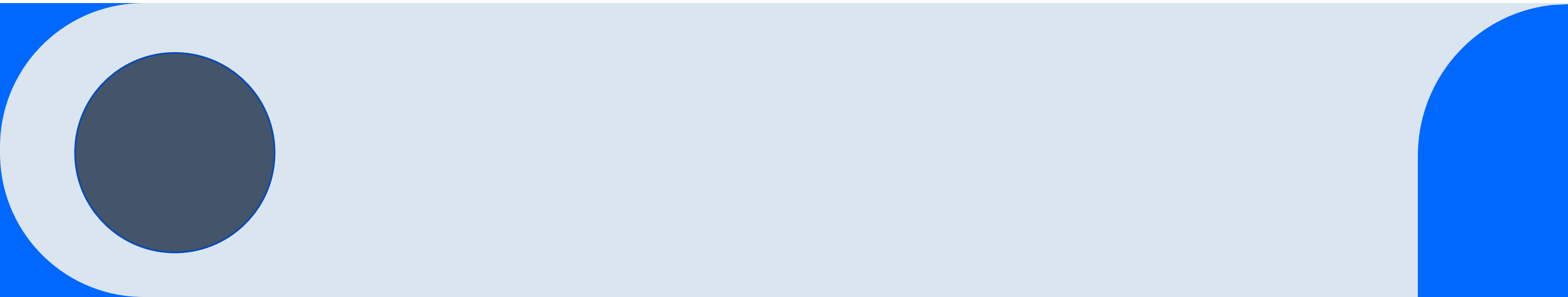


# **Git and GitHub: Essential Commands and Concepts**



# Introduction to Git and GitHub

## Introduction to Git and GitHub

- Git is a version control system for tracking changes in source code.
- GitHub is a hosting platform for Git repositories.
- They facilitate collaboration and version control in software development.



# What is a Git Repository?

## Understanding Git Repositories

- A Git repository is a collection of files under version control.
- It contains a complete history of all the changes made to the project.
- Differs from a regular directory as it includes a ``.git`` subfolder with the repository's history and configuration.



# Using `git clone`

## The `git clone` Command

- Used to copy a Git repository from a remote source, like GitHub.
- Clones the entire history and version of the files in the repository.
- Creates a local copy on your computer with its own .git directory.



# The `git add` Command

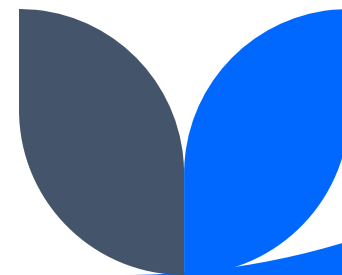
Using `git add` to Track Changes

- `git add` stages changes in files for commit.
- Helps in selectively adding file changes to the next commit.
- Files not added will not be included in the commit.

# The `git commit` Command

Committing Changes with `git commit`

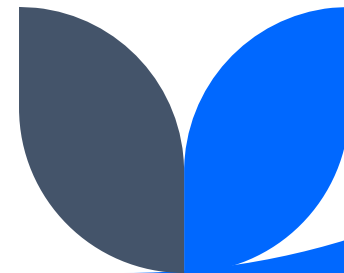
- `git commit` saves staged changes to the repository's history.
- Each commit has a unique ID and message describing the changes.
- It's a snapshot of your repository at a specific point in time.



# The `git push` Command

Pushing Changes with `git push`

- `git push` uploads local repository changes to a remote repository.
- Used to share your commits with others or backup your work.
- Essential for collaborative work in shared repositories.



# Summary

## Summary

- Git and GitHub are fundamental tools in modern software development.
- Commands like ``git clone``, ``git add``, ``git commit``, and ``git push`` are essential for managing code changes.
- Understanding repositories and these commands helps in effective collaboration and version control.

