

ENGR 301 *Project Management*

Source Control Management

Lecture 6 — git (Part I)

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Source Control Management

Today's lecture starts a discussion of Source Control Management (SCM), focussing on the practicalities of setting-up and using git.

SCM has been around for long time and is not complicated:

- systematically store previous versions of files;
- associate a specific version or revision identifier with each file;
- allow examination and retrieval of earlier versions.

Note: an SCM system is *not* a backup system!

Centralised vs. Decentralised

Initially *centralised*, SCM is now commonly *decentralised* or “*distributed*”.

Centralised: repository files served from a server;
local copies of files only.

Decentralised: entire repository copied locally;
local copies of files; there may be *many* remotes.

Note: decentralised SCM systems are often served centrally!

Why git? (“Why” indeed!)

Why are we learning git? A couple of reasons:

- it’s effectively the *only* SCM system

<https://bit.ly/3T9d2vA>

- it’s an *extremely* poor example of a SCM system

<https://bit.ly/4380I1r>

*“git is all spinning blades and mincers,
with no safety guards”*

— Dr. James Quilty,
School of Engineering and Computer Science.



How do I hate git? Let me count the ways...

From “10 things I hate about Git” by Steve Bennett:

- ① Complex information model
- ② Crazy command line syntax
- ③ Crappy documentation
- ④ Information model sprawl
- ⑤ Leaky abstraction
- ⑥ Power for the maintainer, at the expense of the contributor
- ⑦ Unsafe version control
- ⑧ Burden of VCS maintenance pushed to contributors
- ⑨ Git history is a bunch of lies
- ⑩ Simple tasks need so many commands

Source: <https://bit.ly/438OI1r>

git Voodoo

At this point in the lecture we drop to the command line for some practical examples of set-up and use of git, with little-to-no explanation or justification, following the examples in the lecture notes.