Amanda Gettings
Back End Software Developer – Pacific Cohort
Laura Webber
March 1, 2023

Week 1: Research Assignment

Prompt: *What is git? Why is it useful? What is the git workflow?*

According to Chacon, et al., git is a “distributed version control system designed to handle everything from small to very large projects with speed and efficiency.” Git is an incredibly useful developer tool as it is a free and open-source system – largely maintained by its community members, small & fast, provides storage backup for locally created code, maintains cryptographic integrity, offers a staging area, and the open-source nature allows developers from all the world to collaborate on projects. What really sets Git apart from other Software Configuration Management options, are the branching & merging features that allow developers to create & test features independently from each other *before* ever going live with the full code (Chacon, et al.).

Atlassian describes the git workflow as a "recipe or recommendation for how to use Git to accomplish work in a consistent and productive manner," as well as "Git workflows encourage developers and DevOps teams to leverage Git effectively and consistently." In other words, the fine print will vary based on the specific task at hand and the people performing said tasks, but the overall concept and process of code development would be the same overall process of: pull down changes to update your workspace, make changes, stage changes, take snapshot of changes, push changes to remote branch, merge branch into master branch - any of which can be done within mere moments, making the interaction smooth and simple (Chacon, et al.). There are several types of workflows already being utilized, Centralized, Feature Branch, Gitflow, and Forking (Atlassian). Businesses have also been known to mix and match parts from different workflow styles together to piecemeal what works for them, but it should ultimately enhance productivity and effectiveness for the project.

***Prompt**: What are the 8 primitive data types in Java? What makes them each unique? What values can they hold?*

Java is a statically typed programming language which means all variables must be declared by type and name before they can be used (Oracle). The 8 Primitive Data Types in Java are: byte, short, int, long, float, double, boolean, and char - each with their own unique purpose, parameters, limits, and uses (Oracle 2023). For example, 'byte', 'short', 'int', and 'long' are all integer data types that utilize whole-valued signed number(s) of various size(s) and can include alphanumeric combination(s); 'float' and 'double' are precision decimal data types and good for fractions and currency; 'char' is a single character, and a 'boolean' will only result in a true/false response (Fadatare). Most developers keep the 'string' data type near the primitive types as it allows for a *string of characters*. See Figure 1 below for more details.

Data Type	Description	Default	Size	Example Literals
Byte	Twos complement integer	0	8	(none)
Short	Twos complement integer	0	16	(none)
Int	Twos complement integer	0	32	-2, -1, 0, 1, 2
Long	Twos complement integer	0	64	-2L, -1L, 0L, 1L, 2L
Float	IEEE 754 floating point	0.0	32	1.23e100f, -1.23e-100f, .3f, 3.14F
Double	IEEE 754 floating point	0.0	64	1.23456e300d, -1.23456e-300d, 1e1d
Boolean	Two possible values: True/False	False	1	True, false
Char	Single character (Unicode)	\u0000	16	'a', '\u0041', '\101\, '\\', '\'', '\n', 'symbols'

Figure 1. Summarization of the eight primitive data types (Fadatare).

Works Cited

Atlassian. *Comparing Git Workflows: What You Should Know*, Creative Commons Attribution 2.5 Australia License, www.atlassian.com/git/tutorials/comparing-workflows#:~:text=A%20Git%20workflow%20is%20a,in%20how%20users%20manage%20changes. Accessed 1 Mar. 2023.

Chacon, Scott, et al. *Homepage*, Software Freedom Conservancy, git-scm.com/. Accessed 1 Mar. 2023.

---. "About git-scm.com." *Git*, Software Freedom Conservancy, git-scm.com/about. Accessed 1 Mar. 2023.

Fadatare, Ramesh. "Primitive Data Types in Java." *Java Guides*, 13 Oct. 2018, www.javaguides.net/2018/10/primitive-data-types-in-java.html. Accessed 1 Mar. 2023.

Oracle. *Primitive Data Types (The Java™ Tutorials > Learning the Java Language > Language Basics)*. Oracle, docs.oracle.com/javase/tutorial/java/nutsandbolts/datatypes.html. Accessed 1 Mar. 2023.