

# Git\_FS\_1\_Harvey\_20230720

GIT

Training Clarusway

Pear Deck - July 20, 2023 at 9:40AM

## Part 1 - Summary

Use this space to summarize your thoughts on the lesson

## Part 2 - Responses

Slide 1



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## Slide 2

## Your Response

Did you finish pre-class work?



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Did you finish pre-class work?



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## Slide 3

In case of fire 

- ➊ 1. git commit
- ➋ 2. git push
- ➌ 3. leave building

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## Your Response



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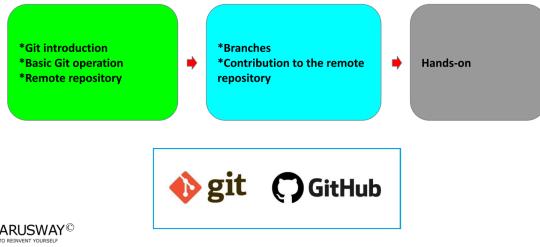
## Your Response



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## Slide 6

### Git Journey



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## Slide 7

### Table of Contents

- ▶ What is version control?
- ▶ What is Git?
- ▶ Basic Git Operations
- ▶ Remote Repository

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## Slide 8

### What do you know about Git? ➤

Let's discuss about Git



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### What is Git? ➤

**Git is a free, open source  
distributed version control system**



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### What's Version Control?

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## Your Response

### ▶ What's Version Control?



Students, write your response!

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### ► What's Version Control?

- ➔ Track changes
- ➔ Undo / Redo
- ➔ Time Travel
- ➔ Collaborative development
- ➔ Compare and Blame
  - ❖ What changed
  - ❖ When it changed
  - ❖ Why it changed
  - ❖ Who changed it

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## Slide 13

### ► Version Control Systems

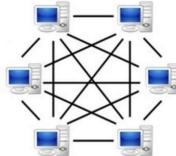
#### • Centralized

You need to be connected to the server



#### • Distributed

You can work while offline



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## Slide 14

### ► What's Version Control?

#### Your Daily Tasks

- **Create** things
- **Save** things
- **Edit** things
- Save the things **again**

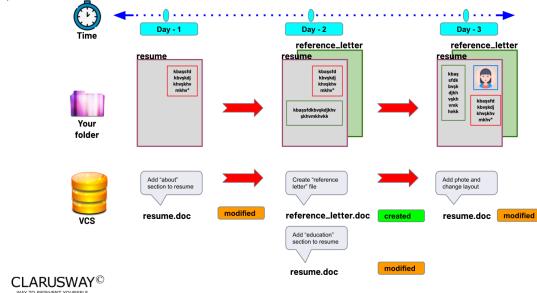
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## Slide 15

### ► What's Version Control?



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## Slide 16

### ► What's Version Control?



#### Version Control Systems (VCS)

- **Tracks** and **records** changes to files over time
- Can track any type of file, but most commonly used for code
- Contains extra information such as date, author, and a message explaining the change

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### ► What's Version Control?



#### Benefits of Version Control Systems (VCS)

- Can **retrieve** previous version of files at any time
- Retrieve files that were accidentally deleted
- Can be used **locally**, or **collaboratively** with others

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## Slide 18



### ▶ 2 What is Git?

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## Slide 19

### ▶ What is Git?



- Content Tracker
- Distributed Version Control System (VCS)
- Linus Torvalds



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## Slide 20

### ► Why do we need Git?



- ➔ Backup/Versioning/History
- ➔ Undo Changes
- ➔ Comparing
- ➔ Collaboration and Teamwork
- ➔ Code Review

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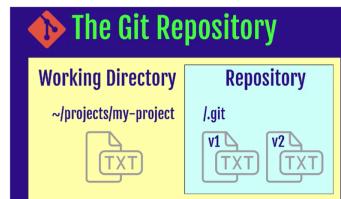
## Slide 21

### ► Git Repository



#### What is a repo?

- A directory or storage space where your projects can live.
- Local / Remote



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### Basic Git Operations

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Link(s) on this slide:

- <https://create.kahoot.it/details/scrum/bd3787ab-ac4d-41a2-9706-a9ec1b6acf9a>

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## Slide 24

### ► Git Repository

→ Check if you have git in your computer

```
git --version
```

→ Configuration

```
git config --global user.name "<name>"
```

```
git config --global user.email "<email>"
```

```
git config --global core.editor "<text editor>"
```

```
git config --list
```

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## Slide 25

### ► Git Repository

→ Create a local repo

```
git init
```

→ Get the content of a remote repo

```
git clone <url>
```



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### ► Git Repository ➤

→ See the commands

**git help**

→ See the status of your repo

**git status**

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### ► .gitignore ➤

- Specifies intentionally **untracked files** that Git should ignore.
- Files already tracked by Git are not affected!
- Each line specifies a pattern.

**file**    **folder/**  
**\*.log**    **!important/\*.\*log**

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## Slide 28

### ► Workflow



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### ► Track a new file

- Create a new file in our project folder  
**lemonade.txt**
- Edit this file
- Check the status of our project  
**git status**



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## Slide 30

### ▶ Create a new file

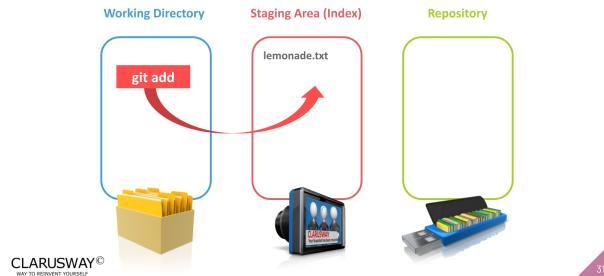


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## Slide 31

### ▶ Track/stage a file



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## Slide 32

### ▶ Stage file options

- Stage one file

```
git add <filename>
```

- Stage all files

```
git add .
```

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## Slide 33

### ▶ Record the current state

- Stash the changes in a dirty working directory away

```
git stash
```

- Bring stashed changes back to the working directory

```
git stash apply <stash>
```

- Remove all the stash entries

```
git stash clear
```

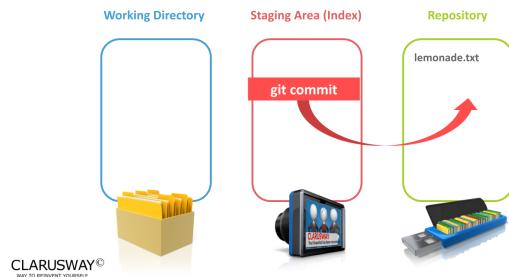
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## Slide 34

### ▶ Commit

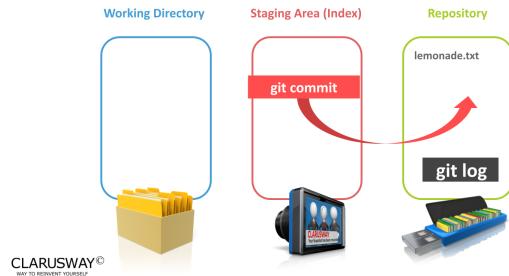


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## Slide 35

### ▶ Commit

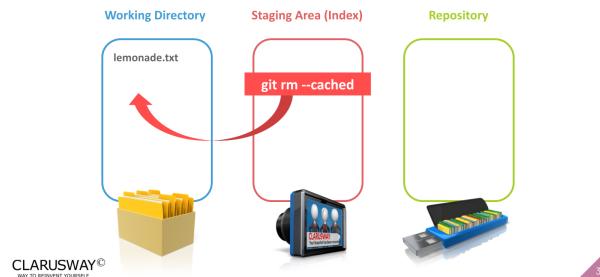


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## Slide 36

### ► Remove from stage



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## Slide 37

### ► Commit

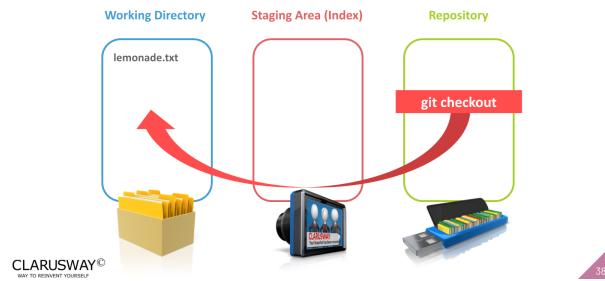
- Commit the files on the stage  
**git commit -m "message"**
- Add and commit all -tracked- files  
**git commit -am "message"**
- Modify the most recent commit  
**git commit --amend**

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## Slide 38

### ► Checkout from repo



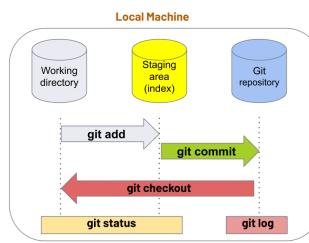
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## Slide 39

### ► Summary

`git init`  
`git status`  
`git add`  
`git commit`  
`git log`  
`git diff`  
`git rm`  
`git checkout`

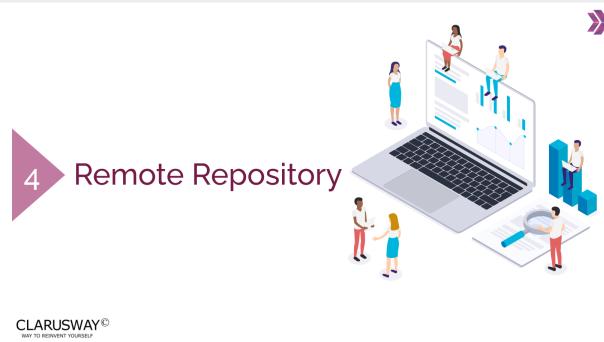
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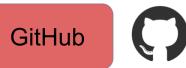
## Slide 41

### ▶ Github - Remote Repository ➔



Git

&



GitHub

Version-control system

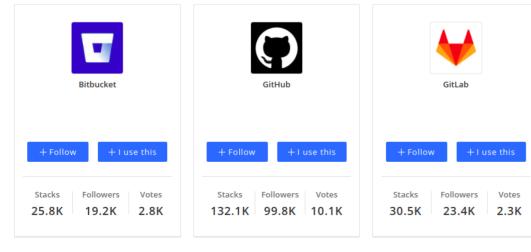
Repository hosting service

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## Slide 42

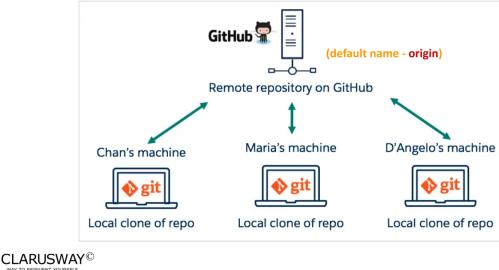
### ▶ Github - Remote Repository



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## Slide 43

### ▶ Github - Remote Repository



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## Slide 44

### ▶ Github - Remote Repository ➤

→ Copy a repo from remote to local

**git clone <url>**

→ Get the latest version

**git pull**

→ Upload your commit

**git push**

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## Slide 45

### ▶ Github - Remote Repository ➤

→ Connect to remote repo

**git remote add origin <url>**

→ First push

**git push -u origin master**

→ After first push continue with:

**git push**

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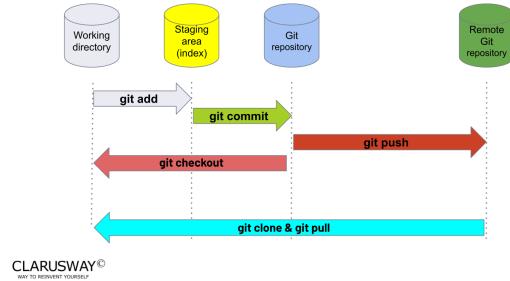
## Slide 46



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## Slide 47

### ▶ Github - Remote Repository



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## Slide 48

### ▶ Github - Remote Repository



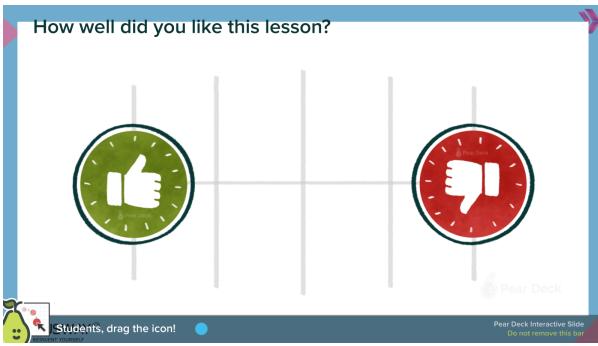
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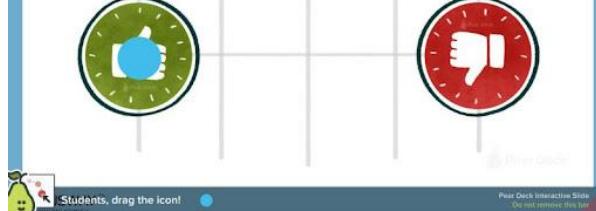
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## Slide 49

### Your Response



How well did you like this lesson?



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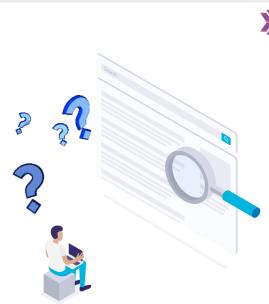
## Slide 50

# THANKS!

**Any questions?**

You can find me at:

- ▶ @Harvey
- ▶ harvey@clarusway.com



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## Slide 51

Your Response

Did you finish pre-class work?



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## Slide 52

Your Response

## Slide 52

## Your Response

Did you install Git?

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## Slide 53

## Your Response

Did you create your Github account?

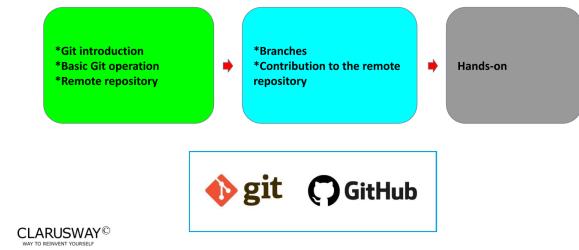
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## Slide 54

### Git Journey



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## Slide 55

### 5 Git Branches



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## Slide 56

### ► Git Branches



- Branches
- Merges
- Merge Conflicts



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## Slide 57

## Your Response

### ► Git Branches



#### Repo, Commit, Branch, Head

What comes to your mind when you  
hear this?



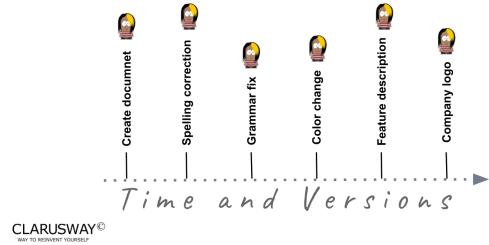
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## Slide 58

### ► Git Branches

#### History Tracking



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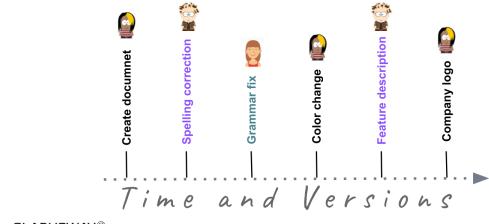
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## Slide 59

### ► Git Branches

#### Collaborative History Tracking



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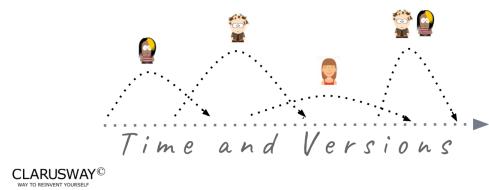
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## Slide 60

### ► Git Branches

Collaborative History Tracking



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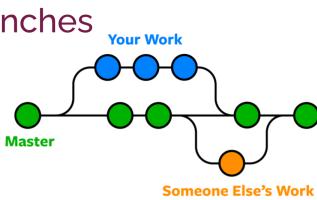


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## Slide 61

### ► Git Branches



- Production of the project lives on master/main branch
- Branches are reference to a commit

```
Erics-Mac:project eric$ git branch
```

```
* master
```

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## Slide 62

### ▶ Git Branches

→ See local branches

**git branch**

→ See remote branches

**git branch -r**

→ See all branches

**git branch -a**

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### ▶ Creating/switching branches

→ Create a new branch

**git branch <branch name>**

→ Switch to a branch

**git checkout <branch name>**

→ Create and switch to a branch

**git checkout -b <branch name>**



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### ▶ Deleting branches

→ Delete a local branch

```
git branch -d <branch name>  
git branch -D <branch name>
```

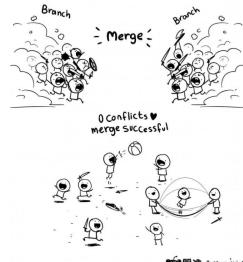
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### ▶ Merges



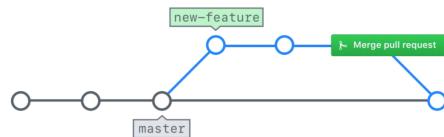
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## Slide 66

### ▶ Merges



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## Slide 67

### ▶ Merge Conflicts



- **Merge conflicts** happen when you merge branches that have competing commits, and Git needs your help to decide which changes to incorporate in the final merge.

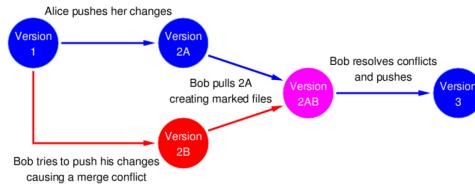
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## Slide 68

### ► Merge Conflicts



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## Slide 69



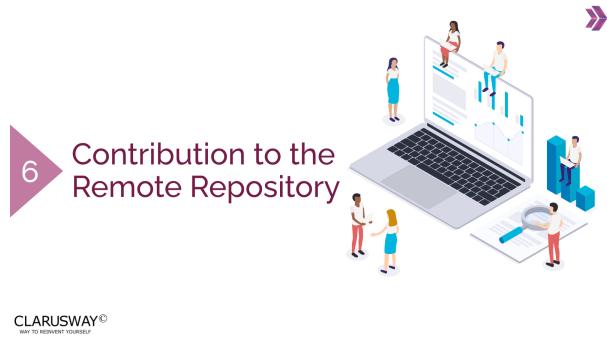
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## Slide 71

### Objectives ➔

- ▶ Pull Request
- ▶ Fork

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### ► Github - Pull Request



- ➔ Github's feature not Git's feature
- ➔ It allows you to contribute to other projects

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### ► Github - Pull Request

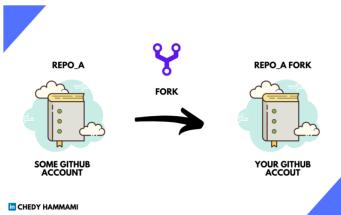


- ➔ **Pull Requests (PR)** let you tell others about changes you've pushed to a branch in a repository on GitHub
- ➔ You create a pull request to propose and collaborate on changes to a repository. These changes are proposed in a branch, which ensures that the master branch only contains finished and approved work.

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### ▶ Github - Fork



A fork is a copy of a repository.

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### ▶ In case of fire 🔥

- 1. git commit
- 2. git push
- 3. leave building

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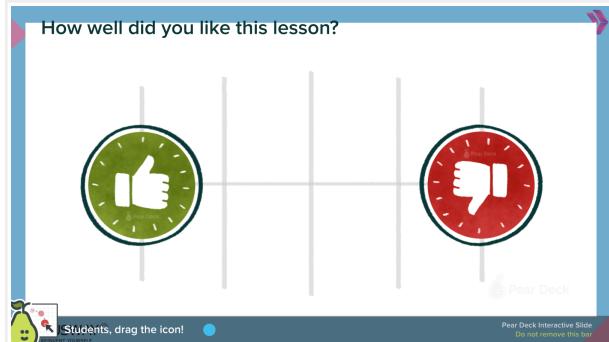
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## Slide 76

## Your Response

## Slide 76

## Your Response



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## Slide 77

**THANKS!**  
**Any questions?**

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- ▶ @Harvey
- ▶ harvey@clarusway.com



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