Contributing to PARI/GP
A tutorial

A. Page

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08/01/2024

Reporting a bug

Doctesting

Contributing code

Before reporting the bug

- ▶ Check if the bug has already been reported: go to
  https://pari.math.u-bordeaux.fr/Bugs/ or click
  on "Bugs" on the main page of the PARI website.
- ▶ Make sure you can reproduce the bug.
- ▶ It helps if you can find a small example.

Sending the report

- ▶ Send an email to submit@pari.math.u-bordeaux.fr
- ▶ Use a clear and descriptive Subject.
- ▶ Start your email by a pseudo-header:

  ```
  Package: pari
  Version: 2.16.1
  ```

  (or modify as appropriate).

- ▶ Describe the bug:
  - ▶ Include all the steps needed to reproduce the problem.
  - ▶ Include the error messages.
  - ▶ Describe the expected behaviour.
- ▶ Important: a single problem per bug report!

What is doctesting?

Reviewing the documentation of GP functions:

- ▶ Is the documentation understandable?
- ▶ Does the documentation correspond to what the function does?
- ▶ Do the examples work?
- ▶ Propose improvements to the documentation.

How to improve the documentation

Option A: send us an email describing the improvement.

Option B (preferred): send us a patch.

Creating a patch

This assumes you are using a git distribution of PARI.

1. Open the file
   `src/functions/<section>/<function>`
2. Edit the paragraphs "Help:" (short help, plain text) and "Doc:" (long help, tex + Karim's macros).
3. `make install-doc` (check help)
4. `git commit -a` and write a commit message
5. `git format-patch HEAD~` creates a file `xxx.patch`.
6. Send us the file. Thank you!

Important: a single function per patch!

Modifying the documentation of a section

You can also review and improve the introductory paragraph of a section:

`src/functions/<section>/HEADER`

Can I contribute code to PARI/GP?

Yes! You do not need to write library code yourself.
We can convert a GP script into C and include it in PARI/GP.

How to choose my first contribution?

- ▶ A single function (the implementation can use several).
- ▶ In an area that you are comfortable with.
- ▶ Part of a group of functions that already exist?
- ▶ Something that you already know how to do or you know a good reference for (not research).

What should I provide?

- ▶ Your GP implementation.
- ▶ A description of the functionality (text or latex).
- ▶ Some examples.
- ▶ Tests.

Thank you!