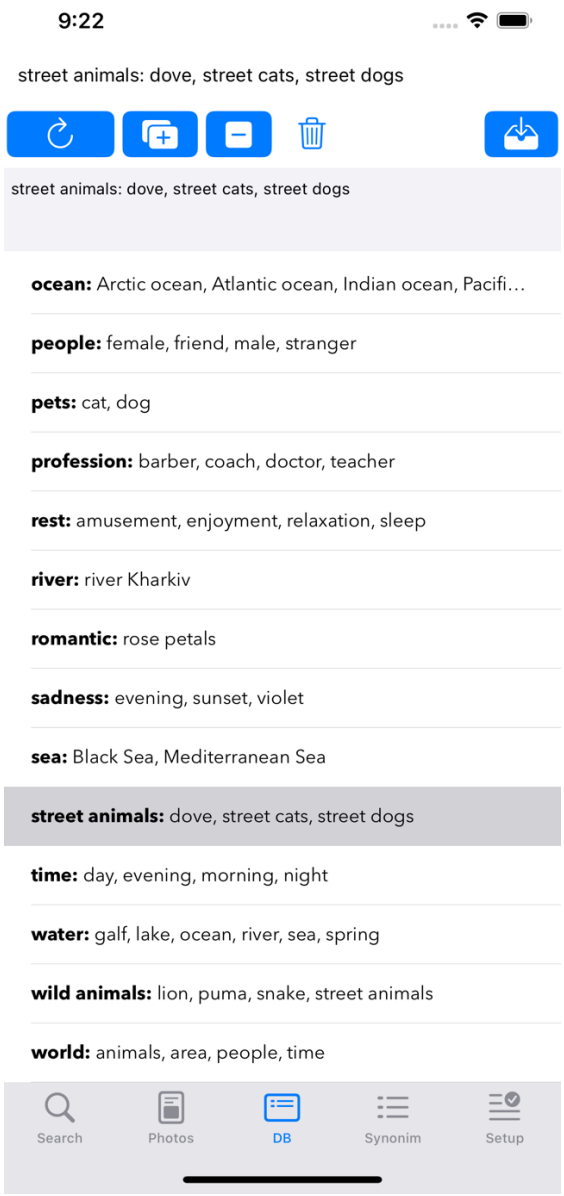
"whole" is separated by a colon, elements are separated by commas, an element can be either one word or several words or other characters, separated by commas

Delete class(-) – the selected rule will be deleted

Clear input field (basket) - clears the input field for convenience

Save (arrow in the box) - saves the edited class

Tap class/rule for selection and editing



Synonyms tab

Here you can add, modify and delete synonym rules, which are separated by commas

One rule can contain any number of words or phrases that you consider synonymous

Everything is based on your idea and convenience.

The controls in **Synonyms tab** are similar **DB Tab**:

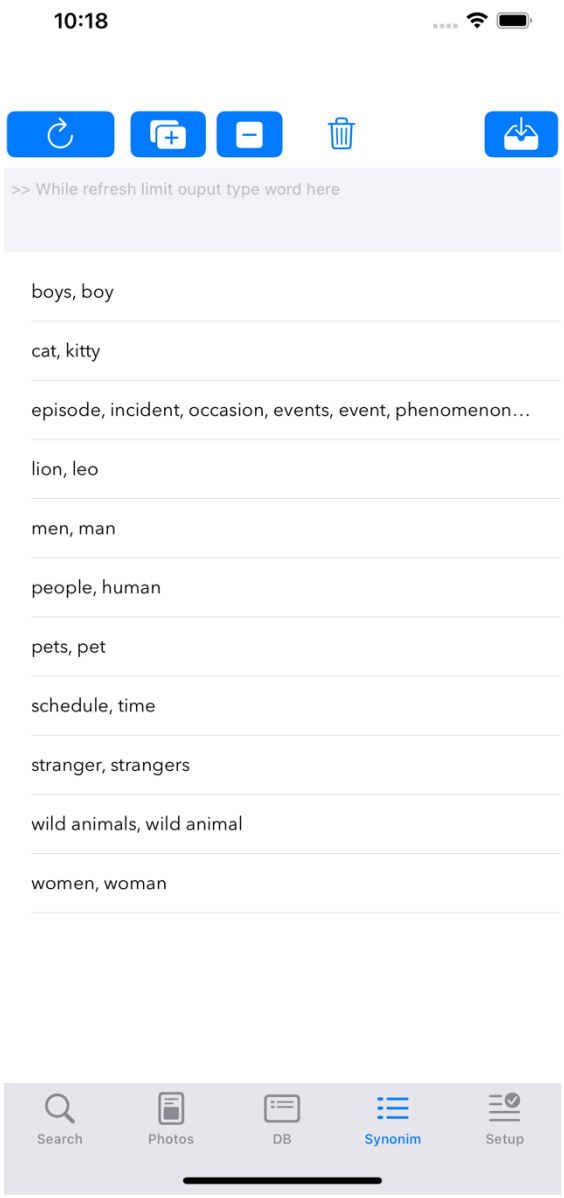
Refresh (circular arrow) - display the current database of synonyms after changes

Add synonyms(+) – add a new synonym rule in the form of the text “synonym 1, synonym 2, synonym 3, ….”. Synonyms are separated by commas, synonyms can be either one word or several words or other text marks separated by commas

Delete synonym rule(-) – the selected rule will be deleted

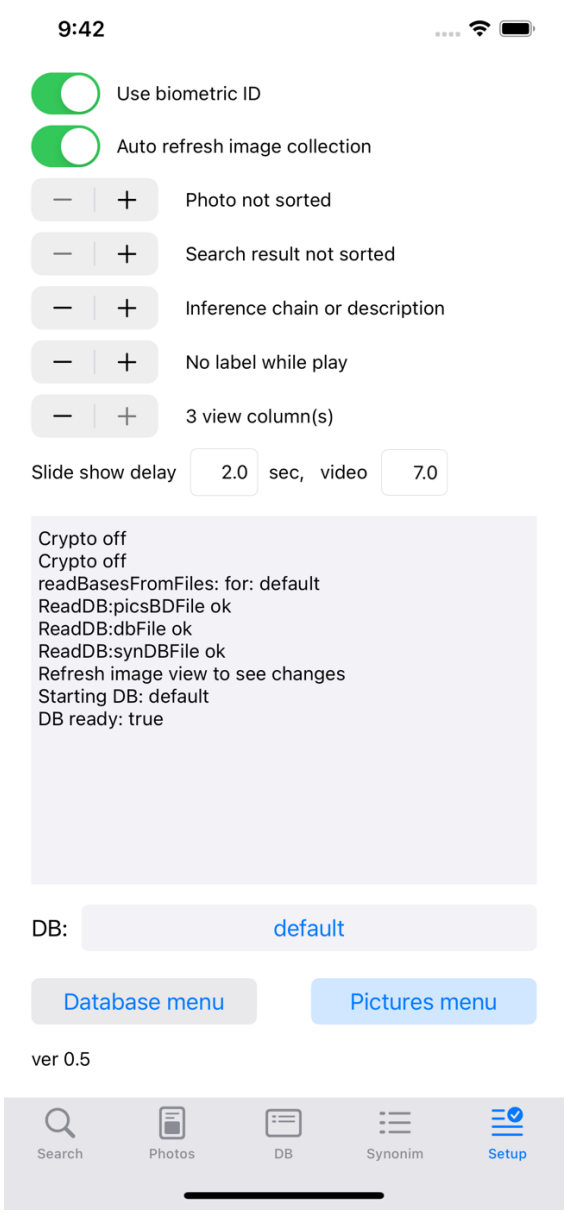
Clear input field (basket) - clears the input field for convenience

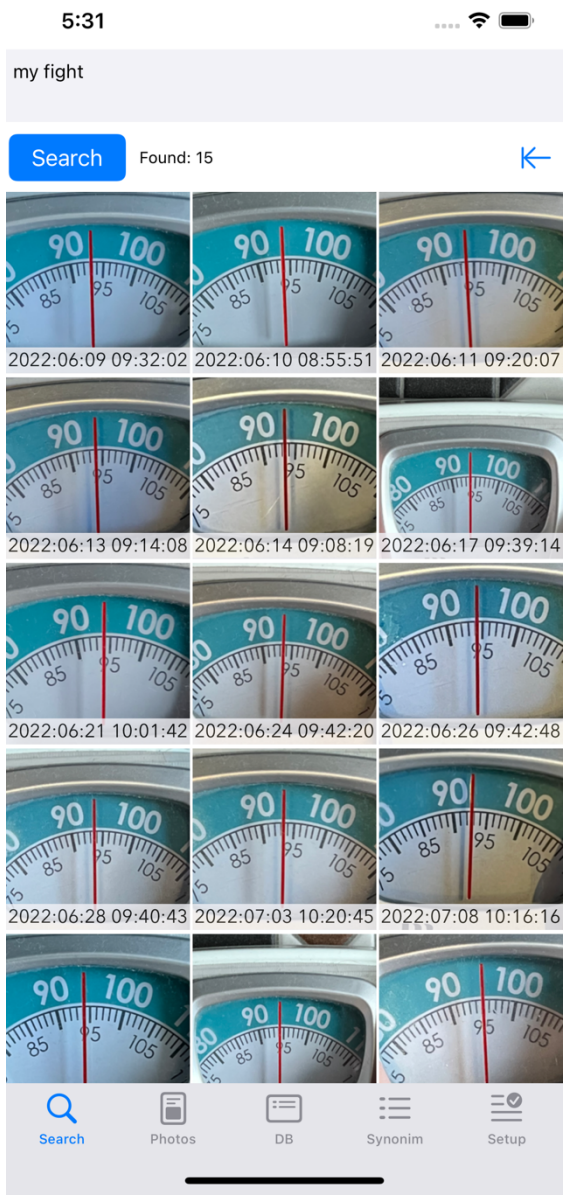
Save (arrow to box) - saves the edited set/rule of synonyms



Setup tab: **Switches**:

- Use FaceID instead current crypto key reenter
- Automatically update views after making changes in picture descriptions, rules, etc
- Sort order for pictures view presentation
- Sort order for search results (right: search result for “my fight” sorted by date showing only creation date)
- Choose what information will be shown on image labels
    - image reference(name of the physical file)
    - creation date
    - picture description
    - their combinations
- Choose when information picture label will be displayed:
    - show always
    - do not show in slide mode
    - never show
- Delay for showing pictures and first interval in sec of the video in slide mode
- Number of columns in image collection – changes Photo and Search views(left: 3 columns view)





Current DB name and switch DB button – pressing you get change DB window

Buttons: Data Base menu

This menu consists of three submenu:

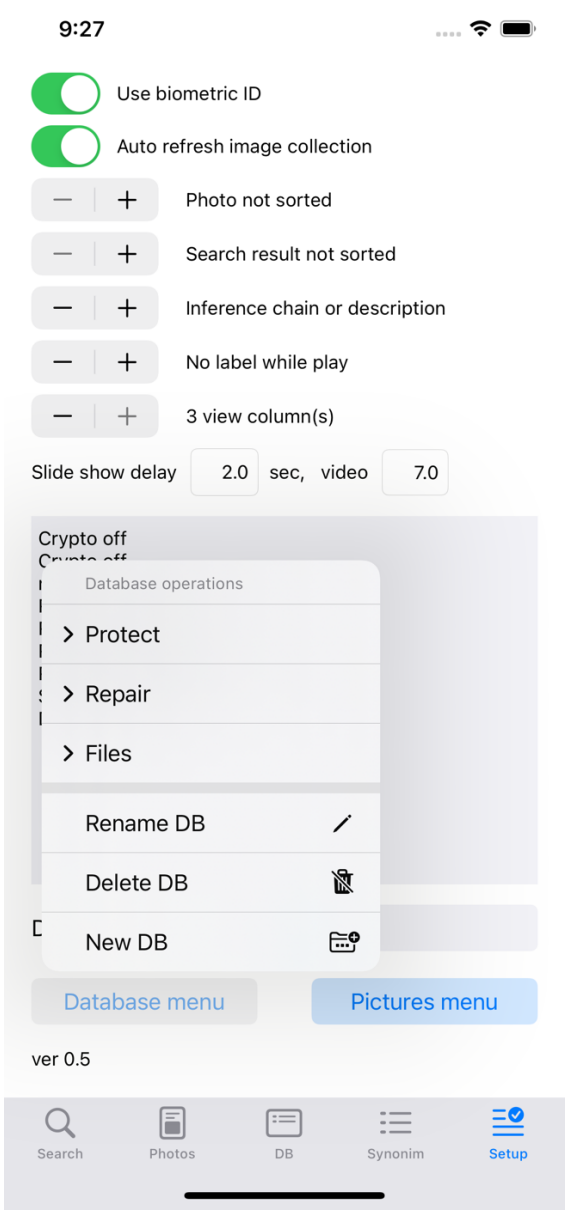
- **Protect** – crypto protection of you base andimages
- **Repair** – some test and image file conversions
- **Files** – the data base files operation<, like export, backup, etc

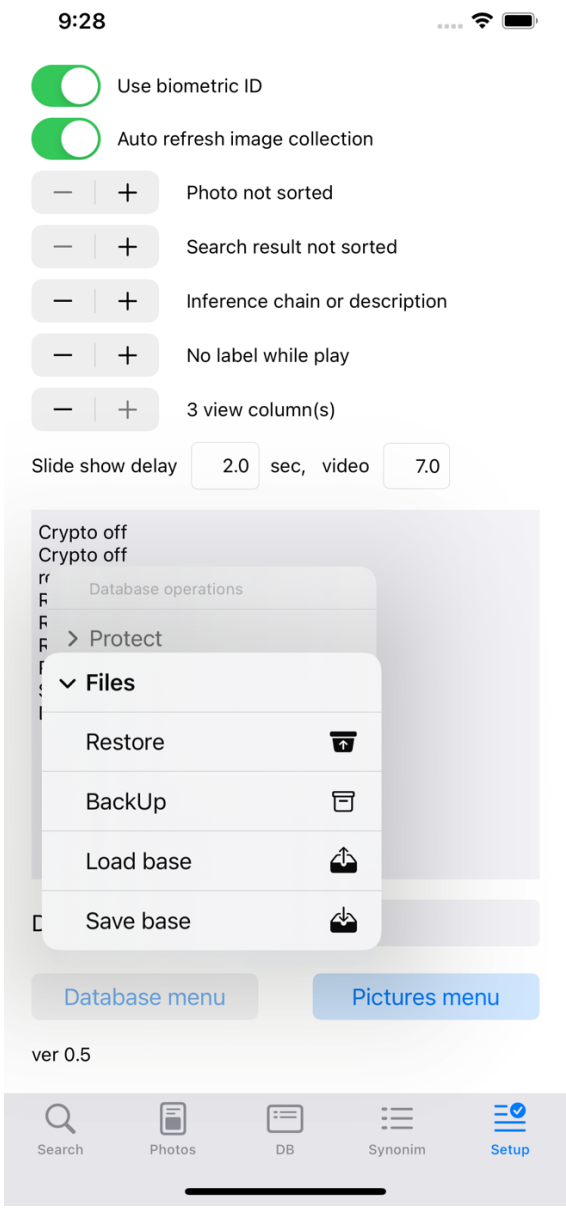
And common used items:

- **New DB** – create new database
- **Delete DB** – delete selected DB
- **Rename DB** – rename DB

File submenu

- **Backup** – full copy of database and all original pictures
- **Restore** – restore previously backuped database
- **Save base** and make them available (transfer a copy to another device) - for observing (next page left screen)
- **Load base** – load backup data base (class, synonyms and pictures)





Repair submenu

- **Test base** - the correctness of the rules is controlled by the system upon entry, however, there may be situations when an error can occur, for example, when restoring databases from a backup. For this, a mode for checking the rules of the base is provided.

- **Rebuild thumbnails** – rebuild picture miniatures and update information

- **PNG -> JPG** – conversion all png lossless to jpg max quality

- **GIF -> MP4** – conversion all old gif to mp4 video

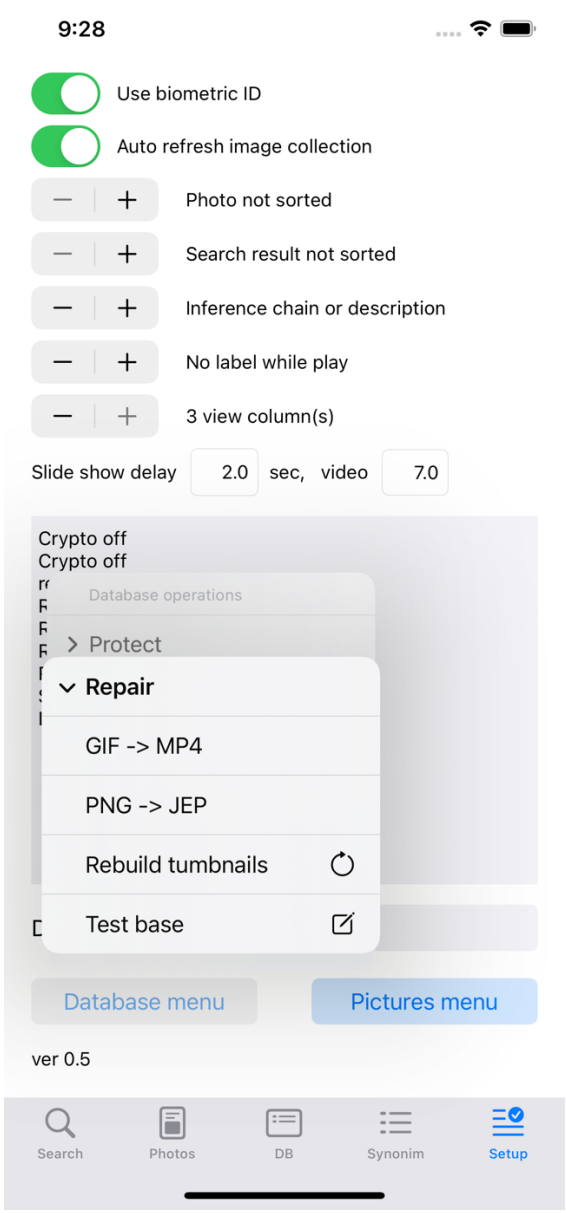
IMPORTANT: mobile device it's not good solution for butch video conversion, may cause memory shortage fatal error

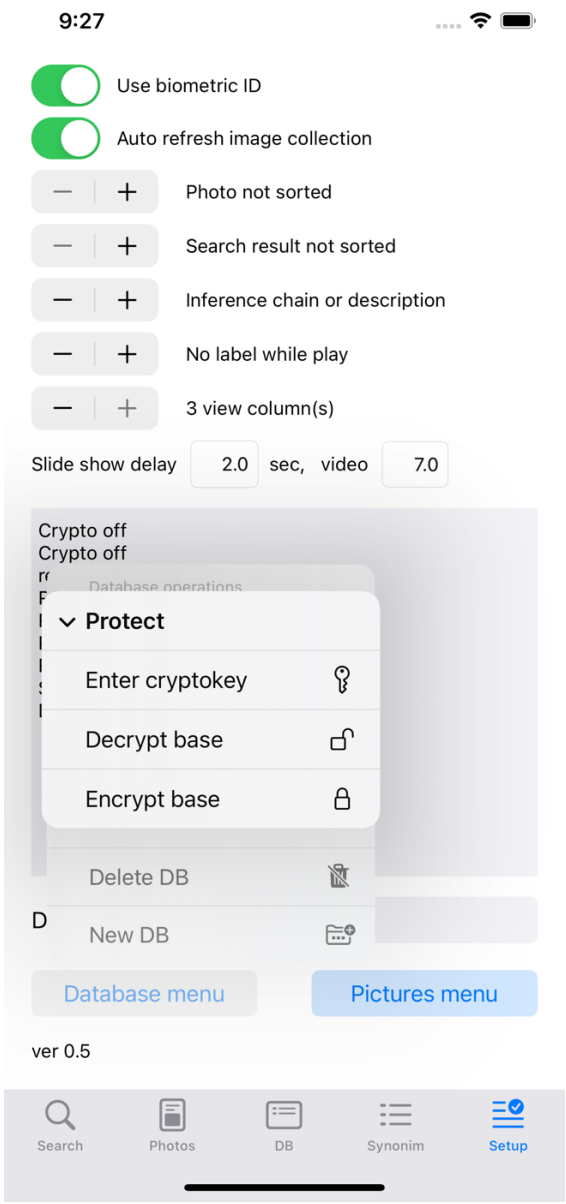
Protect submenu

EnterCryptokey – enter cryptokey again if missed

Decrypt base – make base and images acceceable for other view

Encrypt base –





Create pictures base

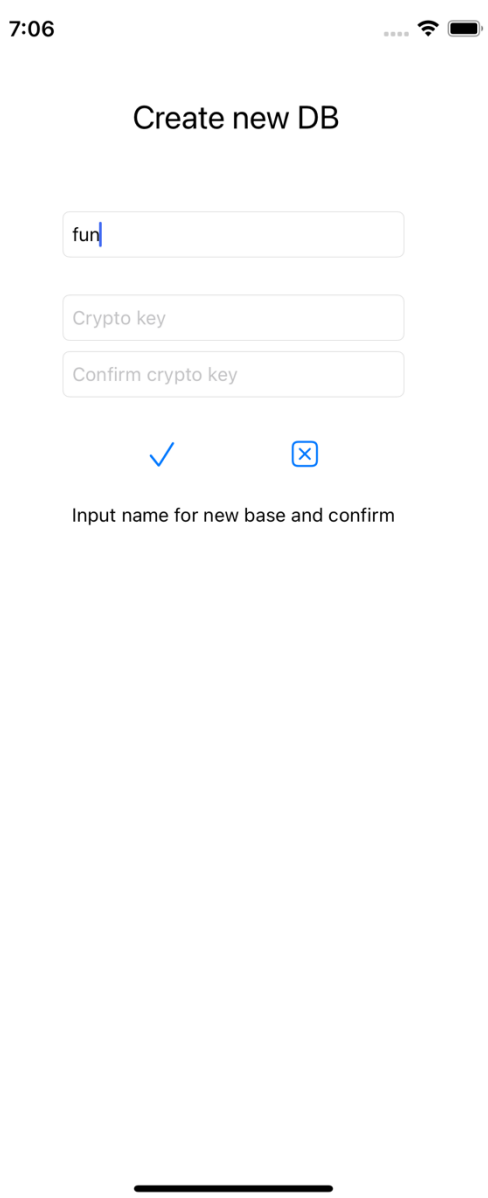
You can create separate bases for your needs, rules and facts for each base are created and used separately.

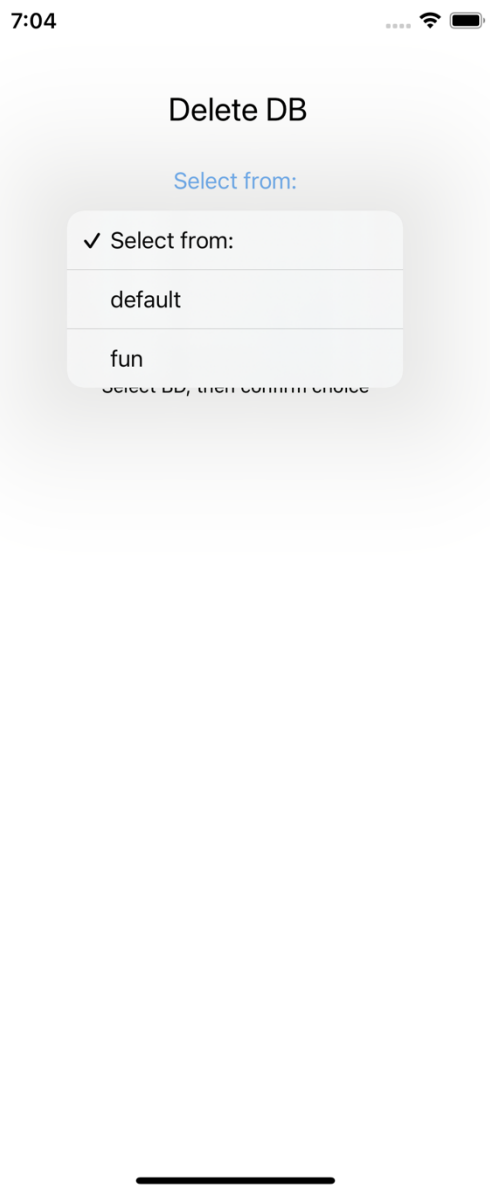
If you enter crypto key while creating new base – base will be encrypted from the beginning.

If necessary, you can save rules and synonyms from one database, and then read them into another database. When reading rules from files, they are completely replaced. Merge is not supported for now.

Delete picture base

You can delete the bases you created.

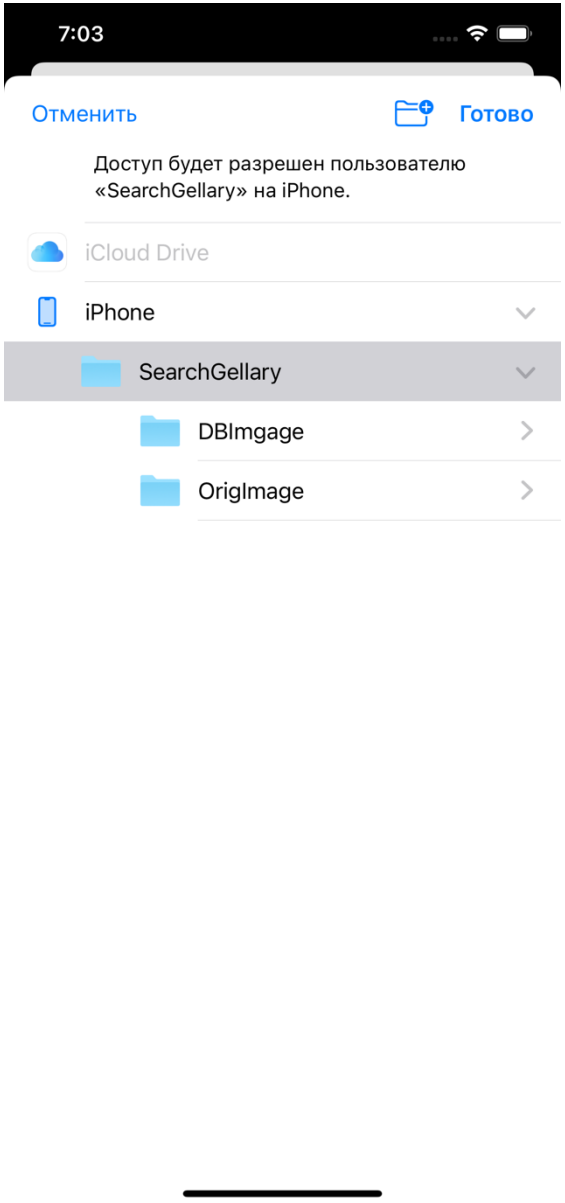


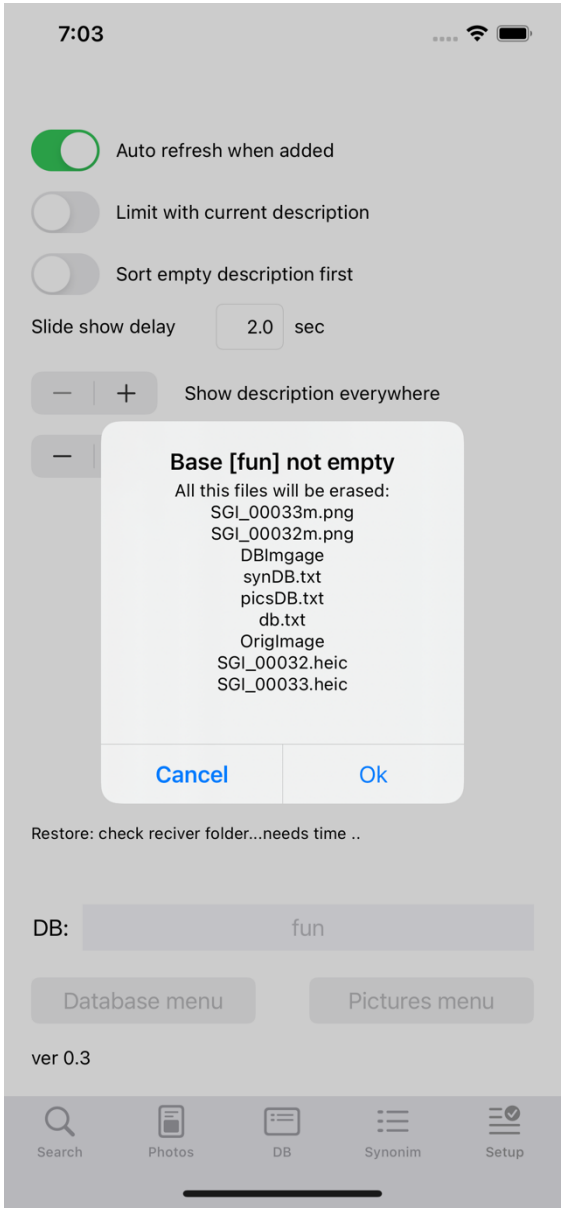


Back up and **Restore**

You can save the contents of your databases to a directory of your choice, as well as restore your databases from this directory from the state in which you saved them.

Before saving, the catalog is cleared, and when restoring, the database into which the restoration takes place is cleared also. What warnings will be displayed.



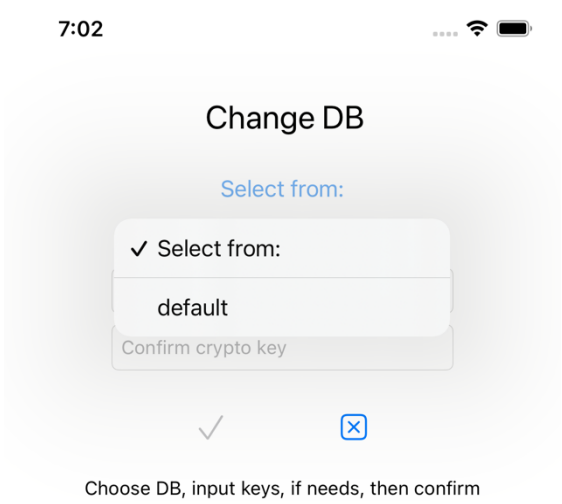


Change bases and rename

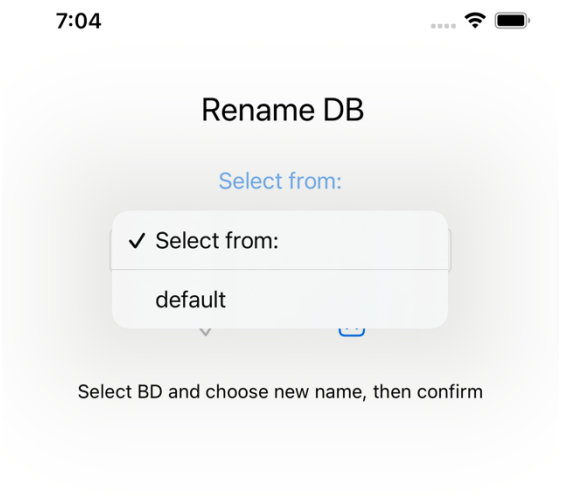
You can switch between databases and rename them if necessary.

You cannot rename the current database, you must switch to another database before renaming the current one.

Switching bases may also require you to enter encryption keys.



Choose DB, input keys, if needs, then confirm

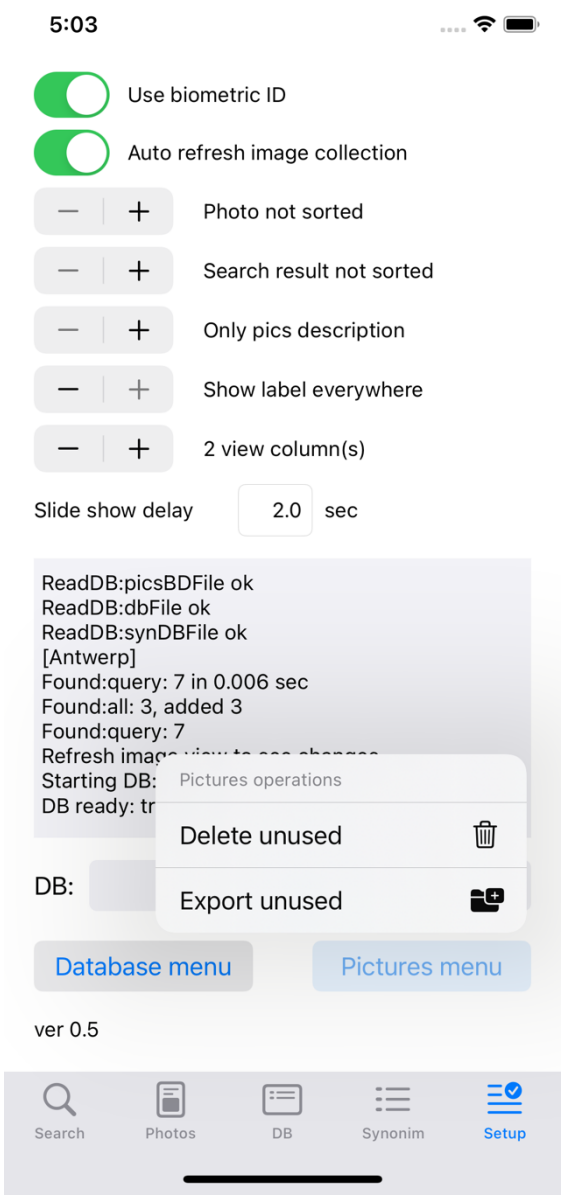


Select BD and choose new name, then confirm

Buttons picture: picture menu

- **Delete image files that are not referenced from databases,** integrity check (next page screen in the middle)

- **Upload to the gallery / copy / share files with pictures that are no longer used** in the database (next page right screen)

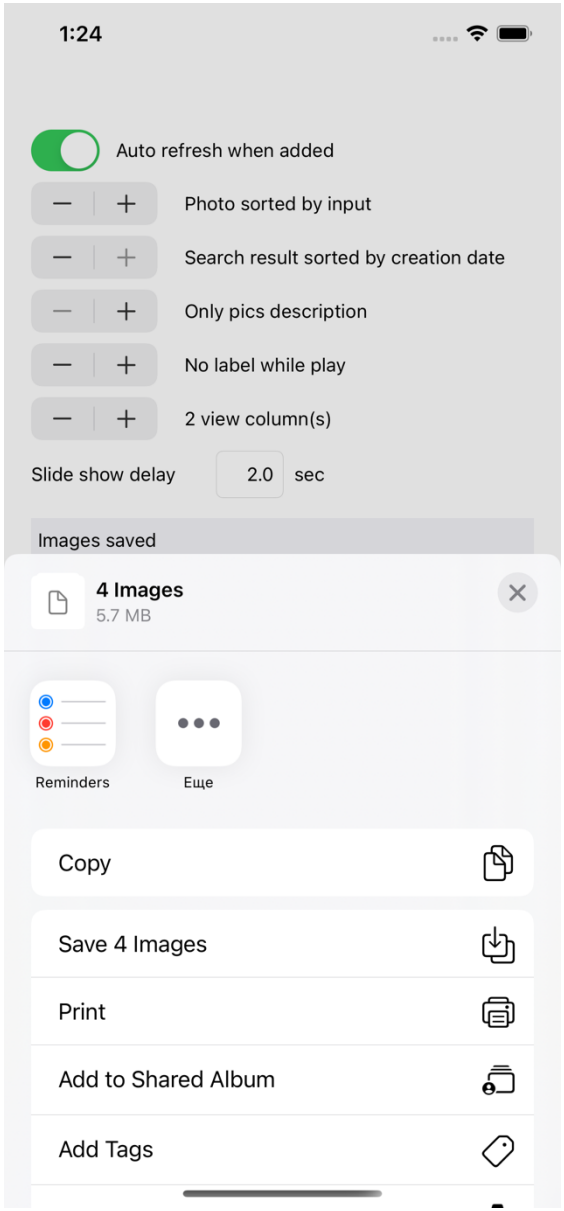


Checking image files and remove unnecessary (left)

You got a report about missing and unnecessary files, if you touch OK – unnecessary files will be removed.

Strongly recommend save to iOS file manager unnecessary files, which may contain important pictures

Save unnecessary files in iOS File manager (right)

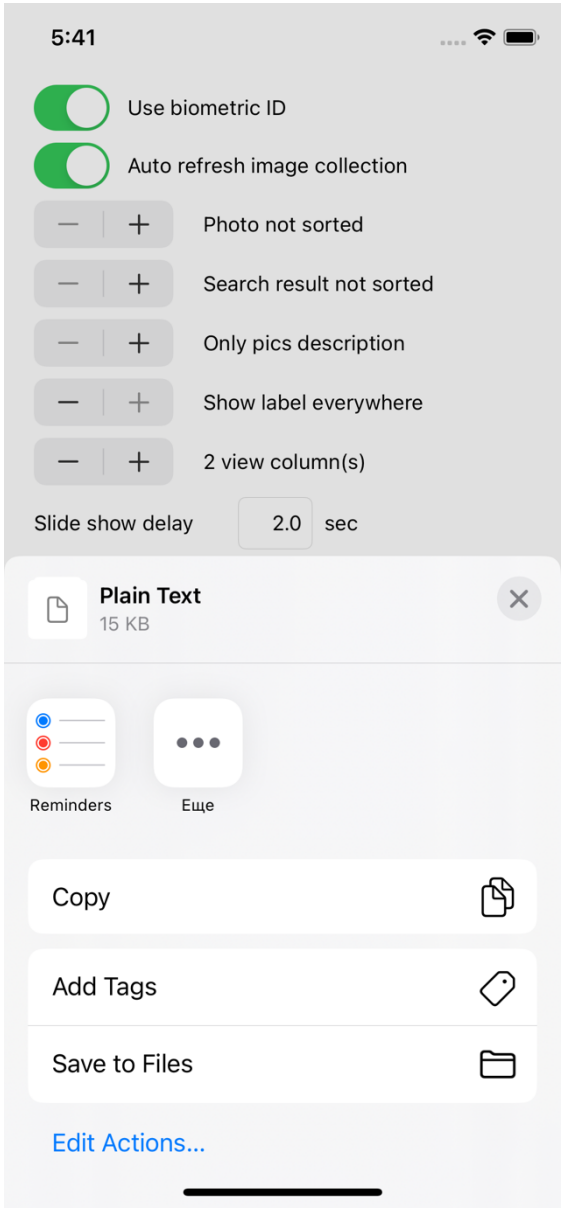


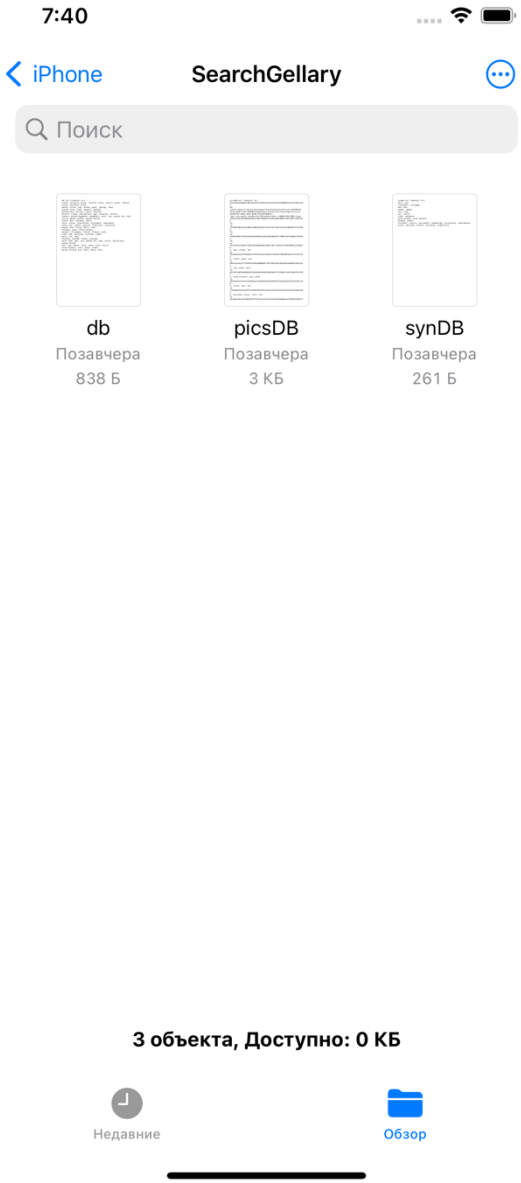
Saving data base files

db – file with rules

picsDB – file with pictures descriptions

synDB – synonym facts



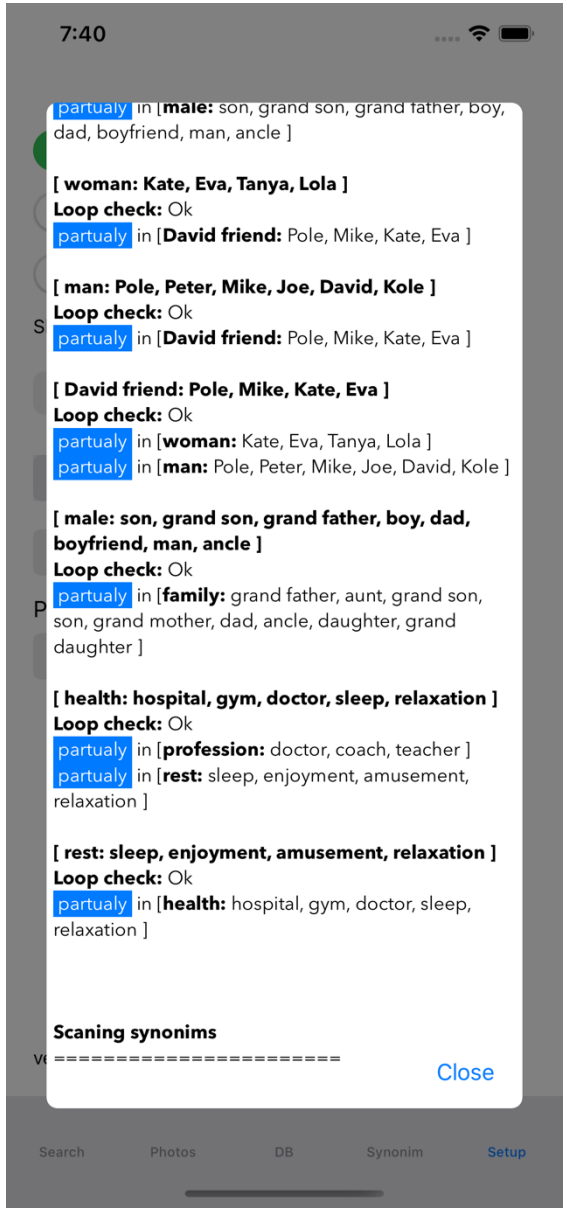


Test bases

During the Base check, the rules are scanned for their match with other rules. Identified partial and complete matches of the rules should be reviewed for possible errors during search.

Rules and synonyms were marked with [qual], marked orange should be revied, because they can cause problem with future search: recursively loop.

Also, better not to use same word in different synonyms facts. It's better collect all synonyms in one fact, because application consider them as one rule, but separating you may imagine they have different lexical meaning.



Bases' examples

Rules base

world: people, animals, area, time
sadness: evening, sunset, violet
countries: Germany, Ukraine, Russia, Belgium, Poland, Spain
female: grand mother, grand daughter, girlfriend, girl, aunt, woman, daughter
people: friend, male, female, stranger
Kharkiv: Klochkovskaya, Shevchenko garden, Zhuravlevka, Saltovka
Germany: Berlin
Europe: Ukraine, EU
river: river Kharkiv
meal: baked potato
water: spring, river, ocean, galf, sea, lake
ocean: Indian ocean, Arctic ocean, Pacific ocean, Southern ocean, Atlantic ocean
wild animals: lion, snake, puma
Ukraine: Kharkiv, Lviv
male: dad, grand father, son, boy, man, boyfriend, grand son, ancle
hairdresser: wigs, barber
health: relaxation, sleep, hospital, doctor, gym
sea: Mediterranean Sea, Black Sea
flowers: marigold flower, dandelion, hyacinths, wild rose, cornflower, yellow flower, narcissus flowers, cyclamen
family: grand mother, dad, grand son, ancle, grand daughter, grand father, aunt, daughter, son
rest: amusement, enjoyment, sleep, relaxation

Synonym's facts base

pets, pet
boys, boy
stranger, strangers
men, man
women, woman
leo, lion
kitty, cat
time, schedule
wild animal, wild animals
human, people
experience, affair, occurrence, events, phenomenon, incident, event, occasion, happening, episode, proceeding
street dog, street dogs
street animal, street animals
marigold flower, marigold flowers
narcissus flower, narcissus flowers
holidays, holiday
sunshine, sunny

Poland: Warsaw
EU: Spain, Poland, Belgium, Germany
Saltovka: Kompas
Berlin: Alexander platz
my home: Kharkiv
happiness: holidays, sunny, morning
pets: cat, dog
area: air, water, ground, territory, countries
Spain: Barcelona
street animals: street cats, street dogs, dove
event: war, holiday, work
Christmas: Saint Nicholas, Christmas wreath
holiday: playday, Christmas, parade, break
time: night, morning, day, evening
Belgium: Antwerp
profession: doctor, barber, teacher, coach
animals: wild animals, pets
kitchen: cooker, oven, electric kettle, waffle oven
romantic: rose petals

Known problems

1. For security reasons multiply sharing encrypted files not possible
2. Also, encrypted video sharing could be saved only into “Files” with random name without correct extension, needs manual rename (Sharing video with UIActivityViewController needs writing decrypted temporary files before transfer, so there is an possibility when some application can reach this decripted files in temp folder, so video transfers to UI control as Data and needs rename after transfer)
3. As variant, you can share encrypted database backups