

# Bilal Eddinaoui

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## EDUCATION

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**1337 Coding School**

*Computer Science*

*Khouribga, Morocco*

## PROJECTS

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### [MetallC64](#) - Emulator of the Commodore 64 home computer (C64) - C

- Implemented complete CPU emulation, memory management, hardware timing simulation with partial accuracy.
- Developed a custom debugger which lets you view the contents of RAM, VIC-II registers, CIA 1 and 2 registers
- Ported into the web using WebAssembly: [MetallC64-Web](#)

### [Ft nmap](#) - Ports scanning tool - C

- Support the SYN, ACK, FIN, NULL, XMAS, and UDP scans
- Able to identify services by comparing ports and transport protocols to the NMAP services-database
- Provided a set of options to Customize scan behavior like specifying custom TCP flags combinations

### [Trc Route](#) - Network traceroute utility - C

- Developed a network diagnostic tool to trace the route packets take to reach a specified destination.

### [S ping](#) - Network ping utility - C

- Developed a network diagnostic tool to test network connectivity by sending ICMP echo requests.

### [WebServ](#) - HTTP/1.1 web server - C++

- Capable of handling GET, POST and DELETE requests using an event-driven architecture with Kqueue.
- Static file serving and dynamic content generation using CGI with support of (php, py, js, pl, sh) file extensions.
- Support for cookies and session management with two dynamic applications in C++ and Python as examples.

### [MiniShell](#) - Unix Shell - C

- Provided basic shell features such as command execution, piping and redirection.

### [6502 CPU Emulator](#) - Emulator of the MOS 6502 8-bit CPU - C

- Fully supports all 151 instructions, 13 addressing modes, and cycle accuracy.
- Added visualisation using the Ncurses library, allowing for real-time observation of the CPU behavior.

### [Ft Transcendence](#) - Online Multiplayer Gaming Platform - TypeScript, Python

- Capable of running multiple games between different users concurrently using Django.
- Offers Complete Users management system with three different authentication methods.
- All run on top of docker using multiple containers for each service.

### [Trading-Client](#) - High-Performance Trading System - C++

- Built a real-time order execution and management system for crypto trading.
- Implemented WebSocket-based market data streaming.
- Used the Deribit API to retrieve market data and execute trades.

## SKILLS & INTERESTS

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- **Skills:** Software Development, C, C++, DevOps, Docker, Full Stack Web Development, JavaScript, Python, Django, Version Control (Git), Object Oriented Programming, Network & system administration