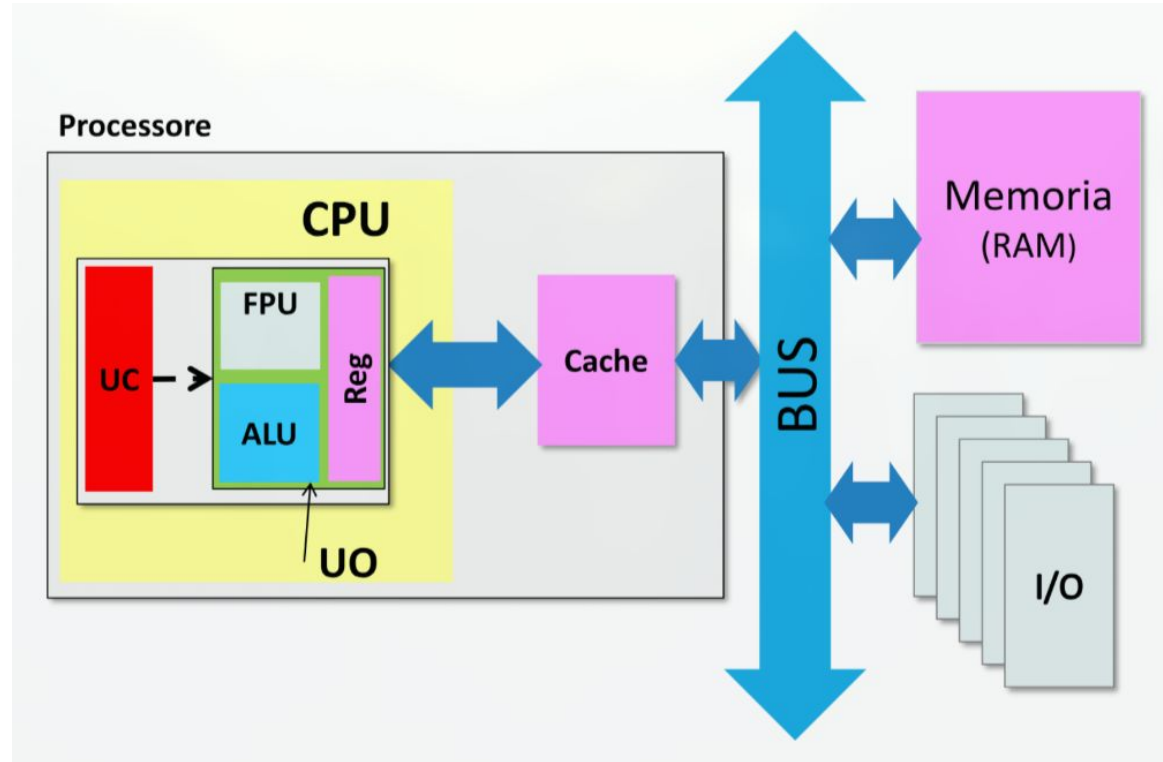


Computer Architecture 101



CPU Instructions

- **Data handling and memory operations:**

- `MOV R2, R1`

- **Arithmetic and logic operations:**

- `ADD R3, R2, R1`

- **Control flow operations:**

- `CALL myFunction`

- `JMP LAB_0024f2dc`

- `JZ LAB_002514f0`

R1

R2

R3

LABEL:

`ADD R3, R2, R1`

...

`MOV R1, 0x1`

`MOV R2, 0x2`

`JMP LABEL`

CPU Registers x86-64

- Integer return values are returned in **RAX**.

Monikers					Description
64-bit	32-bit	16-bit	8 high bits of lower 16 bits	8-bit	
RAX	EAX	AX	AH	AL	Accumulator
RBX	EBX	BX	BH	BL	Base
RCX	ECX	CX	CH	CL	Counter
RDX	EDX	DX	DH	DL	Data (commonly extends the A register)
RSI	ESI	SI	N/A	SIL	Source index for string operations
RDI	EDI	DI	N/A	DIL	Destination index for string operations
RSP	ESP	SP	N/A	SPL	Stack Pointer
RBP	EBP	BP	N/A	BPL	Base Pointer (meant for stack frames)
R8	R8D	R8W	N/A	R8B	General purpose
R9	R9D	R9W	N/A	R9B	General purpose
R10	R10D	R10W	N/A	R10B	General purpose
R11	R11D	R11W	N/A	R11B	General purpose
R12	R12D	R12W	N/A	R12B	General purpose
R13	R13D	R13W	N/A	R13B	General purpose
R14	R14D	R14W	N/A	R14B	General purpose
R15	R15D	R15W	N/A	R15B	General purpose

(https://wiki.osdev.org/CPU_Registers_x86-64#General_Purpose_Registers)

What is PwnAdventure?

- Pwn Adventure is an open-world MMORPG that is intentionally vulnerable to all kinds of silly hacks!
- The objective of the game is to collect flags that are stored in treasure chests all around the map.
- Most of the quests to get to the chests are impossible to finish unless you cheat!



Troubleshooting Guide

- If you have any problems with your PwnAdventure installation, check out this little guide I made :)



(<https://rickastley.co.uk>)

Now try hacking it yourself!

- Try to implement a hack to be able to “fly”