

Introduction to Git: A Beginner's Guide

Version Control System for
Efficient Collaboration



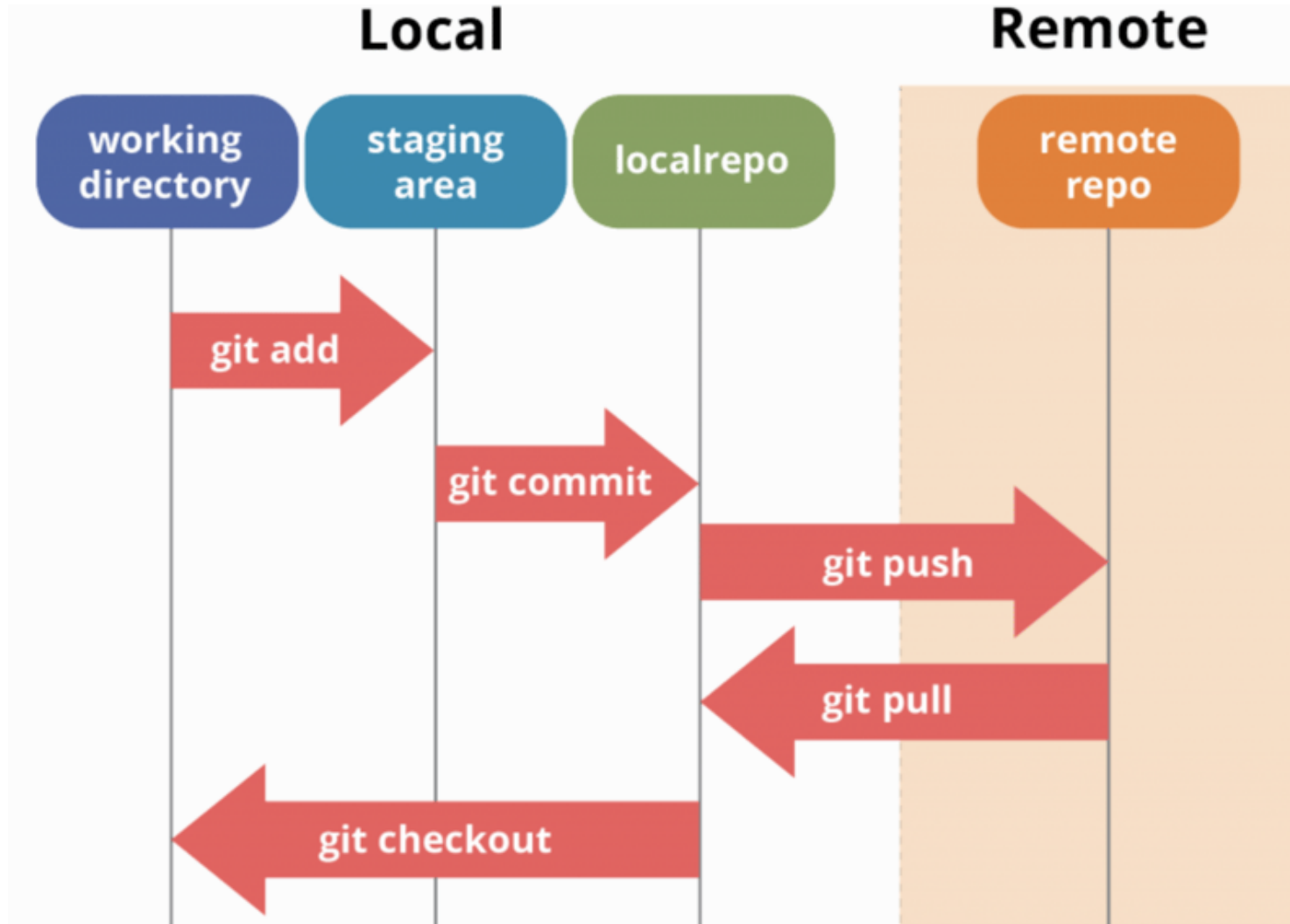
1. Understanding Version Control Systems (VCS)

- A Version Control System helps manage changes to source code over time.
- Git, created by Linus Torvalds in 2005, is a distributed VCS.
- Enables tracking revisions, reverting states, and efficient collaboration.

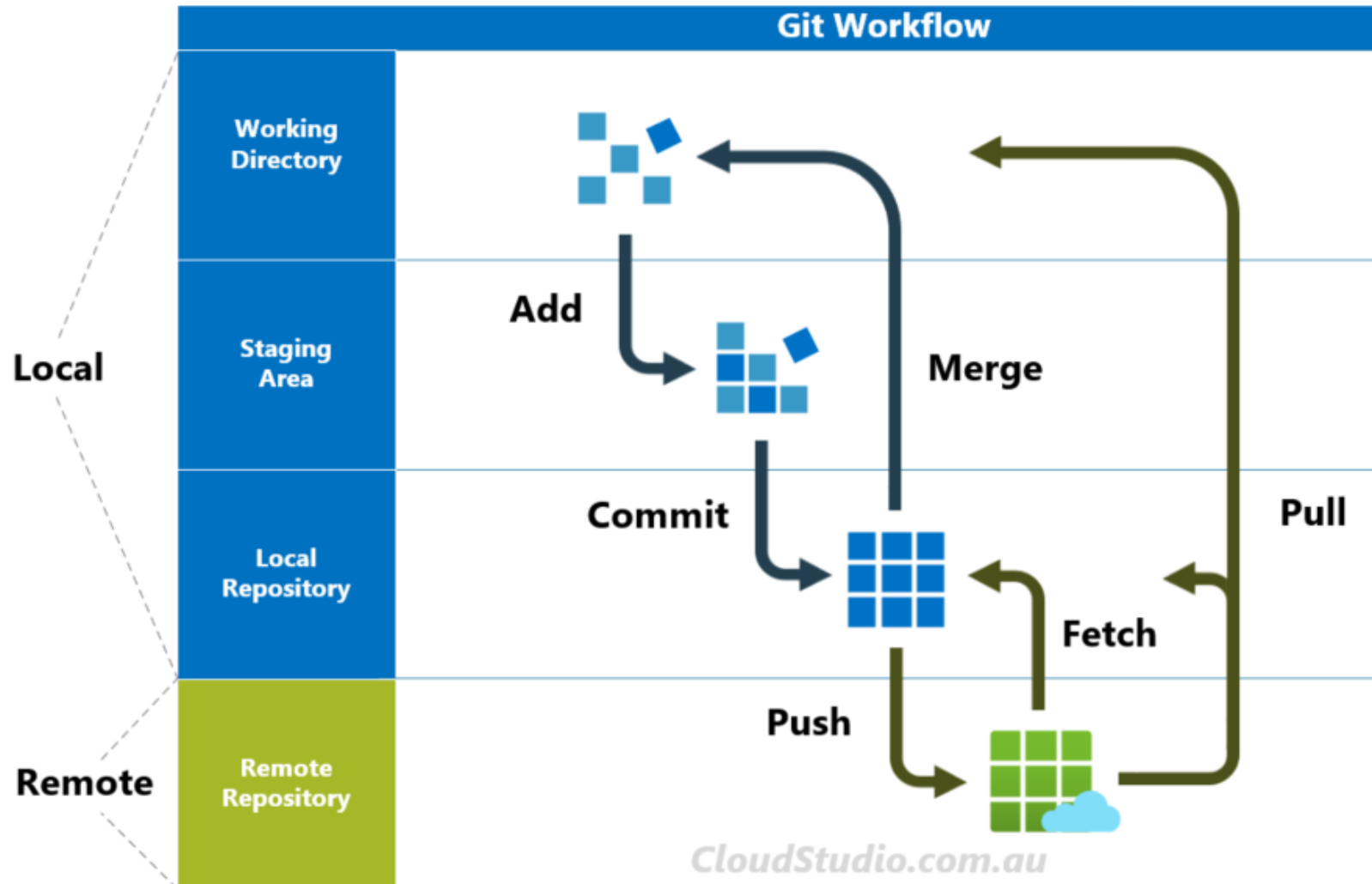
2. Key Concepts in Git

- **Repository (Repo):** Storage for your project and history.
- **Commit:** A snapshot of changes with a unique identifier.
- **Branch:** A parallel version of the repository.
- **Merge:** Integrating changes from one branch into another.
- **Clone, Pull, Push:** Working with remote repositories.

Git Workflow



Git Workflow



3. Installing Git

- **Windows:** Download from git-scm.com and install.
- **macOS:** Use Homebrew with 'brew install git'.
- **Linux:** Use your package manager (e.g., 'sudo apt-get install git').

4. Configuring Git

Set your username and email:

```
git config --global user.name 'Your Name'
```

```
git config --global user.email 'your.email@example.com'
```

Verify configuration with

```
git config --list
```

5. Basic Git Workflow

- Initialize a Repository: `'git init'`
- Add Files: `'git add filename'` Or `'git add .'`
- Commit Changes: `'git commit -m "Your commit message"'`
- View History: `'git log'`

6. Working with Branches

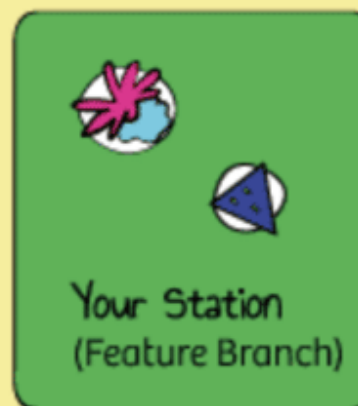
- Create a Branch: `'git branch branch-name'`
- Switch Branch: `'git checkout branch-name'`
- Merge Branches:
`'git checkout main' → 'git merge branch-name'`

RAMSAY'S KITCHEN (Remote Repo)



- ↑
1. GIT ADD
 2. GIT COMMIT -M
 3. GIT PUSH

TEST KITCHEN (Local Repo)



7. Collaborating with GitHub

- Clone Repository:

```
'git clone https://github.com/user/repo.git'
```

- Push Changes:

```
'git push origin branch-name'
```

- Pull Updates:

```
'git pull origin branch-name'
```

8. Best Practices

- Commit often with clear messages.
- Use branches for new features.
- Write descriptive commit messages.

9. Recommended Resources

- 'Pro Git' Book: git-scm.com/book/en/v2
- Atlassian Git Tutorials: atlassian.com/git/tutorials
- Codecademy: codecademy.com/learn/learn-git
- Coursera: coursera.org/learn/introduction-git-github
- freeCodeCamp Video:
youtube.com/watch?v=RG0j5yH7evk