MineralApp v1.7

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1 MineralApp

MineralApp is a small and simple application to create a database of minerals. You can add your mineral collection, storing any details you are interested in, helping you (hopefully...) to keep your mineral collection organized.

1.1 License and Copyright

This code and manual has been written by Simone Conti.

2 Install

2.1 Linux

MineralApp is written in Python. So first, install Python in your system, possibly the latest version (3.7+). Any recent version of Python comes with pip, which is a utility to install most python packages. Using pip, you can install MineralApp just by typing in a terminal/command line:

```
sudo pip install --upgrade https://github.com/SimoneCnt/MineralApp/archive/master.zip
```

This would put an executable in `/usr/bin/`, and should put a link in your applications menu. If the icon in the application menu does not work, try to run:

```
sudo gtk-update-icon-cache /usr/share/icons/hicolor/
```

2.2 MacOS

For MacOS, MineralApp is packaged in a dmg file. Just download `MineralApp.dmg`, open it, and drag MineralApp.app in the Applications directory.

2.3 Windows

I do not have a Windows machine to test it... An installation similar to the Linux one *should* work given you have Python (v3.7+) installed in your system.

3 How to Use

3.1 Add and modify minerals

Click on "Add new mineral" and fill the form to add a new mineral. Here a brief description of each field:

- Name: a genral name of the sample, like `Fluorite`, `Smoky Quartz`, or `Quartz on Muscovite`.
- Number: and increasing number for each sample; it is given automatically if left blank. Two samples cannot have the same number.
- UID: an unique identifier; this is also created automatically if left blank according to the rules in Settings (see below).
- Locality: the locality of the sample, in which mine or state it was found. Usually something like: "cave, state, country", e.g. `Jardinera #1 mine, Inca de Oro, Chile`.
- Acquisition: how and when you get possession of the sample, like "Bought at mineral show at —", or "Found myself during field trip at —".
- Size: the dimension of the sample in whatever units you prefer (cm, inch, millimiters...); e.g. `1 x 2 x 1.5 cm`.
- Weight: the weight of the sample whatever units you prefer; e.g. `10 g`.
- Price: how much you paid for the sample, or how much it is worth.
- Collection: your minerals could be divided in different collections, like fine crystals, fluorescent samples, gemstone, cabochon, etc. Use this field to classify minerals by collection. Can also be used for the storage of the sample, like in which cabined, box of drawer the speciment is stored.

While the above fields are general for the whole sample, the following ones are specific for each species present in the sample. To divide the information of each specie use the special separator `;;`. See below for examples.

- Species: the list of species in the sample; e.g. if the sample contains quartz anf fluorite insert `Quartz ;; Fluorite`
- Class: the Nickel-Strunz classification for the main mineral in the sample; e.g. `4.DA.05` for quartz, or `3.AB.25` for fluorite. You can get it from mindat, if left blank it is automatically given the class `X.XX.XX`. For example insert `4.DA.05 ;; 3.AB.25` for a sample containing both quartz and fluorite.
- Chemical formula: the chemical composition of the main minerals. If the mineral has crystallization water (or similar) use `.` as "dot"; e.g. for gypsum use `CaSO4 . 2H2O` and *not* `CaSO4.2H2O`

- Fluorescence: If the mineral is fluorescent, add fluorescence color and strength (w: weak, m: medium, s: strong); e.g. if the the quartz in the sample under long wave UV is not fluorescent but the fluorite has medius strenght violet fuorescence you can insert `None ;; Violet (m)` in the Fluorescence (LW) row. Four entries are dedicated to fluorescence, each one for a different wavelenght of the UV light: short-wave (254nm), mid-wave (310nm), long-wave (364nm), and blue laser (405nm).
- Radioactivity: Indicate if the mineral if radioactive, and its activity.

Last, free field to add any comment:

- Comments: any other comments you have on the sample, like special notes, observations, stories, ...

Once the form is filled, click "Add Mineral!" to store add data. It will then appear on the left panel of the app: if you click on it all stored informations will be displayed on the right panel. If you find any error, or want to add some other information, select the mineral you want to modify in the left panel, and click "Modify selected". A similar form to the previous one will appear, where you can modify what you need to.

3.2 Save (and retrive) the mineral database

Once you have finished to insert all your minerals you need to save the database you have created. To save the database, just click to "Save database" and pick where to save it and how to call it. The file extension is not important, I use `.json`. To retrive a saved database, click to "Load database" and find the database file you want to load.

WARNING! By default no automatic saving is done, so if you close the application without saving everything is lost!

3.3 Mineral photos and images

MineralApp can show photos and figures about the minerals you inserted. To have this, create a new directory where you saved the database, and store inside the photos and images. To "attach" a photo to a minreal the filename of the photo must start with the UID of that mineral. For example, if in your database you have a mineral whose UID is `7.GA.05_Powellite_75`, you can save the images `7.GA.05_Powellite_75.jpg` and `7.GA.05_Powellite_75_UVSW.jpg` inside the `images` directory, and they will show up in the right panel of the application when you click on that mineral. The file directory structure should be:

```
parent-directory/
    my-database.json
    images/
        7.GA.05_Powellite_75.jpg
        7.GA.05_Powellite_75_UVSW.jpg
        any-other-image
```

3.4 Settings

There are three settings:

- Sort by: define how to sort the minerals in the left panel: "Class" will order them by class, "Number" will order them by number (which should be chronological order of addition)
- Style: the style of the application. You can pick among some styles in the drop-down menu. Just cosmetics...
- Format UID: the format of the UID for each mineral. By default it is `%C_%S_%N` which translate to `class_species_number`. For example for a Powellite (class 7.GA.05) that was added as number 75, the default class is `7.GA.05_Powellite_75`. You can modify the UID format as you like, remembering that `%C` will be substituded by the class of the mineral, `%S` by the species, and `%N` by the number. The format I use is `%C_%S_SC%N` to mark that that mineral is in the `SC` collection.

Click save to apply changes in the UID. **NOTE** If you change the UID format you will need to manually change the filename of any image or photo to get them recognized again.