

README — Build & Run SimpleOS (macOS, Apple Silicon)

This README documents the exact steps and commands used to build and run the SimpleOS operating system project on macOS using Homebrew, NASM, and QEMU.

1. Install Homebrew

Run the official installer:

```
/bin/bash -c "$(curl -fsSL https://raw.githubusercontent.com/Homebrew/install/HEAD/install.sh)"
```

2. Install NASM and QEMU

Required tools for assembling and running the OS:

```
brew install nasm qemu
```

Verify installation:

```
nasm --version
qemu-system-i386 --version
```

3. Navigate to Project Directory

Move into your OS project folder:

```
cd ~/desktop/my_os
ls
```

Expected files:

```
boot.asm boot.bin build.sh kernel.asm kernel.bin os.img
```

4. Make build.sh Executable

Run:

```
chmod +x build.sh
```

5. Run the Build Script

Execute the script that builds and launches your OS:

```
./build.sh
```

Expected output:

```
=====
 SimpleOS v2.0 Build System
=====
[1/4] Assembling bootloader...
    boot.bin created (512 bytes)
[2/4] Assembling kernel...
    kernel.bin created (8192 bytes)
[3/4] Creating disk image...
    os.img created (1.44 MB floppy image)
[4/4] Starting QEMU...
=====
OS is running! Try these commands:
HELP, LIST, CLEAR, ECHO, TIME,
DATE, COLOR, PEEK, POKE, REBOOT
=====
```