# Contributing

If you discover issues, have ideas for improvements or new features, or

want to contribute a new module, please report them to the

[issue tracker][1] of the repository or submit a pull request. Please,

try to follow these guidelines when you do so.

## Issue reporting

\* Check that the issue has not already been reported.

\* Check that the issue has not already been fixed in the latest code

(a.k.a. `master`).

\* Be clear, concise and precise in your description of the problem.

\* Open an issue with a descriptive title and a summary in grammatically correct,

complete sentences.

\* Include any relevant code to the issue summary.

## Pull requests

\* Use a topic branch to easily amend a pull request later, if necessary.

\* Write good commit messages.

\* Use the same coding conventions as the rest of the project.

\* Ensure your edited codes with four spaces instead of TAB.

\* Please commit code to `dev` branch and we will merge into `master` branch in future.

### Some suggestions for developing code for this project

#### Speed up build

\* Use `ccache`.

\* Pre-build by `make build -j`. Then if you do no modification on files in dir `core`, just use `scripts/get.sh \_\_local\_\_ \_\_install\_only\_\_` to quickly install.

\* Use a real xmake executable file with environment variable `XMAKE\_PROGRAM\_DIR` set to dir `xmake` in repo path so that no installation is needed.

#### Understand API layouts

\* Action scripts, plugin scripts and user's `xmake.lua` run in a sandbox. The sandbox API is in `xmake/core/sandbox`.

\* Utility scripts run in a base lua environment. Base API is in `xmake/core/base`

\* Native API, which includes the lua API and the xmake ext API, is written in C in `core/src/xmake`

For example, to copy a directory in sandbox, the calling procedure is: `sandbox\_os.cp()` -> `os.cp()` -> `xm\_os\_cpdir()` -> `tb\_directory\_copy()`

## Financial contributions

We also welcome financial contributions in full transparency on our [sponsor](https://xmake.io/#/about/sponsor).

Anyone can file an expense. If the expense makes sense for the development of the community, it will be "merged" in the ledger of our open collective by the core contributors and the person who filed the expense will be reimbursed.

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??????[issues][1]???????????????????(pull request).

## ????

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[1]: https://github.com/xmake-io/xmake/issues