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COSC220

The Missing Semester of Your CS Education

Version control systems (VCS) track changes in code and maintain a history of these changes to facilitate collaboration. Git is the most standard VCS used. Git uses a directed acyclic graph (DAG) of snapshots instead of keeping a linear history. This allows for easy connections between snapshots, seeing which snapshot came from which “parent”. This very much reminds me of a binary tree layout. All objects in Git are identified using their SHA-1 hash, including snapshots. This can be an issue because SHA-1 hashes are just 40 hexadecimal characters. Because of this, you can use “references” to name these objects. Git has a command-line interface that includes many different commands that take a little while to get used to.

Shell scripts are optimized for performing shell-related tasks such as creating command pipelines, saving results into files, and reading from standard input. Bash scripting is the most common type. Bash uses specific commands and symbols to perform specific tasks, but there are too many to list. Bash uses a variety of special variables to refer to arguments, errors, and more, which separates it from other scripting languages. Using command substitution, you can get the output of a command as a variable.