

table of contents

manifesto..... 6-7

① first steps

preserve the crime scene	9
read the error message	10
reread the error message	11
reproduce the bug	12
inspect unreproducible bugs	13
identify one small question	14
retrace the code's steps	15
write a failing test	16

② get organized

brainstorm some suspects	18
rule things out.....	19
keep a log book	20
draw a diagram	21

③ investigate

add lots of print statements	23
use a debugger	24
jump into a REPL	25
find a version that works	26
look at recent changes	27
add assertions everywhere.....	28
comment out code	29
analyze the logs	30

④ research

read the docs	32
find the type of bug	33
learn one small thing	34
read the library's code	35
find a new source of info	36

⑤ simplify

write a tiny program	38
one thing at a time	39
tidy up your code	40
delete the buggy code	41
reduce randomness	42

⑥ get unstuck

take a break	44
investigate the bug together	45
timebox your investigation.....	46
write a message asking for help... 47	47
explain the bug out loud	48
make sure your code is running	49
do the annoying thing	50

⑦ improve your toolkit

try out a new tool	52
types of debugging tools	53
shorten your feedback loop	54
add pretty printing	55
colours, graphs, and sounds	56

⑧ after it's fixed

do a victory lap	58
tell a friend what you learned.....	59
find related bugs	60
add a comment	61
document your quest	62