



Office Basic Source Code Management

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2017/2/4

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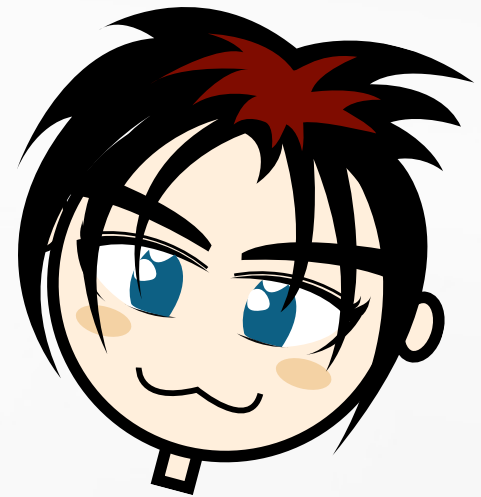
imacat / Yang Shih-Ching

- Taiwan OpenOffice/LibreOffice community
- Apache OpenOffice PMC
- Women in FOSS in Taiwan





OpenOffice Basic is cool!



It connects programming
with everybody's daily routines.



A collection of various hand tools including a hand saw, screwdrivers, a wrench, a hammer, pliers, a level, and a tape measure, arranged around a central text overlay. The tools are rendered in a simple, stylized manner with black and grey colors. The background is white with a faint blue vertical stripe on the left side. The text "I create Basic toolkit applications for all kinds of jobs." is centered in a black, sans-serif font.

I create Basic toolkit applications
for all kinds of jobs.



For example,

Accounting Sheet

	A	B	C	D	E	
1	Date	Summary	Income	Expense	Balance	
2	2017/1/4	Lunch		\$4	\$8,476	
3	2017/1/4	Bus		\$3	\$8,473	
4	2017/1/5	Salary	\$1,800		\$10,273	
5	2017/1/5	Lunch		\$3	\$10,270	
6	2017/1/5	Coffee		\$3	\$10,267	
7	2017/1/5	Shoes		\$40	\$10,227	
8	2017/1/5	Eggs		\$2	\$10,225	
9	2017/1/6	Lunch		\$4	\$10,221	
10	2017/1/6	Bus		\$3	\$10,218	
11	2017/1/6	Milk		\$4	\$10,214	
12	2017/1/7	Lunch		\$3	\$10,211	
13	2017/1/7	Bus		\$3	\$10,208	

Meet-up Sign Book

	A	B	C
1	Name	Email	Telephone
2	Michelle Stewart	michelle@example.com	0994827836
3	Albert Foster	albert@example.com	0962452823
4	Sara Diaz	sara@example.com	0916432729
5	Joe Edwards	joe@example.com	0989002701
6	Benjamin Peterson		
7	Larry Alexander		
8	Alice Cook		
9	Doris Barnes		
10	Clarence Washington		
11	Stephanie Campbell		
12	Christina Davis		
13	Patricia Russell		
14	Katherine Martinez		

Sign Book

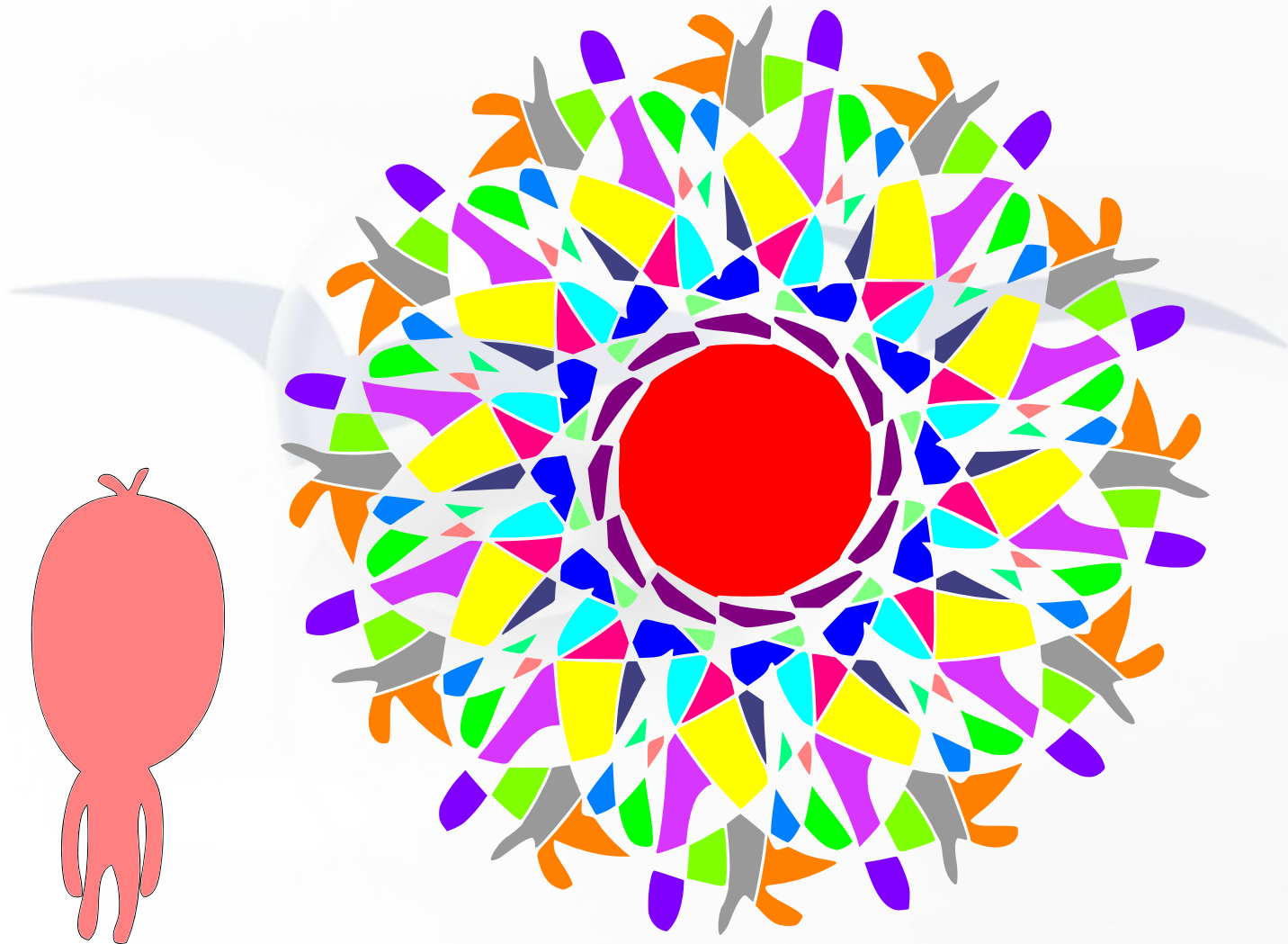
Date/Time: Venue:

#	Name	Email	Telephone	Signature
1	Michelle Stewart	michelle@example.com	0994827836	
2	Albert Foster	albert@example.com	0962452823	
3	Sara Diaz	sara@example.com	0916432729	
4	Joe Edwards	joe@example.com	0989002701	
5	Benjamin Peterson	benjamin@example.com	0987855818	
6	Larry Alexander	larry@example.com	0917677574	
7	Alice Cook	alice@example.com	0980602581	
8	Doris Barnes	doris@example.com	0924878068	
9	Clarence Washington	clarence@example.com	0909392077	
10	Stephanie Campbell	stephanie@example.com	0913017227	
11	Christina Davis	christina@example.com	0918238374	

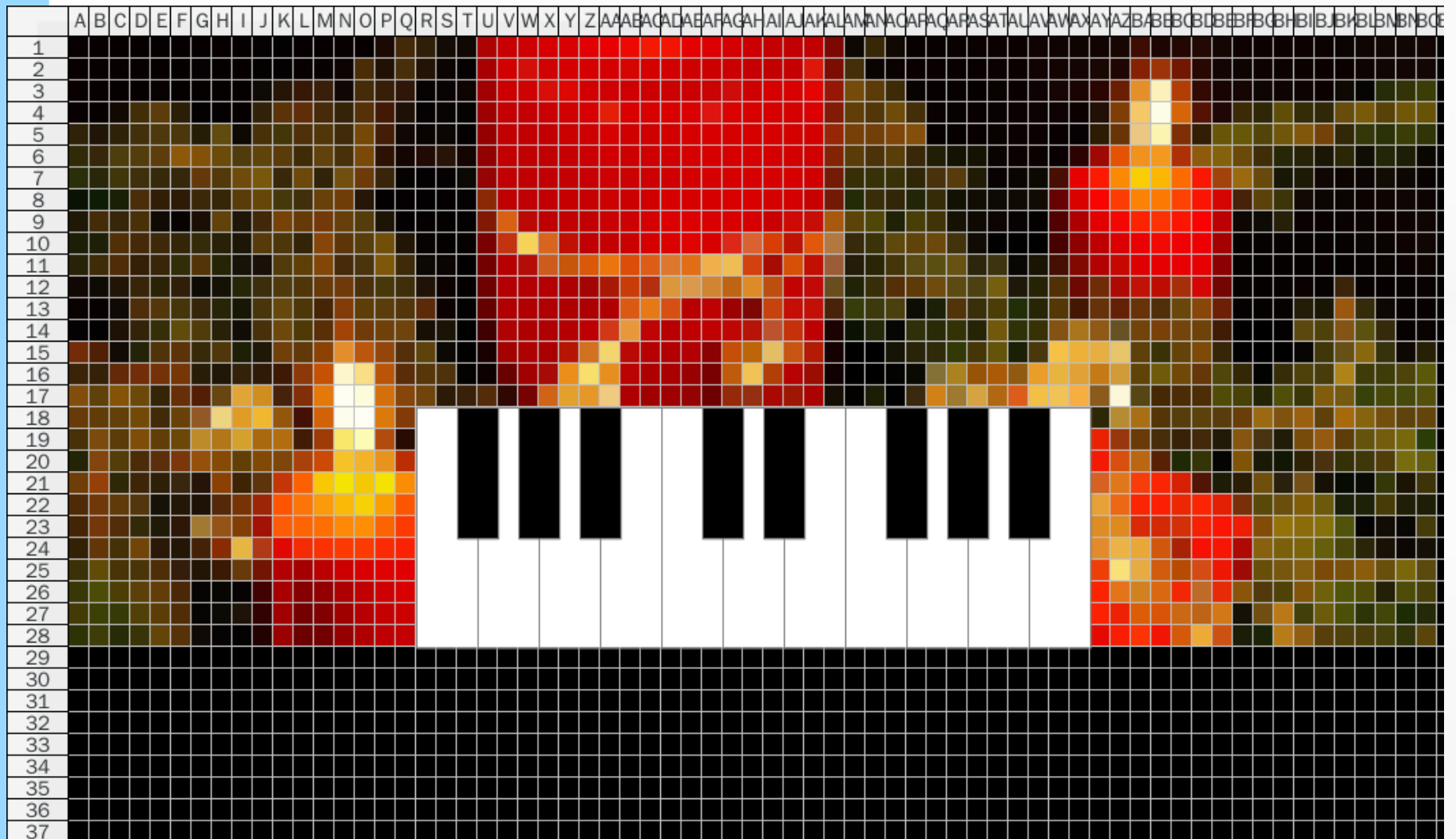


Mosaic Spreadsheet

Geometrical Paintings



Piano



Christmas Tree

Pokémon GO IV Calculator

Pokémon GO IV Calculator

Pokémon: Dragonite 

CP: 1823 HP: 109 Star dust: 2200 Player level: 24

☒ This Pokémon has not been powered-up yet.

Team Leader Appraisal

 Team: ☒ Valor ☐ Mystic ☐ Instinct

 Candela, leader of Team Valor, says:

Overall, your Dragonite simply amazes me. It can accomplish anyth 

Its Attack  is its strongest feature.

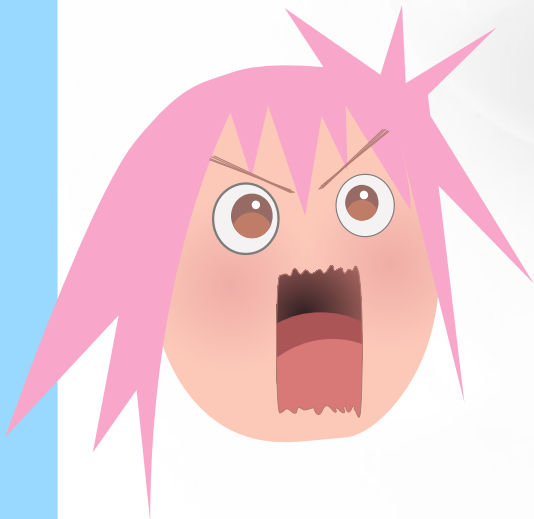
☒ I'm just as impressed with its Defense.

☐ I'm just as impressed with its HP.

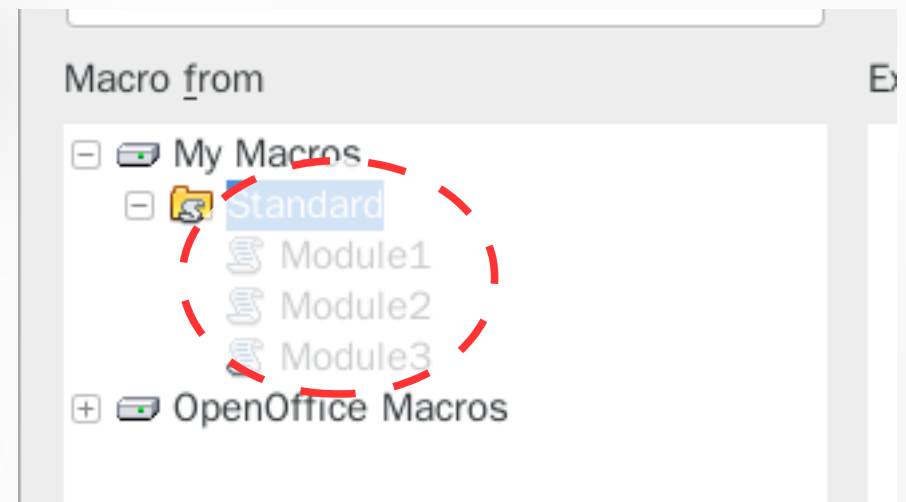
I'm blown away by its stats. WOW! 

OK Cancel

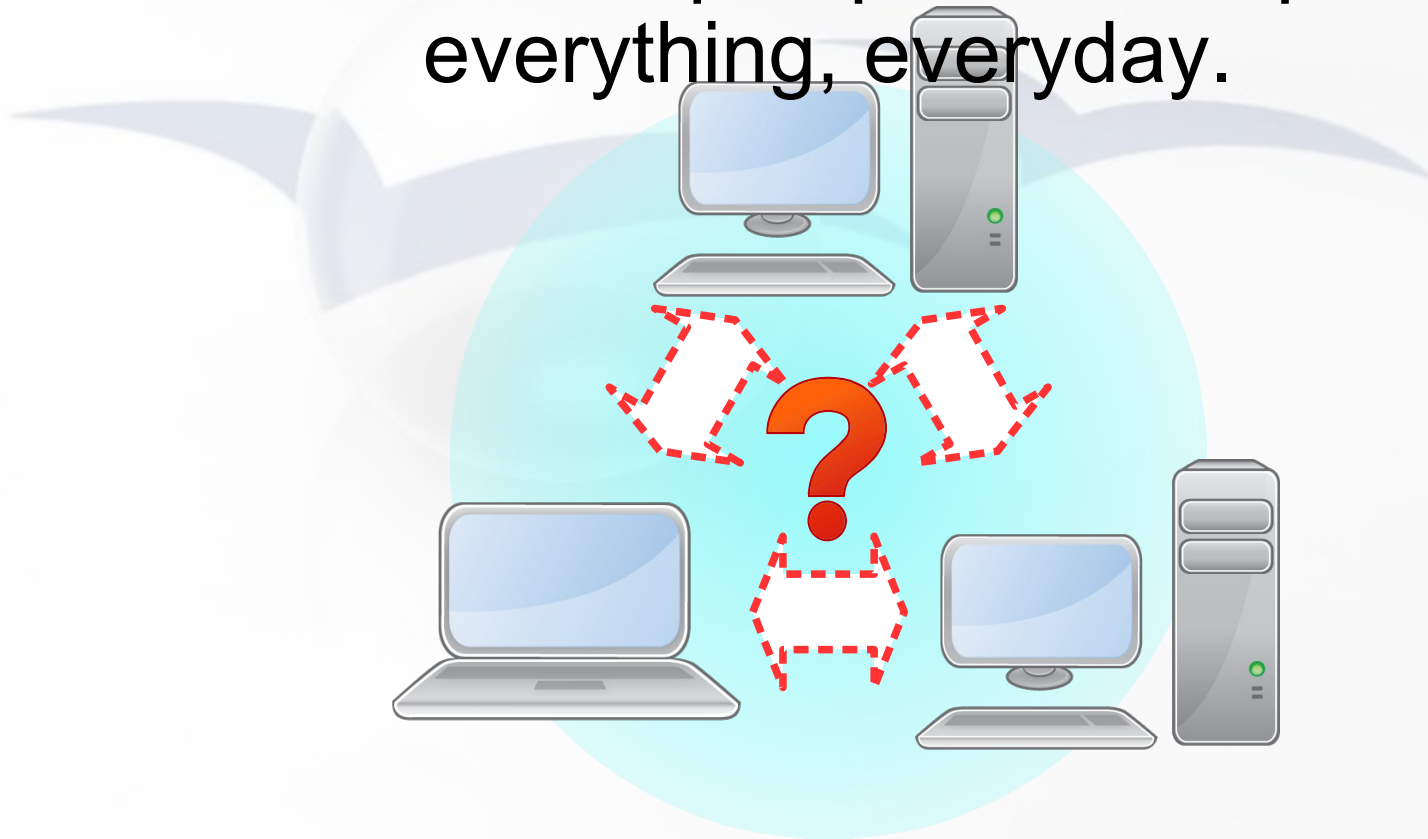
But still,
OpenOffice Basic sucks!



I lost all my Basic macros
when I reinstall my system,
if I forget to export them.



I cannot synchronizing my Basic macros
among my office PC, my home PC,
and my laptop
unless I keep export and import
everything, everyday.





Finally, Basic IDE sucks.

And the macros are exported XML files,
which I cannot work with directly.



This means I cannot do complicated things
that Basic IDE does not support.

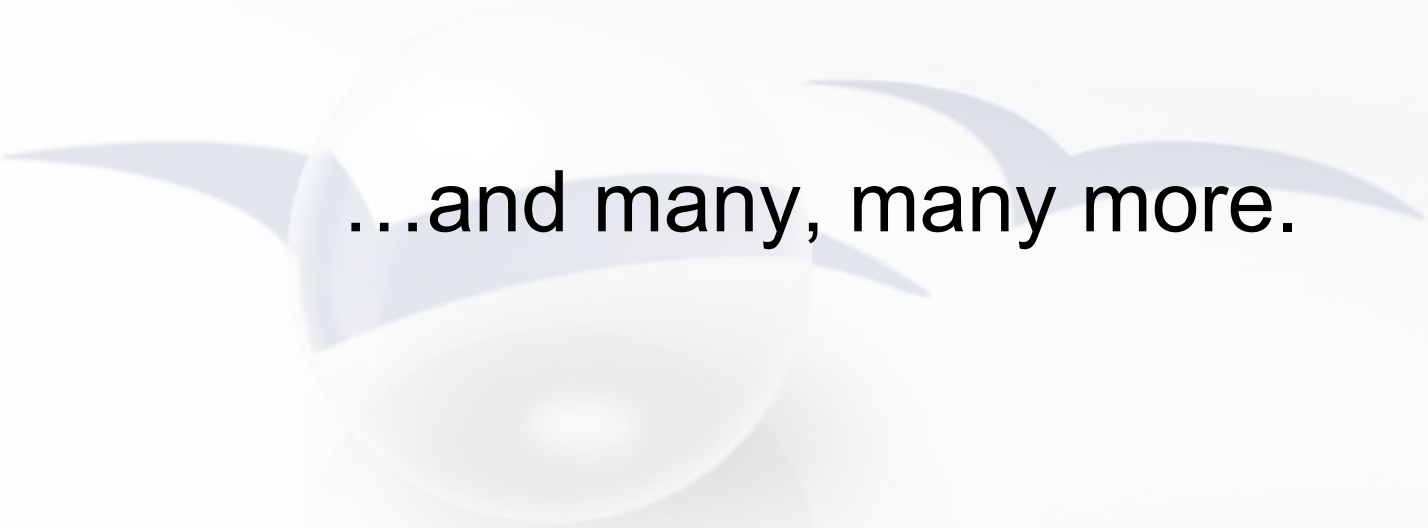
Things like...

...regular expression search and replace,

`/\w+@\w+(\.\w+)+/`

...looking into all the occurrence of something
for code refactoring,

```
grep -r "getNumUsers" *.*.*
```



...and many, many more.

So, I wonder:
Can I write Basic macros
outside of Basic IDE?



What do I need
if I want to write Basic macros
outside of Basic IDE?



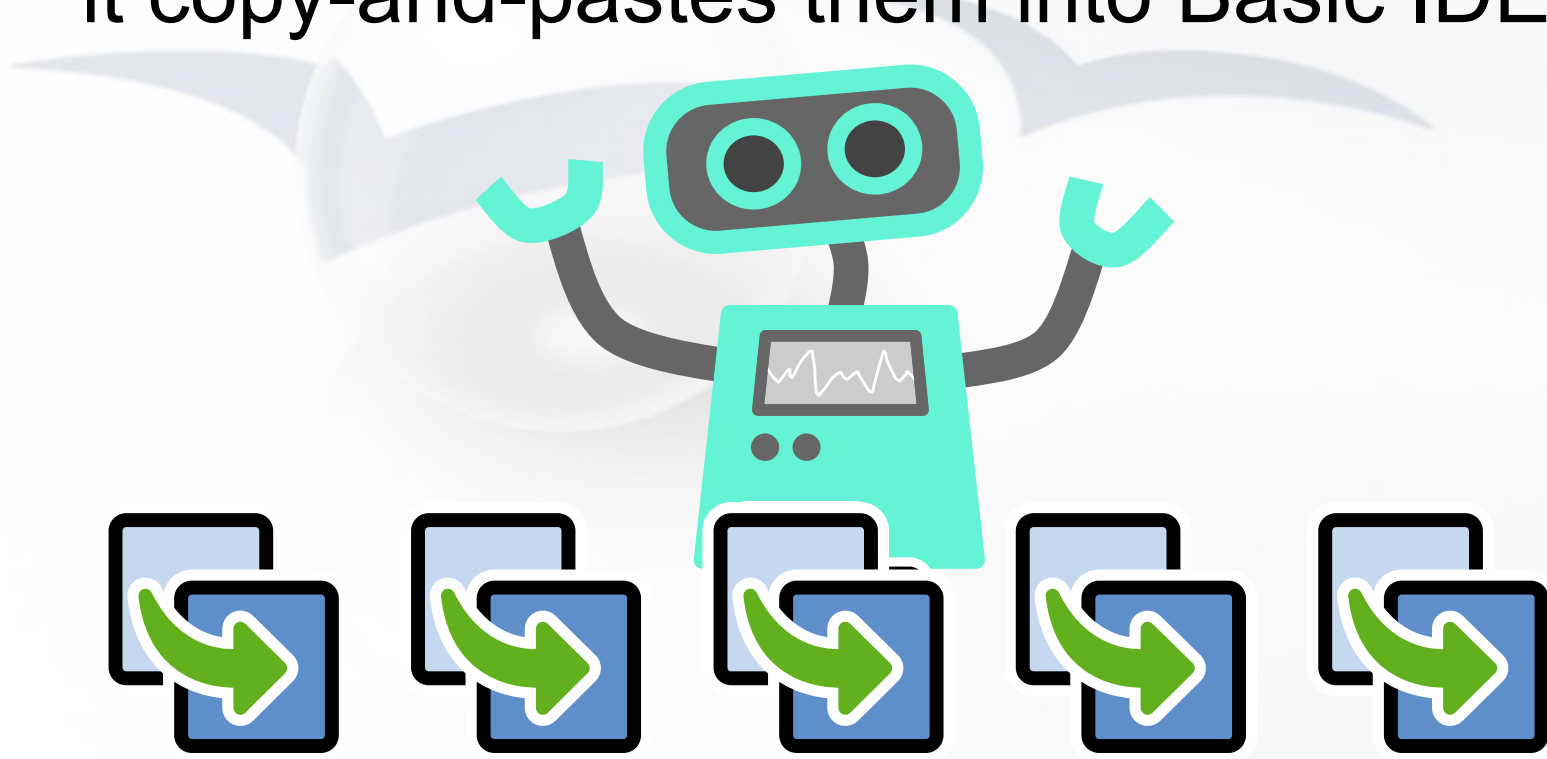
I can keep a source directory.
Whenever I update my macro sources,
I copy-and-paste them into Basic IDE.



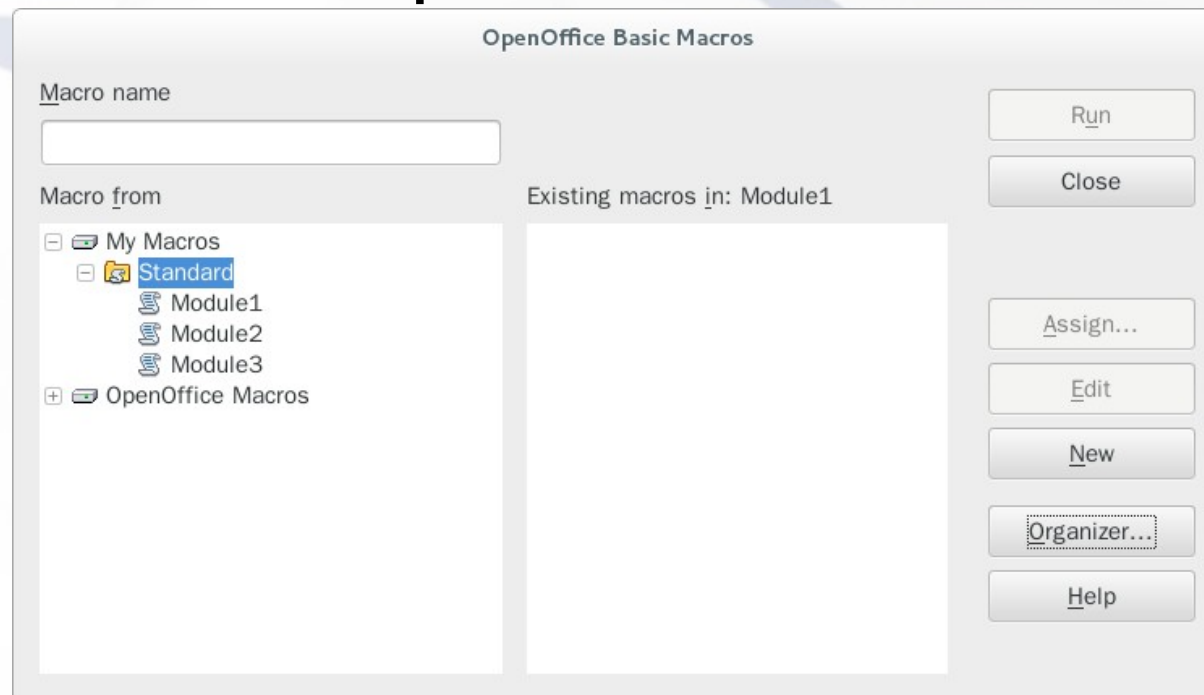
But this doesn't make things easier.



Or I can create a tool to do this.
Whenever I update my macro sources,
it copy-and-pastes them into Basic IDE.



To do this,
I need to be able
to read and update the Basic macros.





This reminds me of
something similar I'd done before.

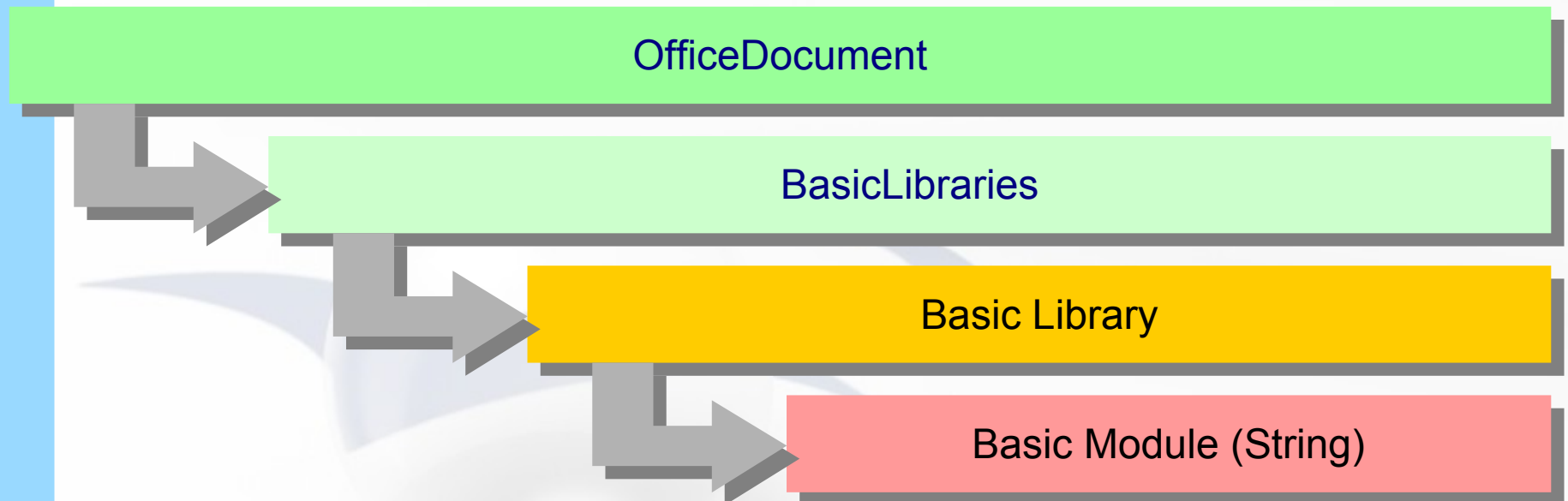
Calc Mosaic

<http://sf.net/p/calcmosaic>

[illegible]

In Calc Mosaic,
after all the mosaic sheets are created,
Basic macros are inserted to play these sheets.

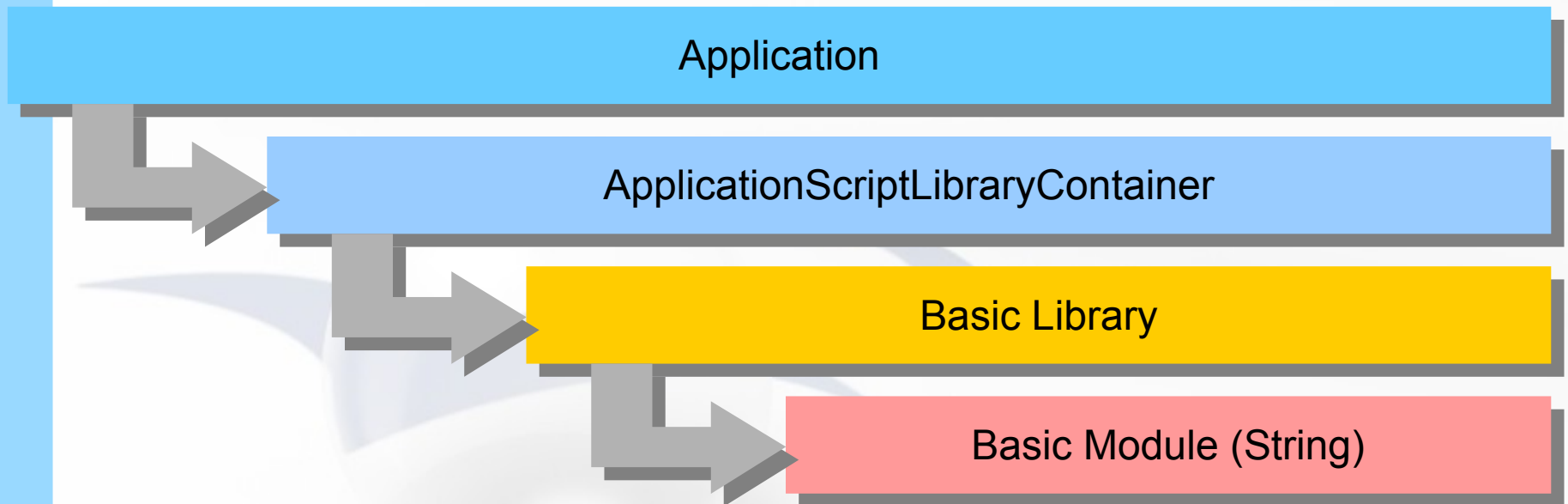
Document Basic Macro Storage



- The document Basic macro storage is the **BasicLibraries** attribute of the **OfficeDocument** object.

```
doc_libs = doc.getPropertyValue("BasicLibraries")
```

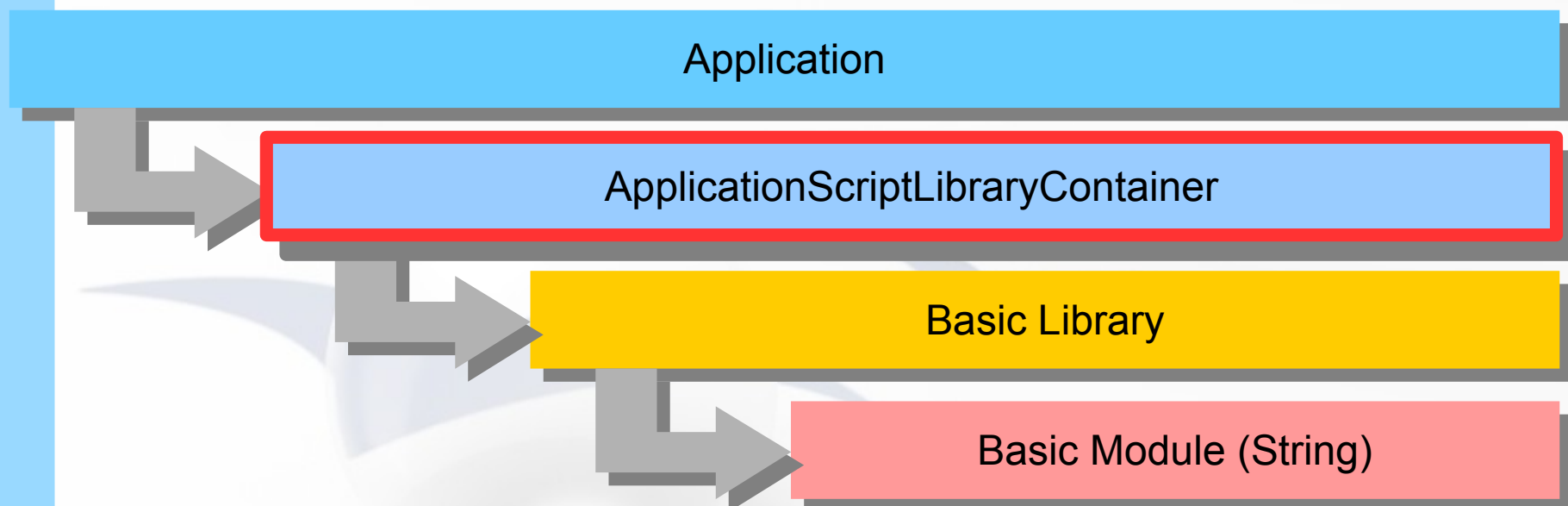
System and User Basic Macro Storage



- But the system and user Basic macros are stored together at a different location, the `ApplicationScriptLibraryContainer` service.

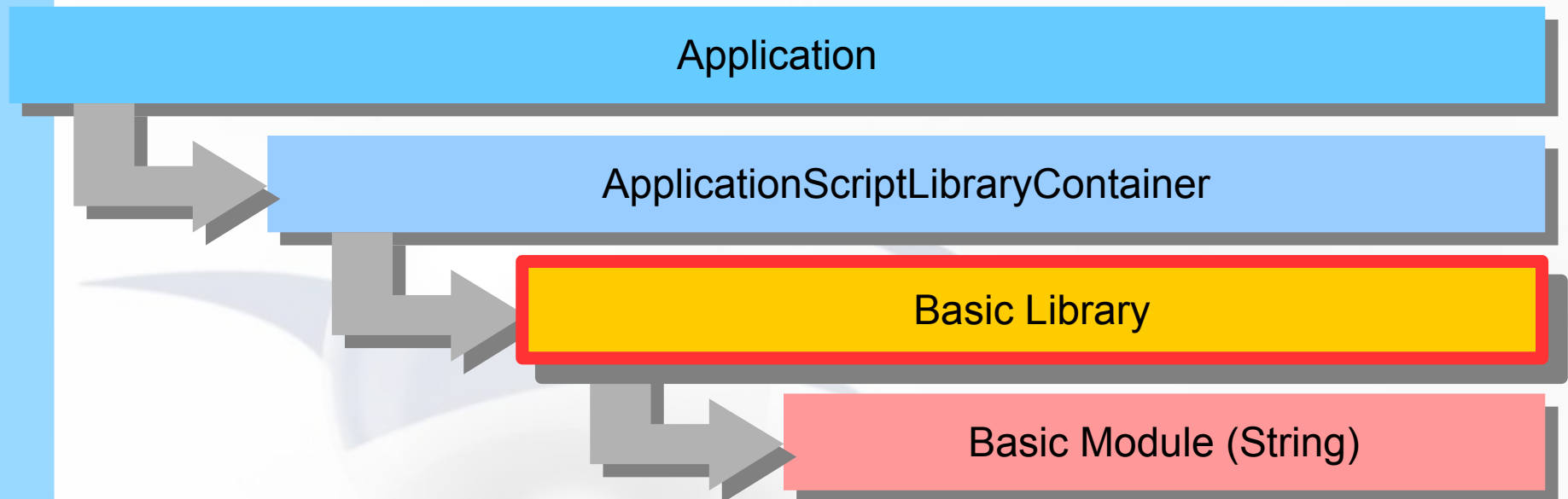
```
app_libs = service_manager.createInstance(  
    "com.sun.star.script.ApplicationScriptLibraryContainer")
```

Basic Library Storage



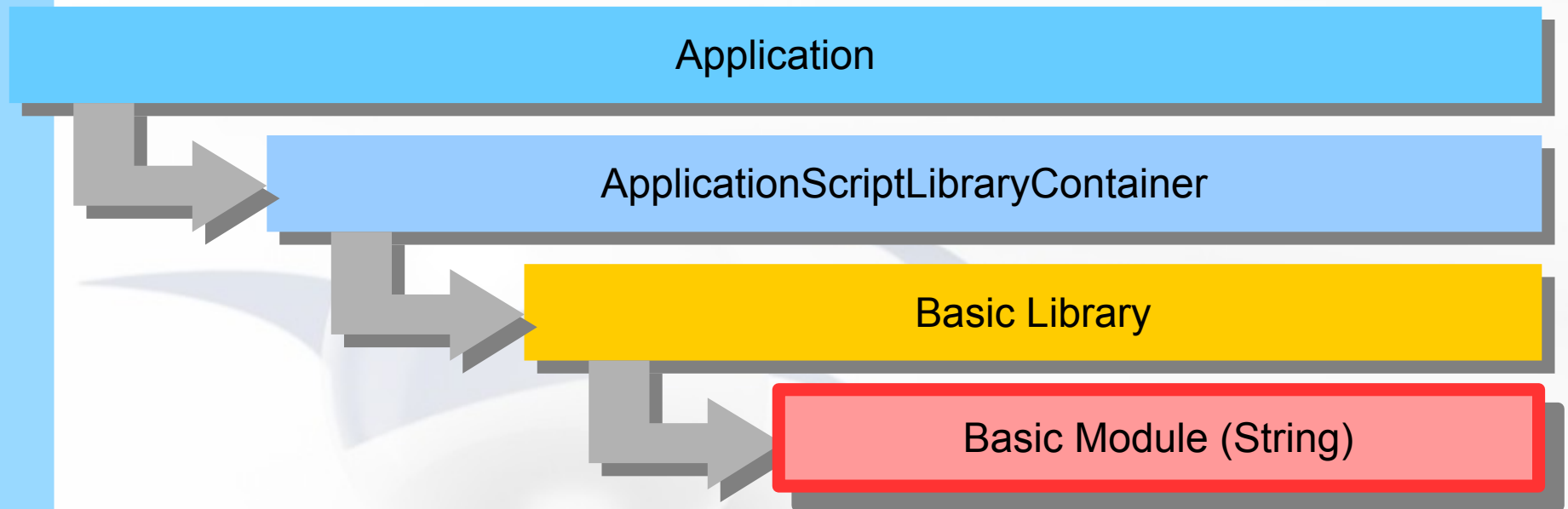
- ApplicationScriptLibraryContainer has the **XNameAccess** interface.
 - Use **hasByName()** to check if a library exist.
 - Use **getByName()** to obtain a library.

Basic Library

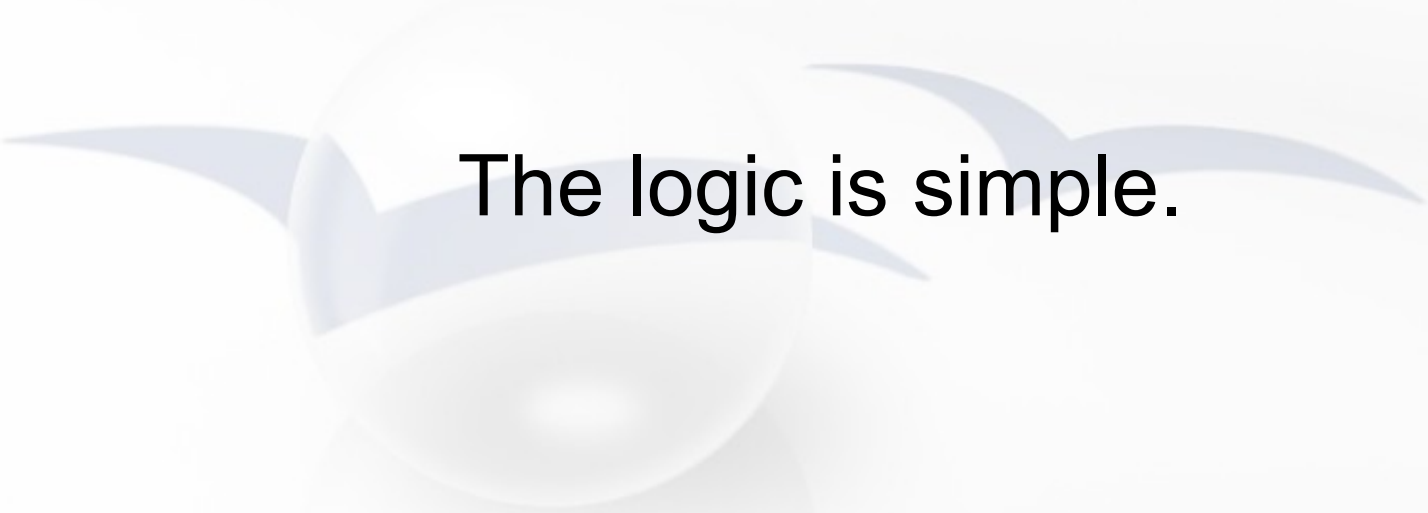


- The Basic library is an **XNameContainer**.
 - Use **getByName()** to obtain a module.
 - Use **replaceByName()** to update a module.
 - Use **insertByName()** to add a module.
 - Use **removeByName()** to delete a module.

Basic Module

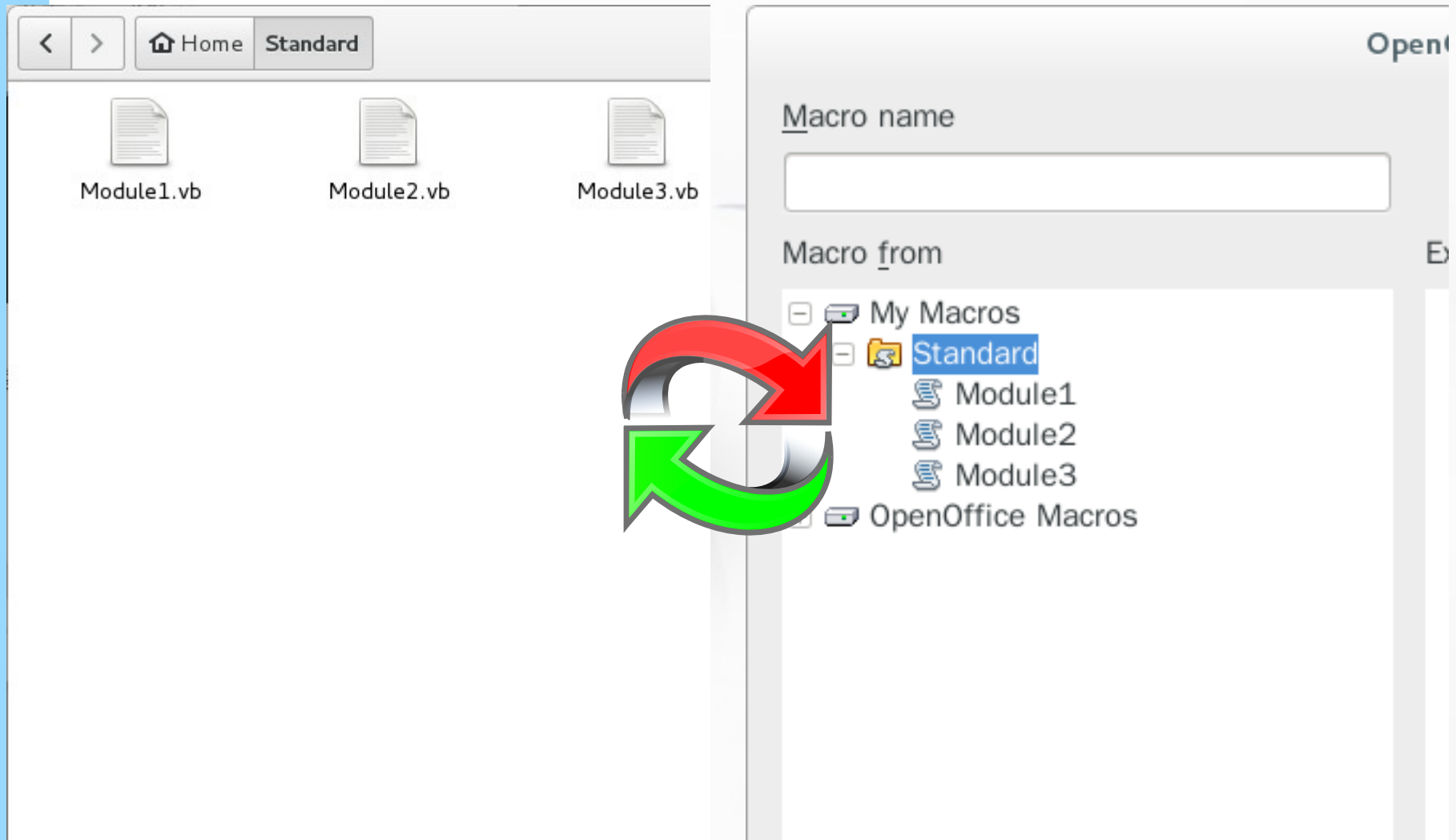


- The Basic module obtained with the previous `getByName()` is a String that contains one or more Basic subroutines as Basic macros.

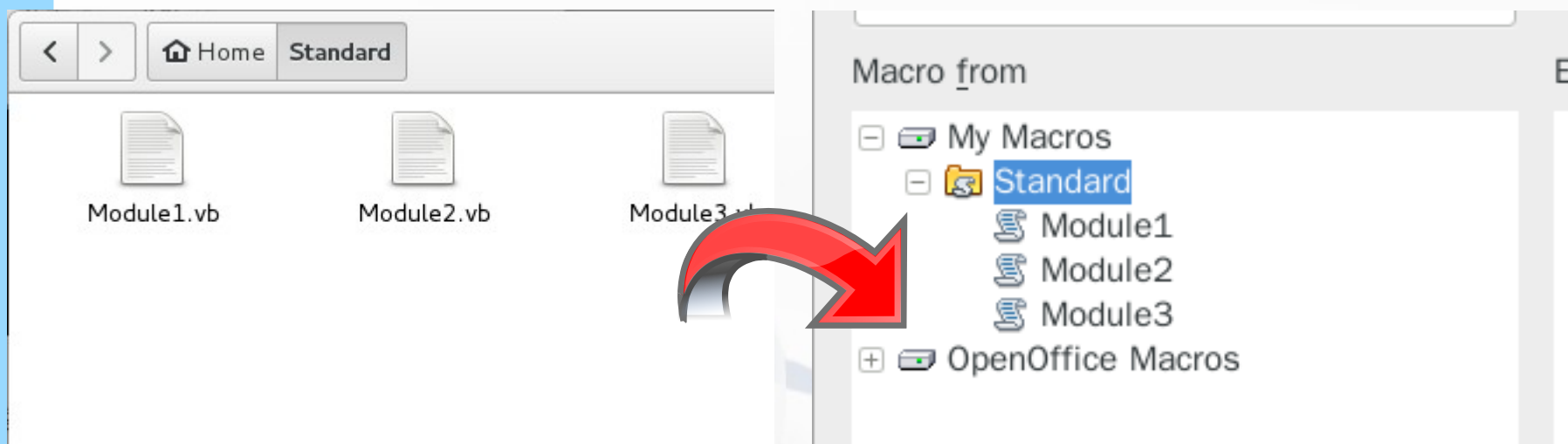


The logic is simple.

Synchronize Between Files and Basic Storage

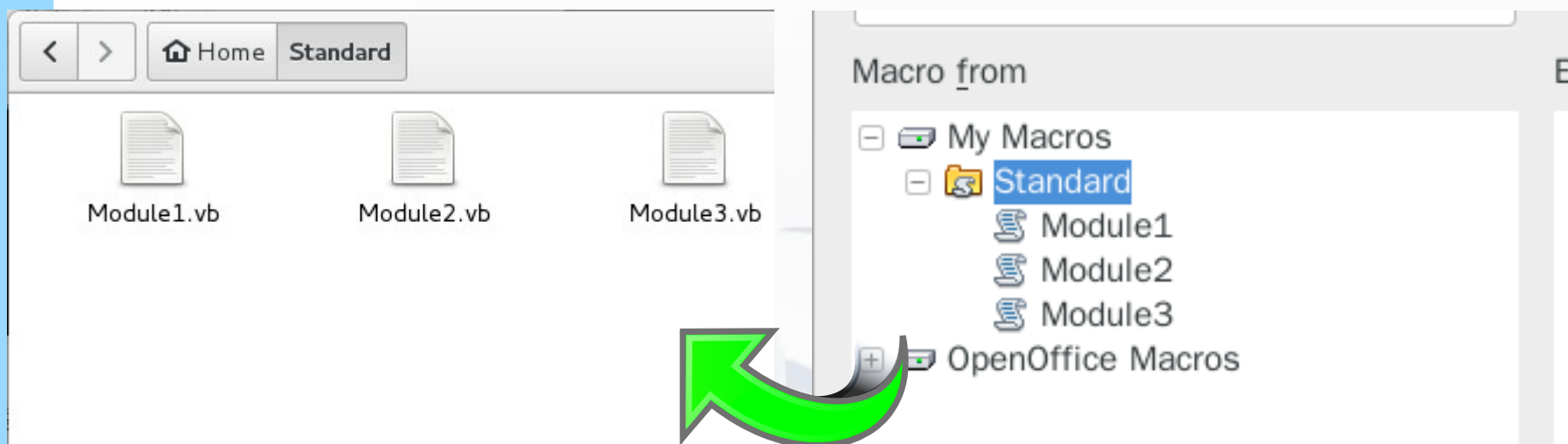


Update Basic Modules (Upload / Check In)



- Add the missing Basic modules.
- Replace the updated Basic modules.
- Delete the obsoleted Basic modules.

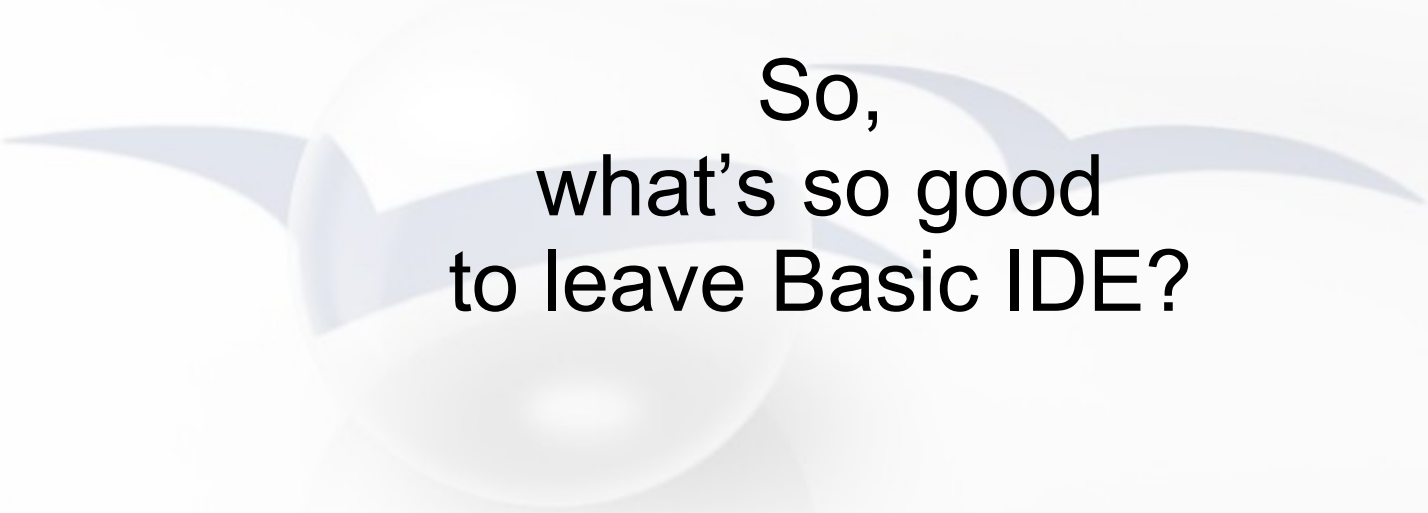
Update Source Files (Download / Check Out)



- Add the missing source files.
- Replace the updated source files.
- Delete the obsoleted source files.



(obasync Demonstration)



So,
what's so good
to leave Basic IDE?



Developers can store the source files
with **cloud sync services**,
and access their source files *EVERYWHERE!*



Developers can apply ***version control system*** to manage their source files.

CVS





GitHub

Developers can ***host their projects*** on common project hosting services.

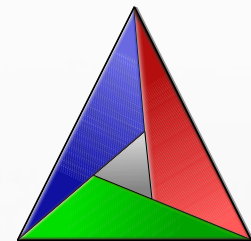


Alioth.debian.org



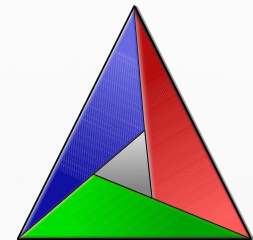
Developers can apply ***build tools*** to automate extension packaging, unit tests, and releases.

make



In addition, with the build tools,
we can establish
project layout rules and ***templates***
to simplify and automate project management.

make



Take my Pokémon GO IV Calculator
for example.



Pokémon GO IV Calculator

- It is entirely in my  **Dropbox** folder.
 - I work seamlessly on my PC and my laptop.





Pokémon GO IV Calculator

- It is entirely in my  **Dropbox** folder.
 - I work seamlessly on my PC and my laptop.
 - I do not worry if my hard disk dies.



Pokémon GO IV Calculator

- It is entirely in my  **Dropbox** folder.
 - I work seamlessly on my PC and my laptop.
 - I do not worry if my hard disk dies.
- I use  **git** for version control.

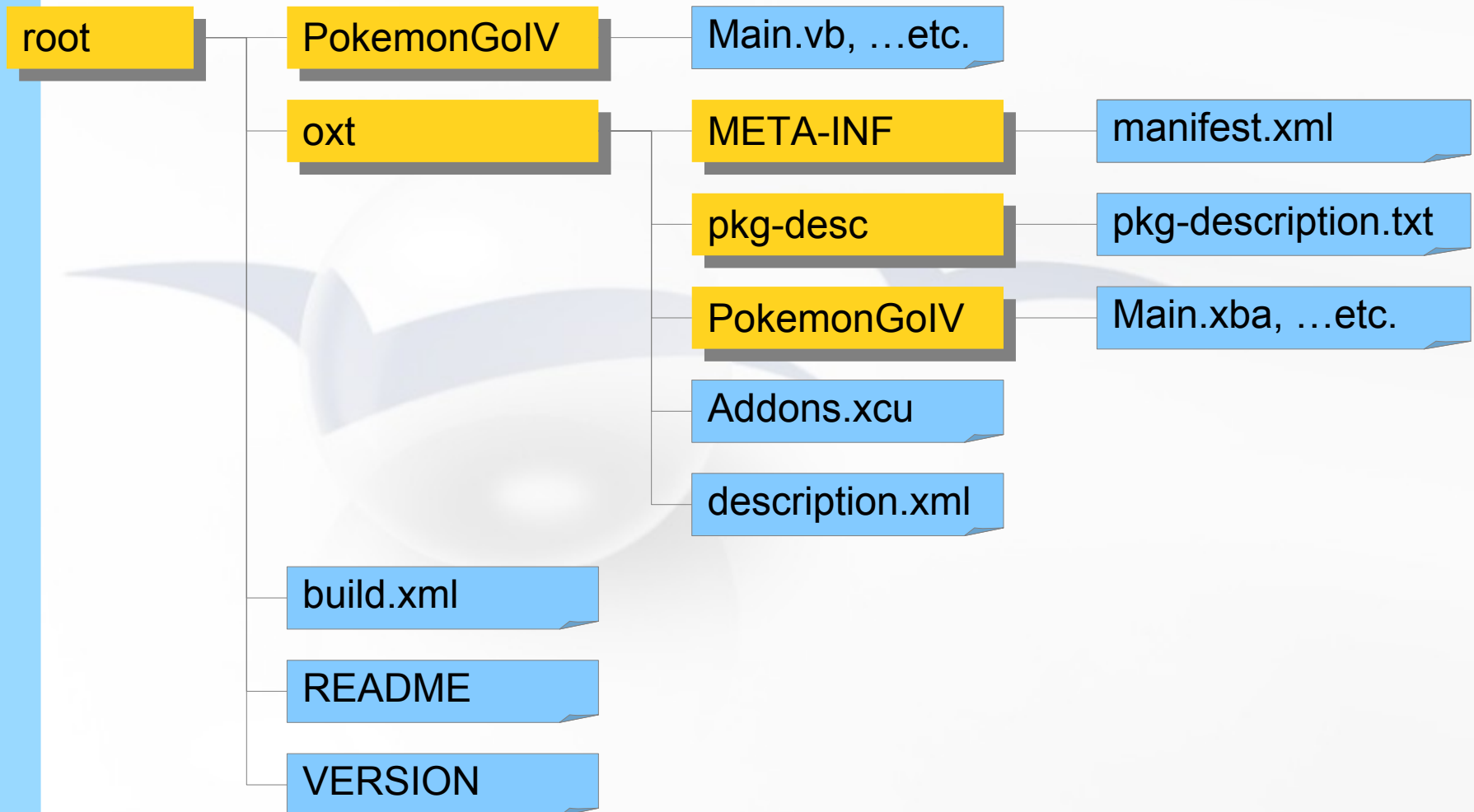
Pokémon GO IV Calculator

- It is entirely in my  **Dropbox** folder.
 - I work seamlessly on my PC and my laptop.
 - I do not worry if my hard disk dies.
- I use  **git** for version control.
- I host my project on **GitHub**.

Pokémon GO IV Calculator

- It is entirely in my  **Dropbox** folder.
 - I work seamlessly on my PC and my laptop.
 - I do not worry if my hard disk dies.
- I use  **git** for version control.
- I host my project on **GitHub**.
- I use  with a `build.xml` and a fixed project template to build and release.

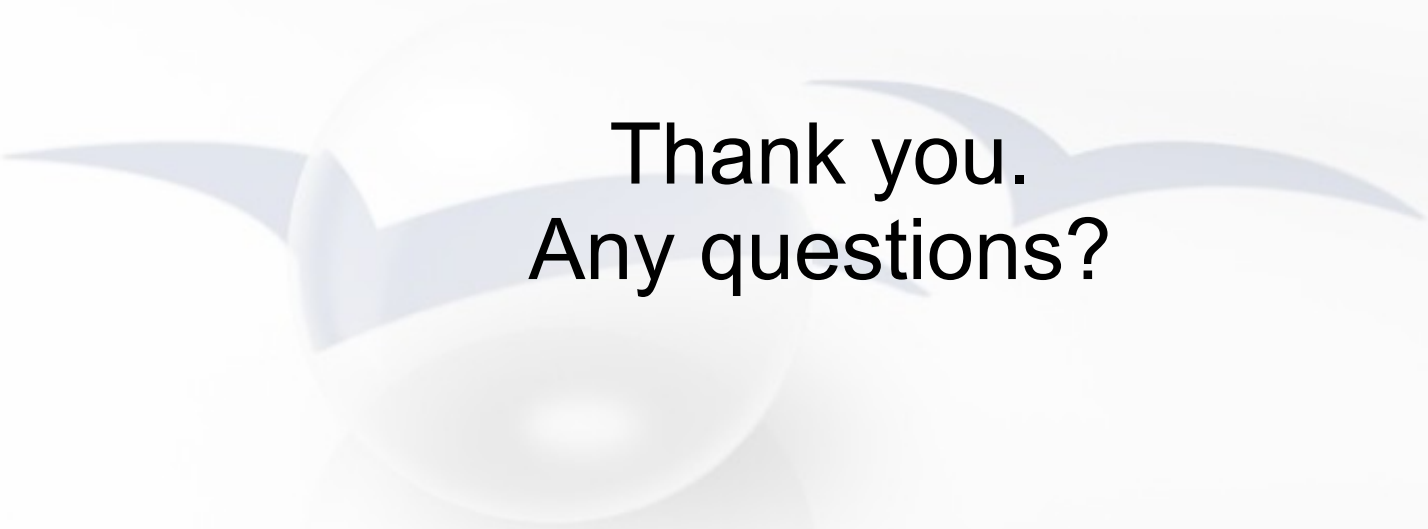
Pokémon GO IV Calculator Project Structure



Try obasync!

PyPI: <https://pypi.python.org/pypi/obasync>

GitHub: <https://github.com/imacat/obasync>



Thank you.
Any questions?