

### Centralized Version Control Systems - p. 11

Single server contains all versioned files

Several clients check out from central server

Centralized server represents single point of failure

### Distributed Version Control Systems - p. 12

Clients don't just check out the latest snapshot of the files

Every clone is really a full backup of all the data.

### What is Git - p. 14

**Snapshots** takes picture of what all files look like when committing and stores a reference to that snapshot

If files have not changed, only the previously saved file is linked

**Local Operations** operations only need local files and resources

entire history of the project on local disk

work can be continued when offline

**Integrity** files are checksummed and then referred to by that checksum

SHA-1 hash is used for checksumming

**SHA-1 hash** 40-character string composed of hexadecimal characters

calculated based on the contents of a file or directory

everything in Git database saved by hash value of its contents

**Adding data** actions only add data to database

once committed data loss is very difficult

### The three states of files - p. 16

**Modified** file changed but not committed to database yet

**Staged** modified file is marked to go into next commit snapshot

**Committed** data is safely stored in local database

### Main Sections of a git project - p. 17

**Working tree** single checkout of one project version

**Staging area** file with information about next commit

**Repository** metadata and object database

### Installing Git - p. 18

Most official build for Windows is available for download on the [Git website](#)

Git for Windows is separate from Git itself

### git config - p. 21

get and set configuration variables that control all aspects of how Git looks and operates

**global config file** values applied to every user on the system and all their repositories

git config --system

**user config file** values specific to user

git config --global

**local config file** file of current repository

git config --local

When looking for a configuration value, Git will start at the local level and bubble up to the system level.

**View settings** git config --list --show-origin

### First Time Setup - p. 22

**name** git config --global user.name "John Doe"

**email** git config --global user.email johndoe@example.com

**editor** git config --global core.editor emacs

**branch name** git config --global init.default-branch main

**settings** git config --list

**specific values** e.g. git config user.name

Git might read same configuration variables value from more than one file. Having unexpected values is possible.

### Getting Help - p- 24

git help <verb> command for seeing manpage

git <verb> --help equivalent command

git <verb> -h overview of available options for git commands

