"Online Training on Design a File System" by **Anil Kumar Pugalia**

+ ***Session 1: Introduction***
  - Linux Drivers EcoSystem
  - Block Drivers & Device File
  - File System Drivers – Use Case

+ ***Session 2: RAM Block Device***
  - Complete Flow
  - Geometry & Partitioning
  - Raw Block Device Access

+ ***Session 3: Design a File System***
  - Partition vs File System(s)
  - Experiments w/ vfat, ext2, …
  - Design Parameters (superblock, dentry, inode, ...)

+ ***Session 4: Creating a File System***
  - Detailing Design Parameters (superblock, dentry, inode, ...)
  - Creating a File System (mkfs)

+ ***Session 5: Browsing a File System***
  - Custom User Space App
  - Decoding Raw File System Contents

+ ***Session 6: Decoding the VFS & its Structures***
  - VFS Internals & System Call structures
  - mount, umount

+ ***Session 7: File System & Block Driver Interactions***
  - Fill Super & Block Requests
  - Data Access & Block Requests

+ ***Session 8: Decoding the Operations***
  - Create, List, Remove, Write, Read, Permissions
  - Various Block Sizes

+ ***Session 9: Mapping the System Calls***
  - lookup, create, unlink, …
  - write_inode, ...

+ ***Session 10: More System Calls***
  - statfs, rename, ...

+ ***Session 11: Extreme Condition Handling & Feature Additions***
  - Filename Length & Size
  - Seven File Types

+ ***Session 12: Wrap Up***
  - What Next?

Caution: All sessions are highly interactive & hands-on with PC

Hands-On Details

+ *Partitioning*
- RAM Disk
- Pen Drive

+ *File System Creation*
- vfat, ext2, custom mkfs

+ *RAW Dump Analysis*
- Super Block
- Inode Table & Inodes
- Data Block

+ *File System Browsing*
- Using a Custom App

+ *File System Operations*
- mount, cd, ls, ...

+ *Feature Addition(s)*
- df, mv, ...