L3 GDB MACROS

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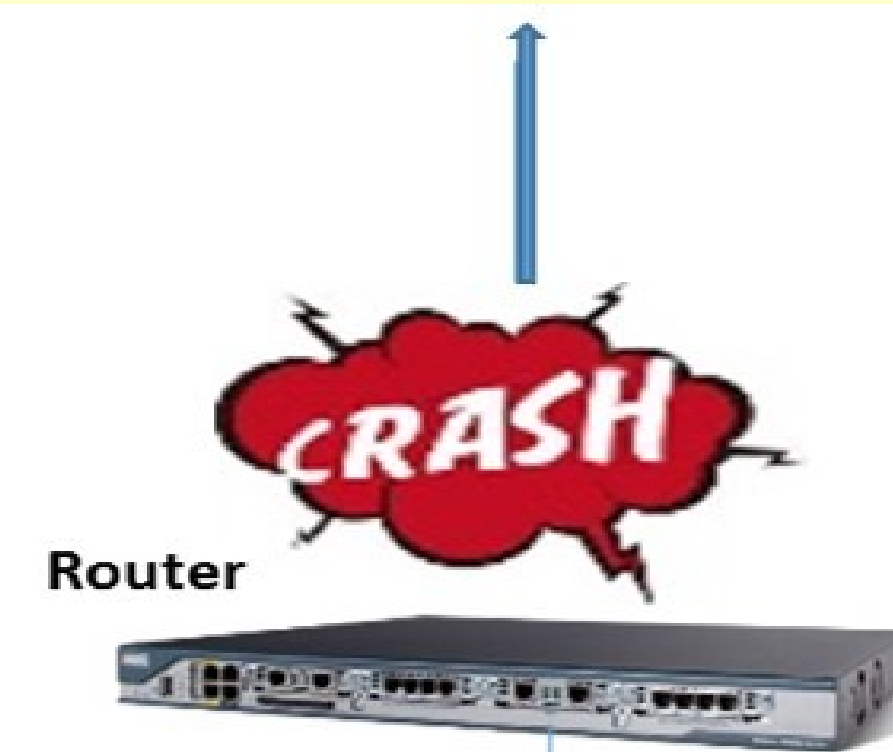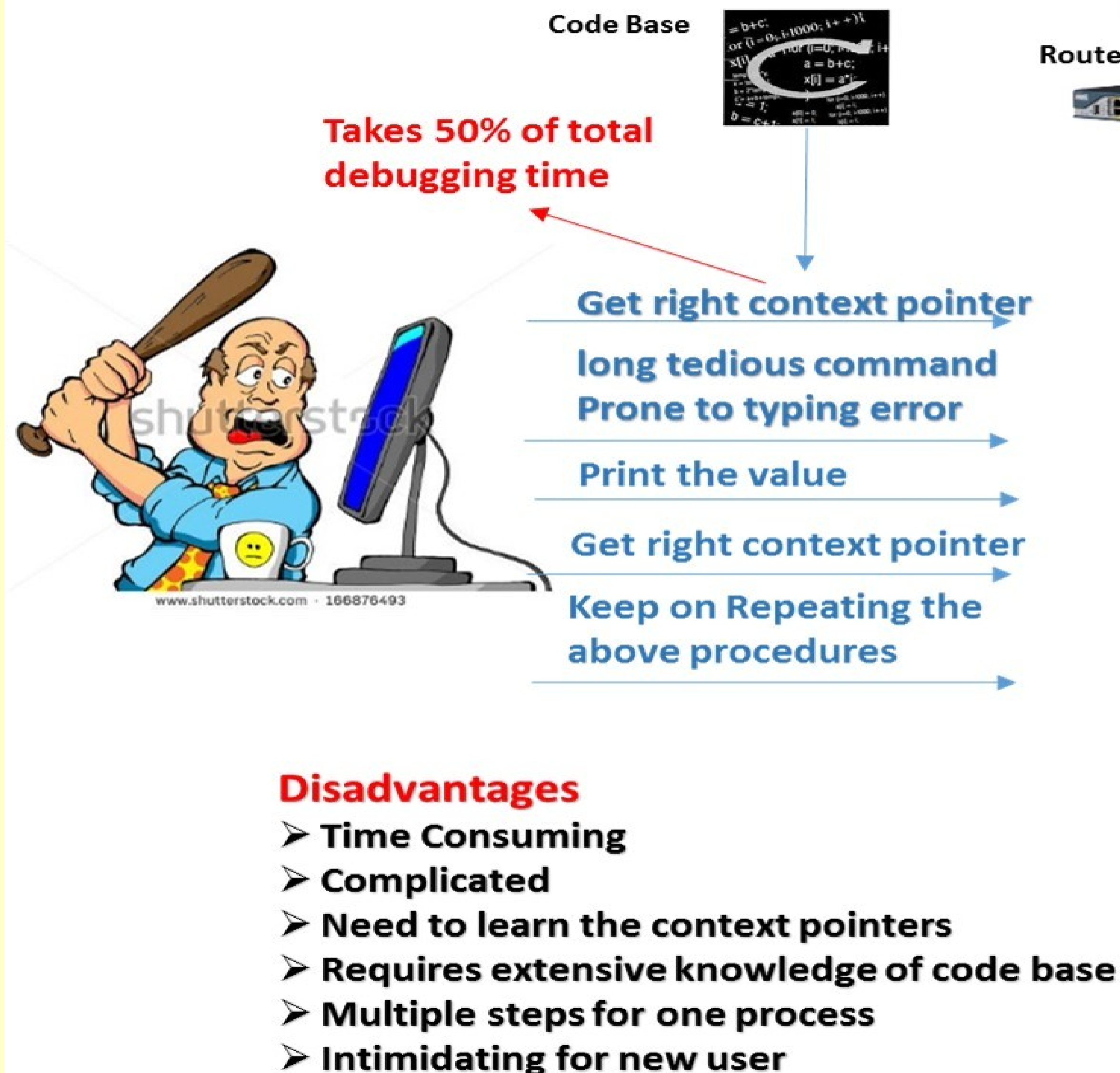Manager : Amit Nigam(anigam@cisco.com)
Mentor: Shiv Kumar (shikumar@cisco.com)
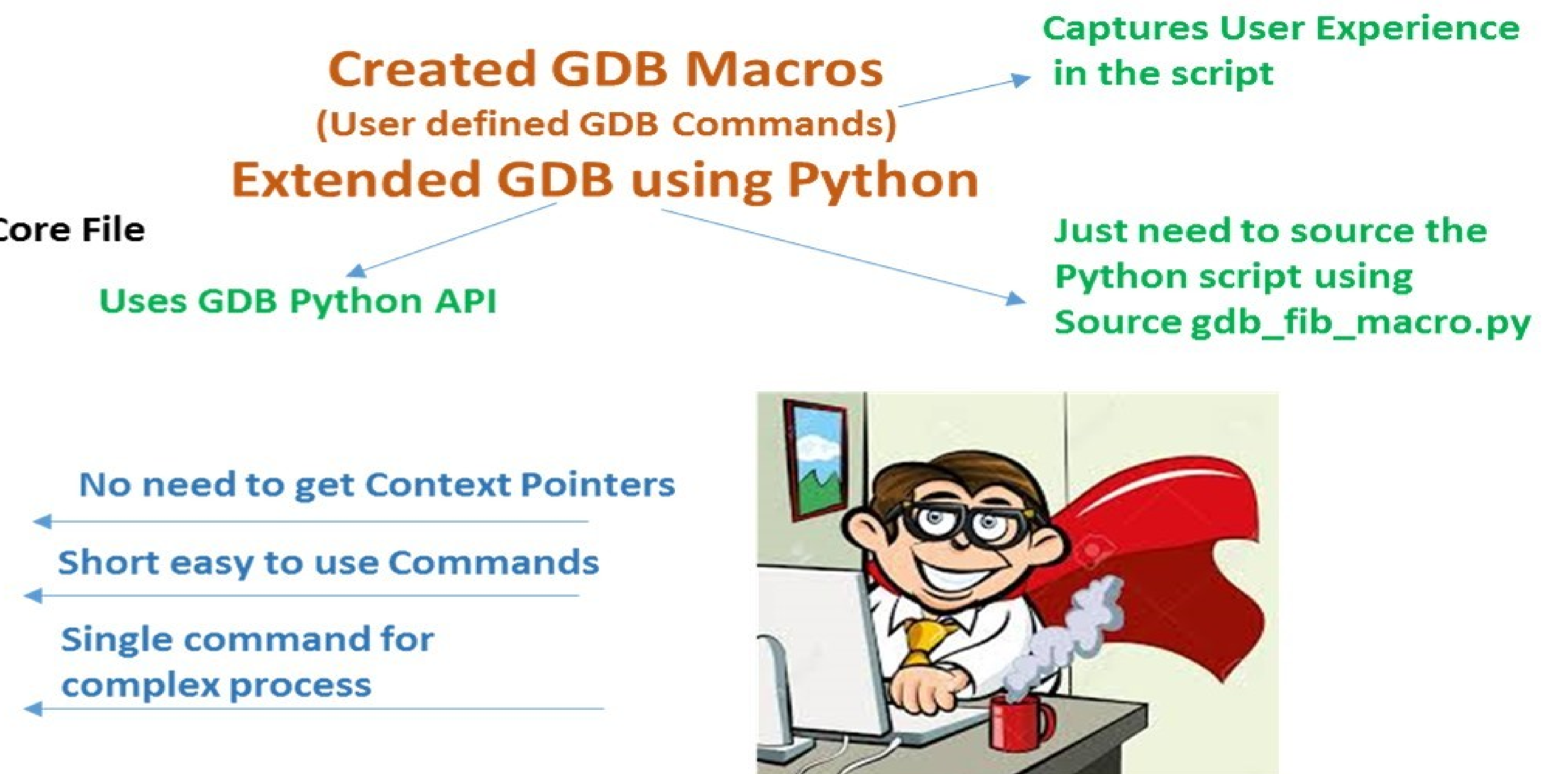
CISCO

Debugging with GDB Current Scenario

Debugging with GDB Macros Improved Scenario

Code Base

CRASH

Router

Takes 50% of total debugging time

Generates Core File

Created GDB Macros
(User defined GDB Commands)
Extended GDB using Python

Captures User Experience in the script

Uses GDB Python API

Just need to source the Python script using Source gdb_fib_macro.py

Get right context pointer

long tedious command
Prone to typing error

Print the value

Get right context pointer

Keep on Repeating the above procedures

FIB
PI
HAL
Gcplane
Engine

No need to get Context Pointers

Short easy to use Commands

Single command for complex process

Disadvantages
➢ Time Consuming
➢ Complicated
➢ Need to learn the context pointers
➢ Requires extensive knowledge of code base
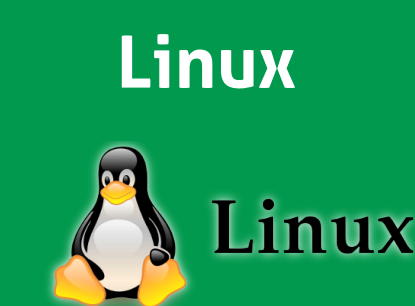➢ Multiple steps for one process
➢ Intimidating for new user

Advantages
➢ Speedy
➢ Easy to use
➢ No need to look in to the code to get right context pointers
➢ Single command for complex process
➢ Simplified

Use Cases

Router Crash Debugging

Memory Corruption Handling

Features Verification

Learning Experience

GDB	Python	C	Linux	API Integration,	Debugging
GDB The GNU Project Debugger	python	C PROGRAMMING	Linux	API Application Programming Interface	

About Me
Study:
Computer Science Graduate Student
San Jose State University
Career Interest :
Software Programming
Machine Learning
Security
Hobbies:
Biking, Hiking, Cooking, Movies