

Operating systems

MentOS Structure

Lecture 7 Part 1

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Computer Science : A recipe for **FUN**



Dictionary

fun

/fʌn/

noun

enjoyment, amusement, or light-hearted pleasure.



Dictionary

fun

/fʌn/

noun

~~enjoyment, amusement, or light-hearted pleasure.~~

Losing is fun!

Either way, it keeps you busy¹.

¹<http://dwarffortresswiki.org/index.php/Losing>



Winning isn't everything, but losing really sucks...



Introduction



MentOS

What? Where?

What...

MentOS (**Ment**oring **O**perating **S**ystem) is an open source educational operating system.

Where...

MentOS can be freely downloaded from a public github repository:

MentOS-team.github.io/MentOS





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Folder Structure



Folder Structure : Part 1

MentOS (root):

- **doc** : MentOS documentation.
- **files** : List of files visible from inside the OS, once executed.
- **initscp** : Program to prepare the **filesystem**.
- **third_party** : Assembly compiler (NASM).
- **MentOS** : The source code of the operating system.
 - **inc** : Headers.
 - **src** : Source codes.



Folder Structure : Part 2

src/inc:

- **descriptor_tables** : Descriptor tables (Global Descriptor Table (GDT), Local Descriptor Table (LDT), and Interrupt Descriptor Table (IDT));
- **devices** : FPU;
- **drivers** : Mouse, Keyboard, ATA;
- **elf** : dealing with executables (ELF);
- **fs** : filesystem in general (VFS, INITRD);
- **hardware** : PIC8259, Timer;
- **io** : Memory Mapped and Port IOs, and Video;
- **ui** : Shell and its commands;



Folder Structure : Part 3

src/inc:

- **libc** : General data structures and functions;
- **mem** : Memory management (Paging, heap, buddy system, zones);
- **process** : Processes and Scheduler;
- **sys** : System call data structures and functions user-side (i.e., unistd.c);
- **system** : **System Call mechanism** (i.e., syscall.c);

