pdb Python debugger

CONCEPTS

Command names are written like s(tep): type the short part or the whole word. An empty line repeats the last command (except list, which continues).

Start breakpoint(), -m pdb
↓ stops
(Pdb) prompt frame, locals
↓ look
Inspect p, pp, w, ll
↓ move on
Resume n, s, r, c

Anything that is not a pdb command runs as Python in the current frame. Prefix ! when a name clashes with a command: !n = 1, !c.

START DEBUGGING

breakpoint()
Drop into pdb at this line

import pdb; pdb.set_trace()
Same, the pre-3.7 way

python -m pdb *<script> <args>*
Run a script under pdb from its first line

python -m pdb -c continue *<script>*
Run freely, stop only on a crash

PYTHONBREAKPOINT=0
Make every breakpoint() a no-op

AFTER A CRASH

import pdb; pdb.pm()
Post-mortem on the last uncaught exception

pytest --pdb
Open pdb on every failing test

pytest -x --pdb
Debug the first failure, then stop the run

STEP AND RUN

n(ext)
Run the line, stepping over calls

s(tep)
Run the line, stepping into calls

STEP AND RUN (cont.)

r(eturn)
Run until the current function returns

c(ontinue)
Run until the next breakpoint

unt(il)
Run to a higher line: leaves a loop

q(uit)
Leave pdb and abort the program

STACK

w(here)
Show the stack, newest frame at the bottom

u(p) / d(own)
Select the caller / callee frame

a(rgs)
Arguments of the current function

BREAKPOINTS

b(reak) *<line>*
Break at a line of the current file

b *<file>:<line>*
Break at a line of another file

b *<func>*
Break at the first line of a function

b *<line>*, *<cond>*
Break only when the condition is true

b
List breakpoints with hit counts

cl(ear) *<n>* **[***<n>* **...]**
Delete breakpoints by number

INSPECT

p *<expr>*
Print an expression

pp *<expr>*
Pretty-print it (dicts, nested data)

display *<expr>*
Show it whenever it changes at a stop

l(ist)
11 lines around here, again continues

ll
Whole source of the current function