

# TECHNOLOGY



## Caltech

Center for Technology &  
Management Education

### Full Stack Java Developer

# TECHNOLOGY



Git



## Introduction to Git



# Learning Objectives

By the end of this lesson, you will be able to:

- 👁 Know what version controls are and how they are used
- 👁 Define version control systems and their uses
- 👁 List the types of version control systems
- 👁 Learn the importance of Git and GitHub in version control
- 👁 Explain why Git and GitHub are preferred over other control systems



# A Day in the Life of a Full Stack Developer

You are hired as a full-stack developer in an organization and have been assigned to an application development project. You, being the owner of the project, have decided to manage the source code of the project and maintain each change that happens in the code.

To do so, you would need a version control system, that is, Git or GitHub. You explore more about Git in detail and help your team members work with Git.

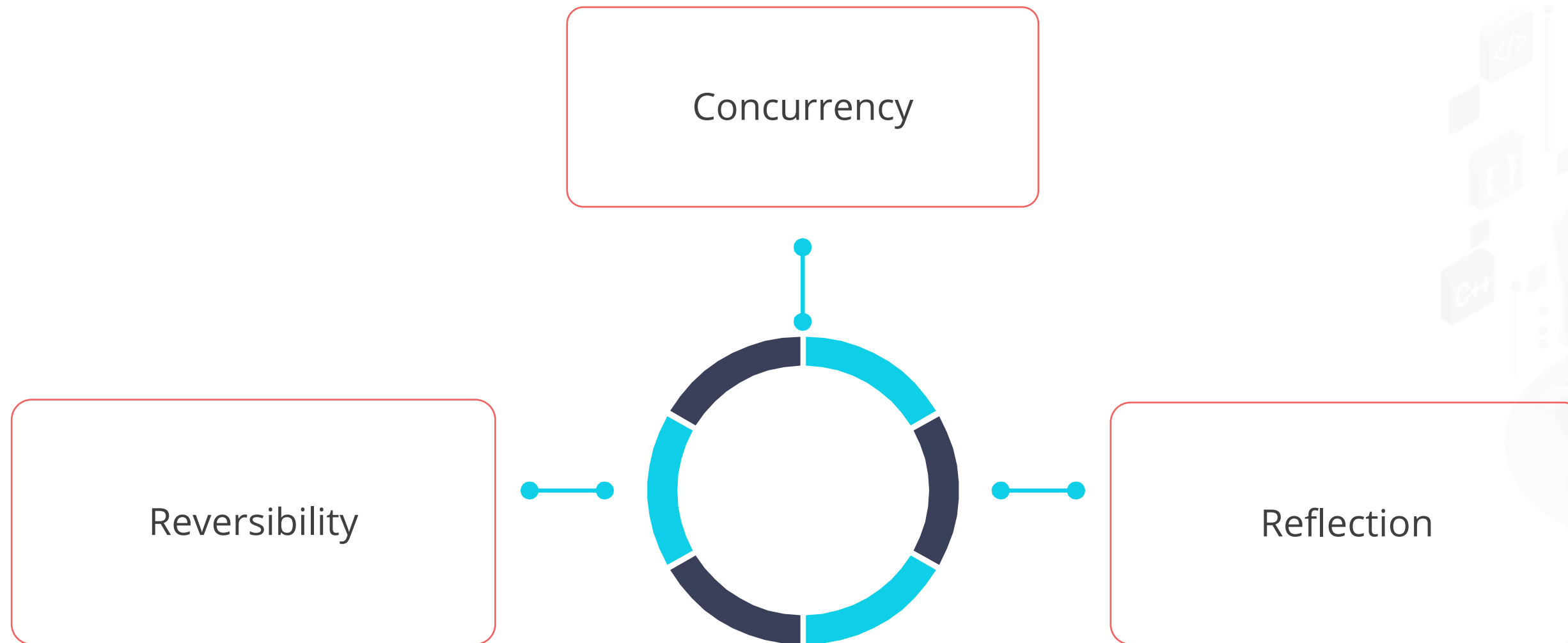




## Version Control Systems

# Version Control System

It refers to software designed to track and manage changes to a code. It offers:



# Reversibility

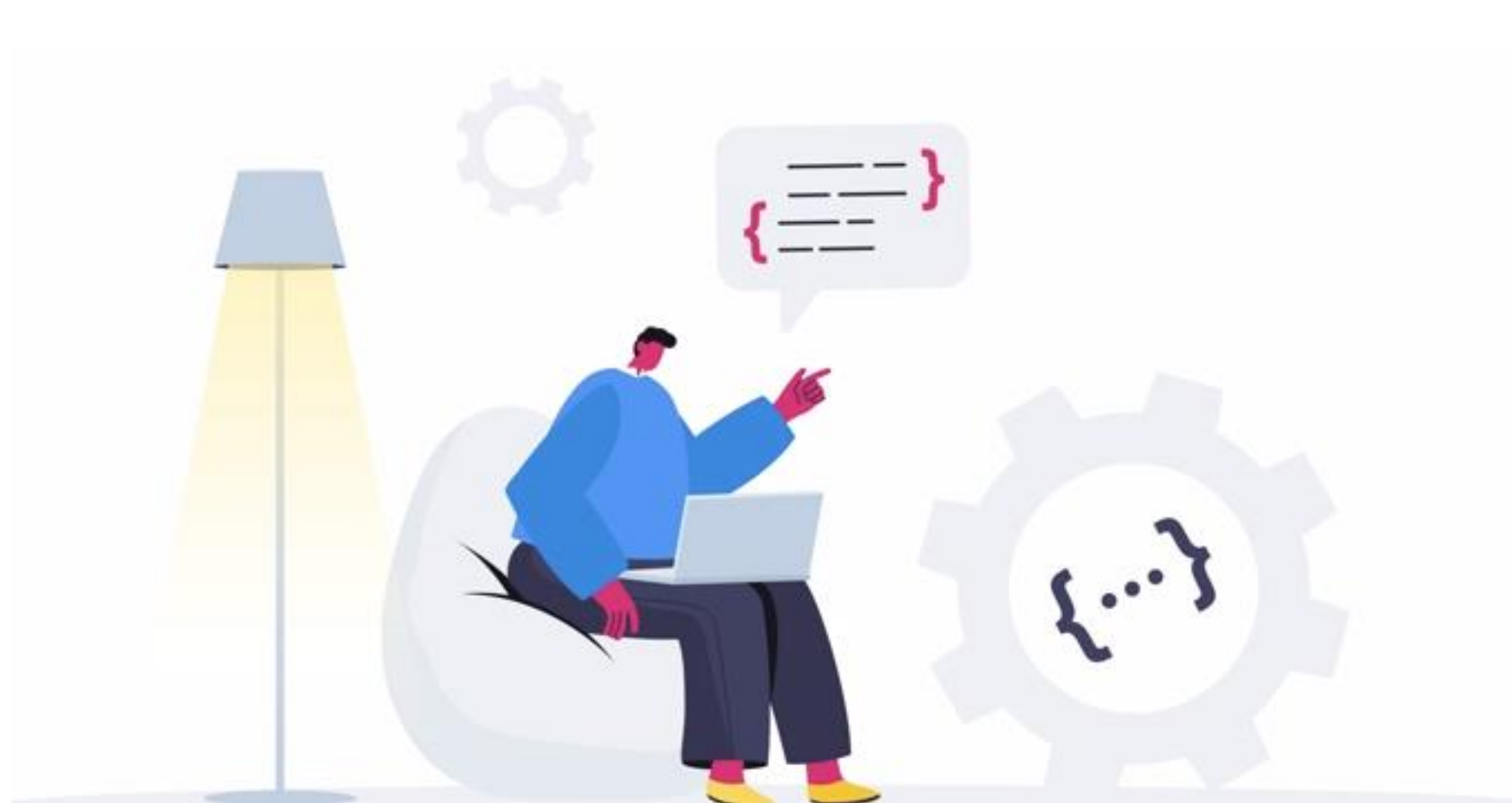
It allows VPC to restore any point in the history of the source code.





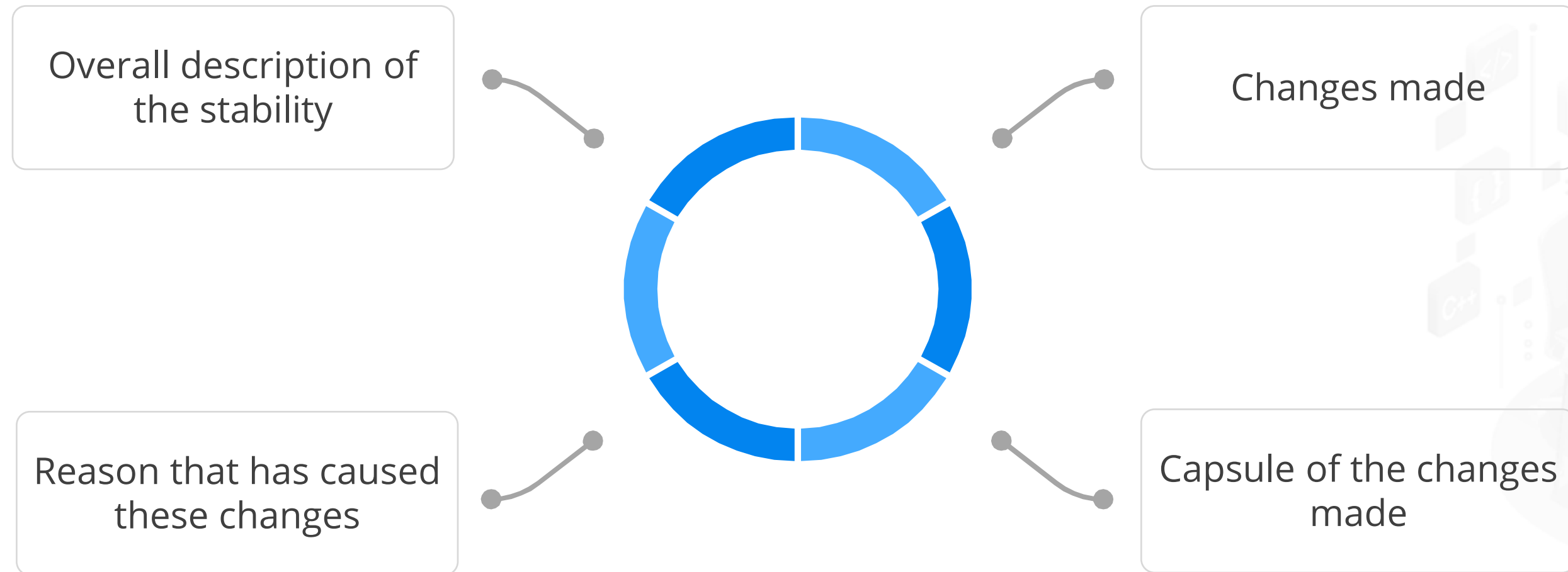
# Concurrency

It provides the ability to have many people work on or modify the same set of documents or collections of code.



# Reflection

It allows adding new explanations and studies about the:



## Types of Version Control Systems



# Types of Version Control Systems

## Version Control Systems



**01**

Centralized Version Control System (CVCS)

**02**

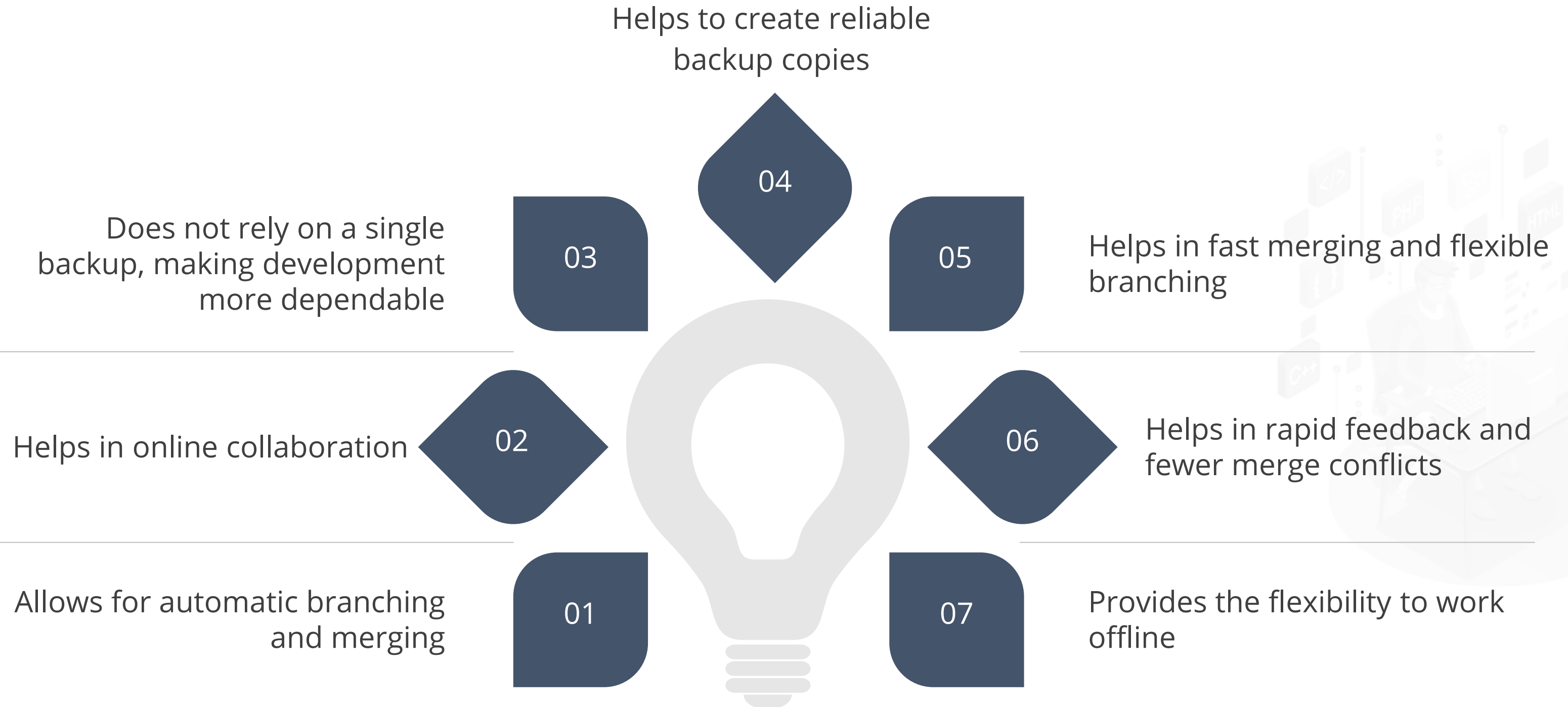
Distributed or Decentralized Version Control System (DVCS)

# Centralized Version Control System

It facilitates team collaboration by storing all files on a central server.



# Distributed Version Control System





# Distributed Version Control System

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Git is a distributed version control and version management system.

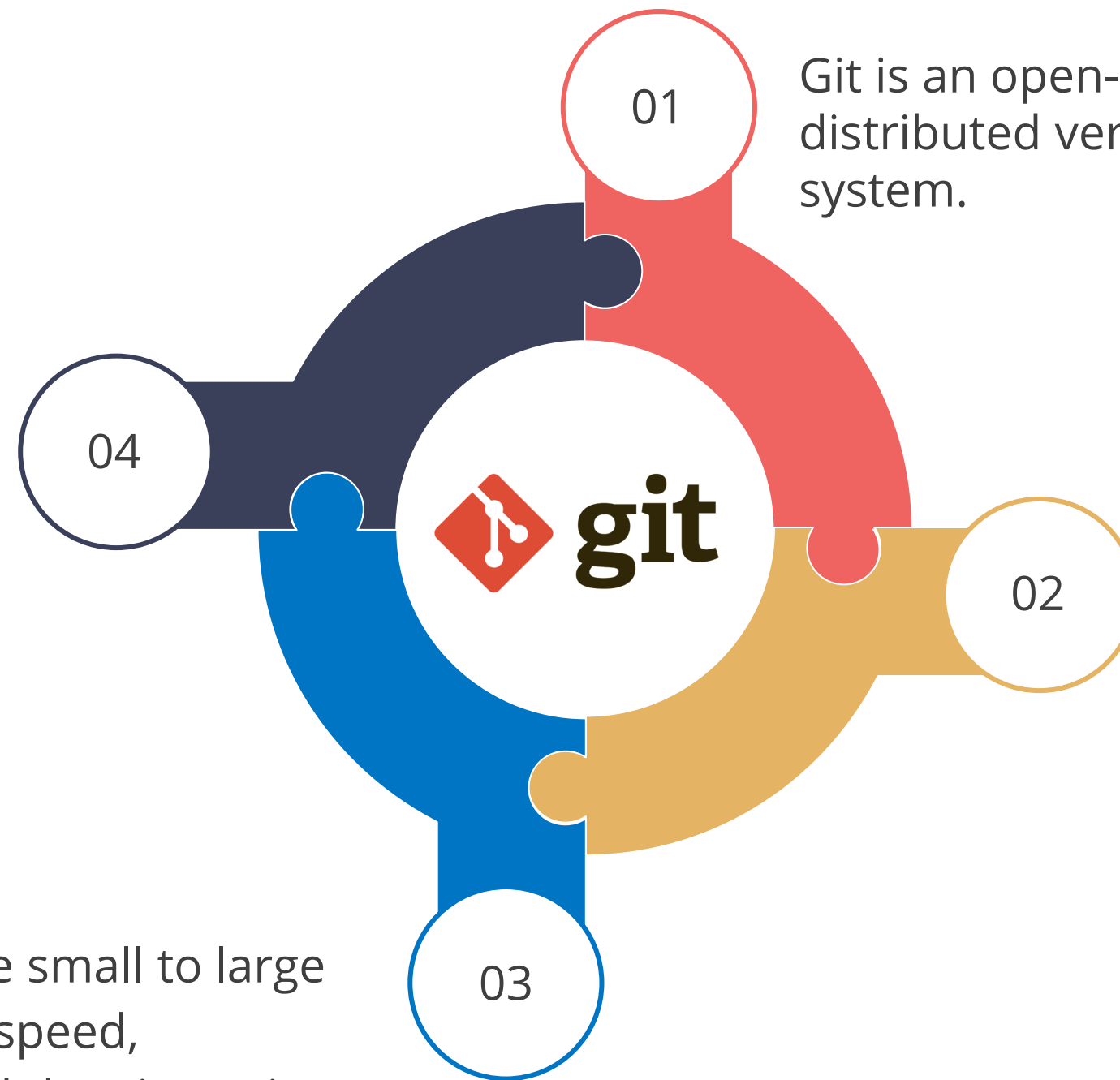


## What Is Git and GitHub?

# What Is Git and GitHub?

It supports code-distributed and non-linear workflows.

Git can handle small to large projects with speed, efficiency, and data integrity.



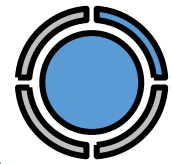
Git is an open-source and free distributed version management system.

GitHub provides internet hosting for software development and version control.

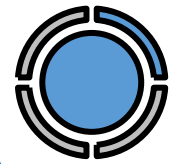




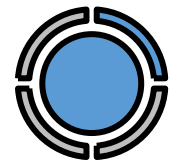
## Advantages of Git



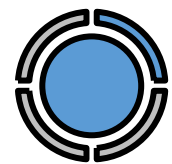
Helps the developers to track the changes and updates in the project



Allows teams to work collaboratively



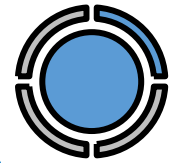
Is free and open source



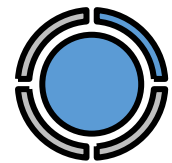
Reduces the runtime costs that come with other high-level languages



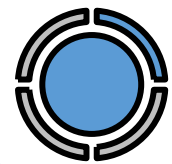
## Advantages of Git



Provides Implicit backup for data loss



Uses a standard cryptographic hash function to identify objects



Helps in easier branch management operation

## Key Takeaways

- Adopting agile embraces and boosts productivity.
- Agile methodologies and principles introduce the best practices for improving the quality of deliverables.
- Stakeholder engagement, prediction, transparency, etc., are a few of the benefits of using Agile.
- Adopting Agile makes the team more productive and responsible.





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**Thank You**