

DevOps - Module 5: GitHub and Git CLI For DevOps

DevOps

Module 5: GitHub and Git CLI For DevOps

Video: GitHub Push PAT

And if you see here, this is what it is saying,
synchronize changes.

So when I say synchronize changes,
it is updating the changes in the dev branch.

See, currently where did we do all these changes?

You see in the bottom of the screen, right? It says Dev.

Now to update the changes to the dev branch,
we do something called pushing.

We are pushing the changes from the local dev branch
to remote dev branch.

Now, whenever you push, it means you're writing the changes.

Agree or not. Who is writing where our developer
has updated the changes in the local, he wants
to write the changes back to GitHub.

That is called as pushy.

If you want to push, you need to have some access.

And how it will be given means using a concept.

Call us personal access tokens. PATV.

Call it. If you don't have personal access tokens,
you'll not be able to push the changes to git.

Okay? You see, I'll show you right now.

You see I'm clicking this button called sync.

So when I say sync, you see what it says.

This action will pull and push.

Pull means getting the changes.

Push means updating the changes. Okay? So when I say, okay,
you see what I say?

Sign in. So either you need to sign in
or you see there is a button called token click on this
token and it says Personal access tokens.

So this a developer needs to generate in user are.

Now let's get back to the developer account. Once,
I will log in into GitHub.

That's my developer right now, there
and here, if you see in our branch called Dell,
I don't see any changes.

Sorry, not web app. My bad logging.

You see we have the branch called up.

When I click on it, I don't see any changes
that we implemented in the last session.

Uh, now if I want to update those changes,
I need to generate a token.

Pretty simple. Go to your user account.

Check the settings.

In here, you see there is a section.

If you scroll down, developer settings,
personal access tokens, say tokens classic
and say generate a new classic token.

Give some name. I'll say my

PC expiry date.

You can set for the token if you want,
or you can just say no, expire.

It's your choice. So I have set it for 30 days, let's say,
and give the access on the repository level.

Okay? On this particular part, just say generate token.

It'll be only one time generated.

So you need to make sure you copy this token
and keep it with,
okay, I got this particular token,

which is updated right now.

I'm gonna copy this token, get back to my machine,

and I'll say,

just updated the token.

And I'll say, sign it.

Now you see I'm no longer seeing

that sync button, meaning what?

Right now that changes are updated. Let's verify.

I'll refresh.

Yesterday you created login with avatar.

You created login page, all the code

where this code came in, the dev branch.

Are you good? What I'm trying to say?

Video: GitHub Pull Request

Am I seeing those changes?

Yes. No.

Technically on my main branch that changes or not,

but it is development code, right?

If it is here, there is no significance.

Now developer says that I'm done with the work by saying

I want this code to be verified

and updated in the main branch.

So further they're going

to raise something called us pull request.

Are you clear? Everywhere in sync.

So I'm gonna say go to the pull request.

There are no pull requests yet.

I'm creating a new pull request comparison from

where you want to update to where

it is showing you a preview.

What you did, you created these two files of study.

Their content also is showing them.

That's what I did in the last session.

And then I'm gonna say what? Create a pull request.

Uh, I'll say

log in page completed.

Okay, just some message. And I'll say create a pull request.

Now you cannot do the merge. You see it's gray out.

Merging is logged, reviewing is required.

Now developer did the work, submitted the work.

Now the owner will get the request saying

that there is some full request waiting.

You need to verify review. Then he will do the march.

Are you good? What I'm trying to say are good, right?

So let's see from the owner perspective, now

that is the owner and yes,

he's gonna get again a notification regarding that

login page completed is you see I just redirect over.

Now you see for me, I can do the me and all of it,

but I first want to see what are the changes

that were done files.

This is what the code has written.

But looking at this, I cannot see

how the application might look, isn't it agree or not?

This is just code. Now am I seeing any application? No.

As a senior developer

or as an owner, I'll just verify whether this is

working as expected or not.

So what I'll do, whatever the code which is there,

I'll bring it into my machine and I'll verify.

Are you clear? So this is my developer laptop,

which is a Windows system, isn't it?

Uh, now I'll keep this aside. This is my laptop.

So I just kept two laptops to distinguish open

one more visual studio code here,

which is there in my system.

So yes, it's the same thing.

Now what I'm gonna say, clone repository.

Yes, which repository?

The one which I just showed you right now to you guys
and just, I'm gonna keep it somewhere in my documents.

I'll close this Welcome page.

And by default you see I'm seeing only read me file
because what's the default branch?

Where did my developer update the code?

Click on the main button

and switch to,

I got all the code.

Uh, now I know this is going
to be there in my uh, what do you say?

Desktop? No, I'm sorry. Documents.

I'm gonna say find in the find.

Basically I'm saying open it in the uh, what is it?

File explorer,

uh, reveal in.

Find it. Sorry, I see I'm in my login.

2, 5, 0 1. I can see the code, right?

I'll go ahead and run this application in my system
to verify whether it's working as expected or not.

See it is coming from my system working,

but I really don't like it much

because image seems to be very big.

It's like basically when I load the page,
the input is getting a scroll bar kind of way.

I don't want that. Maybe if I decrease the image it might
look a little bit better, isn't it?

I hope you understood the point.

So I'm gonna say the developer may be
firsthand tested my system.

Now I'll say inspect this
app Here.

This is the image. Now
this image.

And if you see right in this image with this like 40%,
maybe I'll see if with this 30% how it looks,
but still not so good.

Maybe some 20%.

Now you see with this set two 20%, now it's better.

There is no scrolling effect and everything, right?

So it looks good for me like it goes
and just logs in like that.

And also I didn't like this login form.

Maybe I'll say uh,
LMS learning management system.

Are you clear what I'm trying to say?

Or maybe the company name, edify login, something like that.

Now what I give this request to the developer, see
who is going to do it right now.

Not developer owner. I'm the owner.

You see, where am I in this account?

Uh, owner can see review changes.

Now see either he can approve the changes
or comment or I would say what?

Request some changes, isn't it? What changes?

Verify login. Or I'd say,
did you understand how am I requesting the changes?

And I'll say submit.

Now developer will see the same thing. Are you clear?

What I'm trying to say is you see I
got instantaneously update to my account.

So what he said, update the login form too.

And you can see requested the chains.

Are you clear is what I'm trying to say. I'm gonna say

and just I'll start working towards that particular patch.

That's my developer permission.

Oh, so what he asked me to set first thing is

he asked me to do

then image.

Now

how much?

20%

I'll save it.

And also I'm gonna

say update.

That's what I did head.

I update it and image configured according

to the given requirement.

I'll say commit. Oh sorry, I need to stage it now.

Stage and then count.

Now one more change. I'm gonna say push.

Update it.

Now what we

already saw that particular requested changes

were already given.

Sure. Now I can say, you see

whatever I did the thing got upgrade, updated with

and header over here.

See the difference, what I changed and what I updated.

Everything is being tracked and version control.

Now this is what happens with your prob, what you say,

projects moving forward.

Developers keep on

working, updating and checking the things.

Uh, now what updated the things right now?

Now my owner will see all the things

new change since you last, isn't it

or not Now I'll see now this change he did,

but it's again there were in GitHub.

So I need to get get it the change in my laptop
and I need to verify now.

And that's my laptop over here.

So here

and you already saw now it was like this.

If I refresh, you see again it's form back to big one.

Now what I need to get those changes from GitHub
to local machine Here itself.

I'll synchronize this button. Either it'll do push or pull.

Pull means what? Now the developer newly updated changes
will be written to my system.

That is pull. Push means you are updating the changes back.

Same thing. So I'll say click this synchronized button.

It said synchronized it.

If not, what? Click on this part.

You'll see is

it updated in the system now?

Okay, so now I go back to my system and I'll refresh.

Yes. This is what exactly I wanted in my project
image being this much edify.

LMS logging, all the things are working as I want.

Clear as everyone. Now I would say what?

Yes, this is what I need as a owner.

Now I'll go ahead and check the files.

Everything is how I want it and it's working up.

Now I'll say review changes.

Uh, now once I reviewed it,
now you see what happened.

The merge button got updated.

Now what's happening when I merge,
we are taking the changes from dev branch
and applying it on main branch, isn't it?

So far in the main branch there were no changes yet.

If you go back and see the main branch, if I refresh,
am I seeing any changes yet?
So now I'll say merge
and I'll say confirm.
Merge. It says your
pull request has been successfully merged and closed.
If you don't want the dev branch, you can delete
because already updated.
Right now both are identical.
Dev and mean are one and the same.
That's why they're saying if you don't want,
you can delete this res branch.
But let's see, in the main branch, did I get the changes?
Are you clear everyone? Now if I go ahead and see, right?
See how my slowly changes are getting up?
I created the initial repository developer,
created the login page, login avatar,
updated the width and the header.
And then I was the one who requested the, sorry,
who merged the pull request.
Clear everyone. Now good. This the entire flow.
This is what happens in terms
of development ways when you're going
and start working with the things.
Okay?

Video: Nginx Deployment

Local machines into the GitHub
and the owners will basically review
and once everything looks good, they'll match.
And this is the process throughout the application
development, it follows, I just

created the login page right?

In the same way Next what the backend functionality
and all those things will come into the picture
that will discuss later because writing the code
is not our responsible.

So I assume that in the backend developers are keep on going
in writing the new functionalities based
upon the requirement scale.

So once the entire application coding is done right, uh,
then what happens is a question.

Uh, now currently, where is this application accessible?
Only in your laptops agree or not simple.

If I give this link to you guys, will you be,
will you be able to access this application?

See the link ones what it is saying.

So this application is being loaded from where?

From my or if not developer laptop.

But now what I want to give this application
to my customer to access it.

Will I, if I keep it in my laptop,
do you think it is gonna work?

Uh, that's when what we do actually, we create servers.

You only said, right, what is the purpose of a server
Initially you go ahead and set up your application.

Your clients are going to access it.

Applications from the service.

Now do you know how to create a server?

Now our work is deploying this application on the server.

Once the code is ready, now you're able to connect
owner updated in the main branch.

What is the main branch purpose? Final code, right?

Final code is ready Now, now I want
to take this particular application
and I want to deploy it with exactly on a server,

you know already how to create a server.
You're familiar with that part?
Now I'm going to do the same.
I'm going to host this particular application on a server so
that anyone in the world can access my application.
How you guys are accessing LMS application.
I want this application to be accessed by any
of you anywhere in the world.
So further what I need is server.
But here now you are able to connect from development
how the servers are getting into the operations site.
Okay? Now what I'm going to do,
so now it's not the work of a developer.
Now who whose work is starting, uh, technically
and operational person, a server administrator is going
to create a server setup.
It's not DevOps work based technically,
but these are the kind of things you'll automate
using DevOps in the future.
Okay? Yeah, excuse me.
You see I just anywhere you want it in
AWS or Azure, your choice.
Wherever you want, you can set it up. I'm saying
launch instance because I'm creating a new server right now
because the old server,
once the Linux part is done, I deleted it off.
You guys can delete it.
Now I'm creating a new server for this application.
Deleting. You already know.
Now select your server,
terminate, it'll delete.
And now I'm recreating a new mission
launch instance.
See, I'm naming it according a web server

because I'm going to host what a web application in that me
going with 1, 2 22.

Some key pair, which I have whatever you have, you select
the one you created in your sessions.

Uh, then followed by, sorry.

So

Along with SSH, I'm also saying what
allow HTTP traffic from the internet.

Why? Because whenever we are working with web applications,
the traffic will get over HT T-P-S-S-H protocol.

You remember for remotely accessing the service.

Same way, right? Now we are going
with which particular thing?

A web application, right?

So web applications will work on port
number, uh, what do you say?

80 with uh, HT TP as the protocol
because we are browsing it via and what do you say?

Uh uh, HT TP client, which is nothing but a browser.

Okay, let's see.

Now I'm gonna say launch the instance.

Okay? Now I can see our server is in the running mode.

Same thing. You can do it in Azure also. Same to same.

The only difference in terms of Azure is
same create Azure virtual machine.

Everything is same percent except here along
with SSH what you'll say.

That's it. Same to say there is no difference
what you read in terms of AWS or Azure.

Here you allowed TP.

So here also we are going to allow HTT and not creating,
but same
now server is running,
taking the IP address of my server,

opening the GI Bash, uh, which GI bash your local system?

GI Bash. And then I'm gonna

say I'm in the downloads already.

Connect with the server. You already know the same text.

Whatever the key you went, user name it, IP address.

Now this is a new server. It's a brand new system.

Now you see nothing else is there.

Uh, now slowly you'll start looking into new things.

Now this is a server in which what,

uh, what you say SSX software is installed.

So you're able to connect similarly if you want

to set up a web application, there should be HTTP software.

I clear what I'm trying to say.

So how you can verify that you know,

we have some commands, some new commands.

I said now Linx commands will keep on coming up.

So what are the command I'm going

to show you right now with soda access?

I'm trying, meaning I need route level access for this

assess hyen entity.

So this command, what it does, you know,

it'll tell you in your system which port is used.

By what

am I clear everyone?

So port 22 is used by which application? S, SH, right?

I said you believe, but now I'm confirming,

are you clear?

This what I'm trying to say? This is a confirmation.

This is basically called sockets command.

It'll tell you which particular port is used by

what application when you use this

particular uh, utility call.

S Are you good with this command?

What I'm trying to say, this is basically a debugging tool

to help you understand on the network layer what is uh, used by which particular port can you see?

Port number 80, I said HT TP works with which port 80 if you want, I can confirm from the server also already in Azure it was showing you http 80 in AWS also I'll show you, I selected my server security and followed by which is port number 80.

Like I such now what?

But am I seeing anything on port 80? No.

So how you used SSH to connect with the system using GI Bash to access your web application, we need browse using browser.

I will talk to the system using IP address.

Don't have a domain name. So as of now I'm using an IP address.

If you purchase domain names, you can access, let's see,

I'll say continue to the site.

What it's saying connection refused reason.

I'll tell you one second.

Let me see if I have any image over here.

As an administrator we used the client called GI Bash over port number 22, you connected with the server.

Now because in your system there is a software called SSH server which will accept the SSH request.

Whereas in your system right now there is no HTTP server.

So as a customer, when you send the request over port 80 using browser, you're not getting the response.

Now clear everyone. So now as I was trying to explain you that particular command, that what uh,

there's also one more comment.

I'm checking the status of SSH.

This is like clicking on the start menu
and when you open some software,
it'll show your dashboard something similar.

Oh sorry,

what are you saying?

What is running secure?

Shell meaning basically the abbreviation secure shell server
is active and running or not.

That's why we are able to correct now to demonstrate
what I do, you know whether this thing
is working or not really.

I'll open one more GI Bash.

We can open multiple GI bashes, right?

Second window

changing the directive downwards.

And again, I'll try to connect with the server, same server.

Now did it connect?

Verify All good, no problem.

I logged out where the new session,

I'm going back to the old session.

Now what I'll do wanted you
to help you understand this concept,
stop meaning like I'm closing the program in your windows.

When you open something and you close
the program will stop it.

Now check the status, what it is saying.

So to come out of it you need to say queue Q4 quote. Also,
where is 22?

Because you only said it. I'm stopping it.

So will 4 22 be available for connections?

No, but I'm still not logged out from the original session.

I'll go to the second session.

This was how I connected
what it saying.

Now you understood the concept.

SSH is already installed in your system as a part of os
and it also automatically starts.

So whenever you start the server now automatically SSH
starts and you guys are actually using as admins
to connect via SSH and get into the system.

But now the problem is what we don't have
HGTP in the system only.

It's not even installed. Very good.

So as a administrator, if you want
to have a web application running inside your server
and giving it to your customers, you need
to make sure the system is ready with HGTP software.

Good. Everyone you see right now I'll go back, I'll say
I started.

Now if I try to connect
now, I hope the confusion is clear for everyone.

So now what I need to do here,
let me discuss that part.

Once
this is the same thing we did now, working directly staged,
committed pull, uh, updated to uh, push basically to GitHub.

And today we even started working
with the personal access token.

I'm keeping all that information over here.

A pull request for that. We need what?

Personal access token, how to create everything.

I updated here. You see pull request,
you push the code and then you raise it.

Pull requests. That was what
I was talking about in the last session.

I.

Video: Hosting Web Application

We want to host our deploy web application

because it was completed, right?

So it is saying to host, run our deploy web applications.

We need what? Web server, simple http server.

Also, uh, what's the, what's the concept of a web server?

You see it say software.

Technically we are going to use something called as

nGenx HT TP server, our nGenx web server.

This software will be installed on in hardware

because a WS and Azure are giving you hardware

and the request will be sent via what?

Okay, port 80.

So that what you can distribute the web content

and simple and straightforward.

This is the statement you need to,

okay, you hear me?

This, anyone who wants to host websites

or web applications, what is mandated means

a web server program is mandated.

If you don't have, you can't right now, we just verified it.

Um, now I'll go ahead

and start setting up the thing's pretty simple.

I'll install and get the things ready.

Now same that thing, what I showed you.

Now I'm keeping all that commands for your reference.

What I just executed that SS command system, CTL, command.

All I have here, just go ahead and verify the same thing.

And now I'll go ahead and install web.

Sir, you know already how to install the software, isn't it?

Let's see you guys how I can set it up.

I'll close this off and back to my original part.

Uh, what was the software? I need engineers
first time updating the system
because it's a new system that I just created.

Now update the system.

There's the app update once it will update the system.

How did you install zip unzip?

Same way I'm installing n Engine X
now hyphen S yes for all.

We already saw it.

This is also default one, Ravi,
or do we need to download it from somewhere?

No, no. It is part of default.

Okay, now

let me verify.

Additionally, port 80 can B, c and being used by whom?

Now? Now what you did, you know technically if I go back
to this image as a server, admin, admin, server admin,
you configure literally what you installed.

Ingen X so that when the customer comes over port 80,
which is basically via browser,
then your engine X will respond.

Is it error? Is it working?

It says connection Ref the same error. Now I'll reload.

Do we need to start an jx?

No, it'll be started automatically.

Automatically it'll start. Yeah.

And if I want to secure it, uh, I'll want to use it
as HTPS. What do we need to do?

You need to purchase the domain names and SSL certificates

And now we configure in nix.

Same thing. You'll be having again command.

Everything is command.

There are no menus, no,
everything will be files and command.

In each update I'll show you.

Don't worry, we have some commands from uh, what you say,
uh, NX, those commands we need to use in order
to set up H-J-T-B-S configurations,
Okay?

Clear so far. Now what we are seeing welcome to N Engineers,
but is this what we wanted to see?

We want to see what exactly the application our development
team has worked with because they're already having
the URL as well, right?

So I want to take that application
and deploy it on this server.

Uh, now we need to figure out where can I go ahead
and get the, uh, what you say path for this application.

Agree or not? This is the page I'm seeing,
but where it is coming from, uh,
by default you might not know There is something called a
document for every particular web server you work with.

There will be a document.

So I browsed, I got this message.

If you're a website administrator, you need
to add the web content in a folder called as document.

So this page, what you're seeing right now,
this page is coming from this location.

I'll show you. I'll copy this path.

List me this content.

Are you seeing one page
and same extinction is do hcm.

Okay, it's a file, right? So what command I can go with,
see how the commands are all coming into the picture?

I need to verify it whether it's the correct page or not,
that the same content you're seeing in
the web format, right?

Welcome to NX.

If you see this page,
it means the web server is successfully installed
and working further configuration might be required.

Go back to the webpage.

Are you good now just for understanding,
what am I doing?

I'm removing the file. Go on.

Do I have that file?

So whenever you're getting the errors, right,
when you access applications, so something is not corrected,
the server side, you're remote,
you're looking for that page.

It's not working as simple as
are you clear everyone what I'm trying to say?

No, but obviously I deleted it
because I don't want that application.

What is the application We want LMS app.

Okay, now I want to get that LMS application.

Where is it present in a GitHub repository.

Do we have the URL for that repository? Yes.

I'm copying this here.

Now I need to get the code.

Now in your server
by default you have one software code
it gate.

When I run it, it's showing me different options.

There is an option called clone.

What it is saying clone a re into new directory.

Simple psdo get
clone that you are
where uh, if I say here, it'll clone here.

There is no use where I need to keep the code in the wire.

Ww WH still. See right now I did not give any destination.

If I don't give any destination.

Current path is a destination cloned.

Where did I get it? In my lab, sorry, in my home direct.

If I, if it's there in the home director,

there is no use If I refresh still same error

where we need the code, uh,

exactly in the path called via WW HTML.

Isn't it?

Space, location.

Are you clear what I'm trying to say? We are cloning same.

How did you do with Visual Studio code?

I'm doing via C line now

done right now where disclosed to the

let this director was empty.

No. Is it

your repository content?

Read me file image index page that you have written,

you can verify if you just check

that IP address in your mobile phone, right?

It'll load anywhere in the world.

Like literally this is saying like 35 1 77 something. No.

You see what I'll do?

Just like take my browser from the mobile

30 five.one seven

seven.one 57 dot 72.

Great. So I can see the same app over here, right?

Meaning what now? It is accessible anywhere in the world.

The difference is it's not having a domain name.

How do we configure it? We'll see later,

generally in production environments will go

with the domain names and all of it, right?

That discussion will keep it for separate class.

When the time comes. I'll discuss all of it. But now what?

In simple terms, you can say that this is my dev server,

my developers, whatever the code they're writing,

they can come and they can verify over here later on.

This can become a production server.

If I go ahead and update domain names, SSL, certificates
and all of it, high availability, fault tolerance,
all those things we'll see in the future.

But now what this is, what the purpose of server is
and how the development team is working
and how their updates are coming in getting over
nuclear revenue from online.

Is it.

Video: Scripting Scenario

So in order to get that done, what I'm going
to do is I'll give one more activity but not for developer.

This time I'll give the activity to a DevOps engineer.

I assume you are the guys right now,
and I want you to prepare some scripts so
that you can go ahead and deploy the login application.

So I'm gonna ascend to the same person only,
but assume right now he's a DevOps engineer Army,
A system administrator, but not developer.

Okay? So I already have some requirements similar to this.

This is what I want him to do.

So as a owner, I'll start assigning him once again
learning to

2 0 1

This was the last class issue we like we
created for creating the app.

So I would say this one is almost done.

Everything was confirmed. So I'll simply say close this.

Now we don't have any open issues.

So this issue right now closed same way.

I'll create one more new issue.

Can you task, see what I said?

Simple. The idea is whatever you did in the command line
to host that application, I want you to write one script.

So I remember I installed engine X,

I cloned the code, I deployed it.

So I'm asking him to write some sort of script.

So what I want him to do, you know,

is that

writing a shell script,

he'll also understand why we write the shell
scripts and all of it.

I want you to update the system.

I want you to install the following utilities.

Install nGenx web server,

remove the sample pages from the default path,
then deploy your application, which is,
and then verify whether the server is loading the
login application or not.

So next time I don't do it manually,
directly, I can pass this particular
script and I should be able to do it.

That's the idea. Hope you understood.

Okay, now I'll say now today

he is basically a system administrator or a DevOps Azure.

Yesterday he was developer.

Today is going to be a person who's going
to write the scripts,
then assign the work.

Right Now, obviously our developer will get
that particular notification.

He'll start working with
now what?

See how a person, administrator,

or a DevOps engineer will do the same thing using command.

Are you good? Okay, so here

I'm opening my GI Bash.

Now what I'll do, just for understanding purpose,

I'll delete this entire, it's not there in the system.

Azure, it's a separate machine. Clear.

Know what I'm trying to say. So I'm just deleting all
of this code, what we had done in the last part.

Now it's a brand new mission, which is used
by my administrator right now.

Now let's see how the things will start folding there.

Oh, now I want to get the software
to get the work initially.

So what I'm going to do is I need to clone yesterday
what I used Visual studio code to clone the things.

Right now everything I work from the command line itself,
meaning whatever the operations I'm doing right now here,
the same operations, you can do it in any cell.

Once you connect to the server.

Yesterday I did the operational,
what I just said, get clone.

The same thing I should be able to do here as well.

Get clone. Okay?

Um, I'll say clone it
and once the cloning is done, uh,
but where I want to do the cloning is the desktop.

So better what I do,

I'm going to the desktop
and I'll copy the URL also of our project code,
which is this one in my laptop.

I'm gonna stick it clone this URL.

Clear what I'm trying to say.

If you want, you can confirm, go back to the desktop.

I deleted, but I got it, got it back.

And I did not use any visual studio code,
CD login app, like how you open the folder.
Same way I'm opening here in the CLI.
And by default, what branch did I get? Main branch.

Video: Git Workflow

Now this is something related to the DevOps work now.
So what I want, I want my developer, sorry, my uh,
DevOps person to create a new branch and write
and implement the script in that branch.
Meaning what? Now I want to create a new branch
and do the work from there.
Did you get the point? What I'm trying to say, uh, currently
how many branches we have?
One, two branches.
Main branch, dev branch, isn't it? Let's verify Once
main branch and dev branch,
but currently when you clone, you'll always get what branch?
Main branch. Now earlier,
how did you switch to other branches?
In the bottom you had a button called me.
When you click on it, it was showing you,
then you got the things done, isn't it or not?
Here the thing will not be there. There is a command fault.
Check out. Check out to the branch.
You want if I say a branch called
already saying, oh,
not known technically there is no such branch.
What was the branch you have?
Do we have this branch
already saying you have switch to the branch called de.
It's like clicking the button

and moving the same thing here.

The option is called us checkout.

Now I'm in the branch called Dev. Uh.

Now what I don't want to work in dev.

I want to create a new branch.

Uh, when you want to create a branch.

Hello? Go ahead. Yes.

Okay, and the voice is drop looks like,

Let me know this in case if it is still problematic,

I will try to see what can be done.

You got a command called hit branch.

This will tell you what branches you have

asterisk symbol indicate on what branch you are, right?

Okay, what two branches? Main in dev.

But you are on what branch? Dev branch. Oh, we understood.

Now from here I want to create a new branch.

What the point to create a branch.

Branch followed by the branch

and I'm create a branch was from where?

From Dev. Understood,

executed.

No, let's check the same in one second.

Right now the branch called DevOps is there.

Right now I want to do the work in the DevOps branch.

So I, what I need to do, I need to check out,

I need to write this script in order to go

and the work I'll start.

So once we get here, uh,

you remember there was one blue dot coming up on the left

side when you start adding some new code

in the visual studio code on the source control,

it was saying one pending change.

Two pending change. It was showing you right?

Literally what it is showing you what's happening, correct.

What number of changes, what is there in uh, staging
what is there in working correct.

Agree or not the same thing in CLI.

Good status. See what it says.

Isn't it working directories clean
because I did not create any new change or new code.

Make sense? Now what I'm trying to say?

First time when you cloned,
did you see anything like one pending
change, two pending changes?

No, same concept. I did not create any new file.

Now I'll create then let's see what happens.

Shell script, I'm trying to write for
what same they have said no.

Install some software.

Uh, then set up nGenx web server, clone that application,
whatever the activities they asked us to do.

Next time it might be reusable
whenever I want to set up this application.

So further I'm writing what a script
understood what I'm trying to say.

So why we write a script is to avoid repetitive work
script is nothing but a file with series of commands.

What you try to do to get an action number
what my was, what was my action to be done here means
to deploy this app

and further we know there are some steps need
to be taken care all those particular steps.

I'm gonna write over here. Good.

Now everyone what I'm trying to say clear.

So let me go ahead and start writing this particular
script for you right now.

I'll show you simple and straightforward and let me know.

I'm pretty much sure you'll know all these things

I'm saying via script HI for insert.

So I'm saying with which shell you should execute Wind Bash.

Basically that's our shell, right?

Nothing but shell is nothing

but where you're executing the compact

that shell passes that.

So your technical is telling when you execute this script,
use this shell.

Next you see echo updating the system.

See the command pseudo app update hyphen in
the last session I executed it.

Then they asked us to install the utilities.

No zip

and unzip, same command, psdo app install, zip unzip
installing EngineX web server,
pseudo app install engine Xen y
clean up the existing folder.

See pseudo remove rf, remove forcefully
whatever the content which was there in via WW HTML.

Then plan the login application instead
of 2 4, 3 6 your code.

Isn't it the work you did in the last session.

Now I'm writing like a script, clear what the point is.

Now I'll say escape.

Now I wrote one file, new file, agree or not

On branch DevOps, you see it's saying a new file was there,
which is updated, which is not yet tracked.

Meaning it is in the working code. What I need to do stage.

How did you do the stage in visual studio code

plus button when you kept your mouse, you hoover on a file,
it showed you one plus button.

When you click on that plus button, it's stage in here.

That command is called add.

I'll show you

it.

Add what exactly the file you wrote.

Now don't worry, it'll show you like this
because uh, what you say, uh,
it is specific to Windows system.

No, that's why it'll come up with this warning,
but no problem you can just ignore it.

It just a warning, no error, nothing. Okay?

Now again, go ahead and check you see what it's saying
And it is in the green color.

Earlier it was in red color.

So whenever you see something in red it indicates
it's in the working copy.

When you see in the green, it is in the staging.

Uh, if the file is in the staging,
you remember I had one option called minus onstage
here how to do onstage.

There's the command

Restore the staged file.

Same GI

executed

back in red color.

Meaning what again it is in the working area.

Same thing what you did in the gi, sorry visual studio.

That's the exact same thing I'm trying to do with GI Bash,
which is technically seal.

But find that script is perfect. I want that to be committed
once again, I'm gonna stage it.

Now what are you saying? Changes to be committed.

Now I need to commit. Now how did I commit?

There was a button. But

before you commit what we need to do,
some message needs to be given.

Uh, no in the visual studio code on the left side you got

a box called commit.

That's the same commit dash m

the message you need to pass.

Now this is like clicking the commit button

and you see there it is showing you CAA five six F eight.

That is

you heard the mouse it showed you in the last session.

I hope you remember got the point.

Now the same thing I did right now

via command clear.

Everyone got the point.

So exactly what you did in the last session,

I'm doing literally that's it.

But I'm using all commands now. I committed, right?

Uh, now there you saw history in the bottom it was showing

you commit by commit.

You remember in the last session,

or maybe I have a thing,

you see how it is showing you like this,

this some other project, but you got something similar.

See who did when they did, what was the message?

What file changed? How many lines you added?

What is a commit id commit message.

Everything you're seeing now the same thing.

You can see where in the CLI also

get log dash, dash

one line

let's tender.

Is that what happened so far?

That's it. Now you created initial comment,

then we created login page, then we created login avatar.

In the last session you updated image with

and header in the dev branch in the DevOps branch.

You created web deployments.

Do you see the history Now those
are commit items and relevant messages that you have given.
Now how to know who wrote when, what means
That's the command become show.
Show what reference,
like I want to see what happened with the commit
of 6 2 0 D two
per your reference is nothing but commit.
Id always, I want to see
what happened at this point of time.
Can you see from the top commit id?
Who is the author When it was done, what was the message?
Red line indicates what he removed.
Green line indicates what he added.
Is it what we did in the last session?
It was 40, we reduced to 20
and the text was saying login form,
but we changed it to edify elements login form.
Now everything is being tracked what you want,
everything you're seeing in the CLA as well, right?
Is what I mean
for this reason
because 90% of the time you spend on CLA
literally tell me what I cannot do with visual studio code.
Now everything I did
that I'm doing it here literally.
So this is additionally what you need to know
as a DevOps engineer.
Good, clear. Everyone got the point?
Alright, so to come out of it, say Q. Q,
understood.
Cleared everyone. We created the repository, we cloned it,
we got that repository to our system,
I added some new changes.

I staged them, I committed them.

Literally what did it now this change, will it be there in
uh, what do you say, GitHub?

No. How did you do it?

Synchronize. That's it. No.

Will you think, will it be there in GitHub right now?

Let's go ahead and check. Do you see
that DevOps branch chat script file or anything here?

No. No, I agree. No.

Ah, now how should I basically get the change means?

How did you do synchronized button? You clicked
Again.

I want to show you one more thing.

Everything is committed now, like earlier in the last part.

Uh, now I want this changes to update. Where to my GitHub
all changes talking.

Let me check. Uh, now it's not going to ask every day token.

One time you ask Alexa, sorry, one time you update,
you're done with already in the last session.

I updated now, so it's not gonna ask me once again, you see
what it did updated

and it is saying create a pull request if you want.

This changes to be going there

and it said

new branch called DevOps is updated.

Use it. Let's verify.

Did you get three branches?

See in the main branch we don't have any script
nor in the dev branch we got any script.

We have that script where
good enough, clear everyone.

I hope you understood. And same thing what I did earlier
commits everything in the graphical interface.

What I am showing you right now, I showed you in the CLA

what happened at this point of time, this idea.

I said GI show clicking. This is GI show
clear.

Everyone good? So this is
how I can manage the things from CLA.

Now we cannot create pull requests from C
because how does CLI have the interface of GitHub.
So there are things you definitely need to do via
GitHub only as a user.

Okay, now good. This is what I did.

Now also I can do one more thing.

Now the code is present in the DevOps branch.

Do I have the same code in dev branch? You only verify no.
If not, check.

Do I have it? No, no.

Oh, here also in the system, my script file is there.

In which branch?

Confirm?

I mean which branch?

No script. No,
no.

Because when, see, that's the concept.

When you create a branch, you are making a copy of it.

So already existing files came.

The new ones, what you do will not reflect
the same explanation we had earlier when the developer was
working.

Video: Git CLI Merge

And I merged because we protected the main branch.

Is the dev branch protected? No.

Right now I can directly do the merge locally if I want

you not directly merge to main branch.

Ah, you cannot directly merge.

If you want you can merge in the local
but it'll not reflect in the GitHub.

Got the point. See, right now in the dev,
I don't have any change rate.

Now where is the change present on the branch part?

DevOps. The command goes like this,
merge where the change is not there.

Sorry. Where the change is there.

Give the branch
here.

Now if I say Git merge main
what you're saying, take the changes from main branch
and update it in dev branch
but
nothing much different
because both are identical.

Whereas when I say Git
merge, which branch?

It's saying some message. You're updating something.
Just say colon
what it is saying.

One file script. Sh updated.

That's how you can do it.

In the CLA did merging via CLA.

The command is Git merge.

Good, clear. Everyone
like this I can do it via GitHub also.

I can go ahead and perform that action.

Okay, now I hope you guys are clear everyone
how the things are working via CLA.

Same thing. What I can do via graphical interface,
you can also perform those activities via

command and interface.

Ask. Good. This is what I just want
to give you a quick heads up.

No clear. Just try to understand
what we did in the last session and what we tried to do.

Okay? Yeah.

Video: Git Merge Conflicts

There is a concept
conflicts we call it.

So the scenarios like this,
let's assume there are multiple developers right now
only one developer is there.

Let's assume there are multiple developers who are working.

Now, generally what happens
if they're working on individual things,
now there will not be any problem.

But once you start working on common things,
then you'll get some conflicts.

We generally call them as merge conflicts.

Merge conflicts are basically issues of miscommunication.

Are the architecture not being properly implemented?

Then at that point of time you get these issues.

So by default will not get a conflict obviously
unless we create some issue in the project.

So what I'll do first I'll show you without
the conflicts, how the things work.

Then we'll introduce the conflicts, what the logic,
what I'm trying to say simple.

So what I'm going to do is let's assume
that we are in the dev branch right now.

You see what I'm going to, these were the files we have.

I created two branches, B one B two.

So assume right now, two developers are there in the system.

B one is one, developer B two is another devil. Their work,
let's assume for him some work was given
to work on a contact page

where I did the work on branch called B one.

All good Contact page in fact came up
going to B two.

Another developer
obviously contact will not be there
because it is isolated with developer one,
permitted developer one,
developer two, B one, B two,
contact payment, all different things.

Now end of the day, what I want them
to be updated in someplace,
let's say dev is like a parent branch for both of them.

Two developers created their own sub functionalities from
Dev and finally they should update it to dev only.

Right?

Where
do I have contact?

Neither payment. We need to merge it. Now merge.

Remember first come first.

So whoever comes first, their changes will be taken.

First
updated contact page
came, you can see it, right?

Clearly we have the contact page implemented, came up here,
same way
we do the next developer.

I said Now it is showing you
that you're merging B two into the devs.

Fine. Just sec. Colon WQ message.

Basically merge message, we call it payment page also updated. We got The payment pitch.

Any issue so far because requirement was clear.

Two different developers, two different things. Always good.

Now let's make a mess. Now what I'll do, just take your example.

Like right now, uh, 1130 we are having DevOps, let's say because of some miscommunication.

Uh, one sec help.

So now uh, the plan is to mess it up.

Now just assume like your class is on, we are having one class at 1130.

No problem. Let's say earlier you also observed like we had a class, right?

We had Python was there till equal.

So I need to just adjust. Yeah, exactly. Same Azure.

We have one batch coming up at nine.

Let's say it was like Azure batch and then again it's same, nine o'clock you have AWS.

Different trainers are there.

So two people are taking the session at same 9:00 AM.

Now I assume you guys are there for multi-cloud.

Now can you attend at the 9:00 AM Same a WS and Azure at the same time.

Isn't it a cloud conflict?

Same thing will also occur when you work with the code.

Why? Because of miscommunication.

Mismanagement, right? Did you understand the point?

What I'm saying here, same thing.

Whatever the issue that you get when you work, the same thing will also reflect in the code.

So here what you only said now first come first.
So get whoever comes first, update,
the second person will get the problem.
It already says, someone already said AWS, now you're coming
and saying again, Azure is GI human
to understand that AWS is correct or Azure is correct.
No, it's not a human, it's just a software.
Now technically what is merge copy pasting, isn't it?
Agree or not? Tell me what is merge doing
is taking the changes from one place,
applying it on another place,
meaning technically it is doing copy paste only end
of the day, but GIT does not have that intelligence
to say like okay, this is character, this is correct.
So what it does, you know it'll keep one separator
line in your file.
It say this is, this is change, this is, this is change.
What is correct? It is your headache.
Are you good with what I'm trying to say?
A merge conflict is nothing but it'll not update.
It'll stop in between
and it'll ask the user to fix the issue by hims,
if there is no issue merging is automatic.
If issue comes up, it'll turn into a manual merge
that basically we merge conflicts, they'll not come daily.
If the thing I said no miscommunication,
architecture not properly implemented,
right workflow assigned to multiple people simultaneously,
then you'll get these issues.
Uh, let's assume the same way we said like what?
While going on to this conversion port process, we said like
what at UH, 1130 DevOps batch, which is already there.
Now there are two salespeople who got
to know the information that there is one batch

of Azure at nine and also AWS eight, nine
and they convey the information to two different developers,
obviously as communicated they'll write the
code, let's implement it.

If not vi

and where am I doing it in the dev?

Understood. I'm going schedule ML.

It was already there. No issues with this.

Now the requirement was given
for two different developers to work with.

Two different things

as a norm.

What the developer does not reflect the work,
he'll create his own branch

Developer One,
same thing.

Now it's already there. So obviously update there only
so far no issue, right?

Because it's an isolated place. This guy done.

Second developer came into the picture.

Obviously he'll not see his change
because the branch concept itself is isolation.

Now clearly you can only observe like okay, this is a kind
of conflict

so far no issues, conflicts when they come, when you merge,
not when you commit, right?

See now in Azure branch, if you see
that's a story.

If you see the story in AWS,
if I see the story in Dell,
you didn't merge.

So no issues so far. Now let's do the merge
first.

Come first updated any problem.

All looks cool.

Same thing I did earlier with two different files.

Payment and contact. No issues.

But this time, same file all working on the same.

You see what already saying
merge conflict in the content schedule.

Automatic merging field.

If there is no conflict rate,
automatic merging will automatically be done.

Like you don't need any intervention. Now what happened?

It says no fixed conflicts, then commit.

The is commit is nothing but you do the merge technically.

Uh, let's see what happened with the file. Now
it added the separated lines
and it is saying this is what is there the status right now?

Now you are the one who need to fix.

Are it clear is what I'm trying to say. Now it is your call.

GI cannot do because how does GI know whether it's going
to start at nine AWS or Azure?

Now I can take a call here.

So when generally, who will fix the mo conflicts owners
because they're the ones who are assigning the work.

Actually now what?

I'll delete all these unwanted lines here.

Now I should take the call
issue fixed.

That's it. This is call fixing the conflicts.

That's it. Now you're done this simple.

See, no issues, nothing.

So I hope you understood the distinction.

When you work with same files, there is a chance
of conflict when you're working with same functionality
and like I said, now it'll not happen just like that.

Unless if there is some kind of gap in between communication

and your architecture not being properly implemented,
then you'll get this sort of issues here.
Everyone good? I hope you understood.

Video: Git Merge-Rebase

There is also a concept called rebase.
Okay? Merge rebase.
Technically speaking, the outcome for both of them is same.
What is Merge doing? Getting the
updates from one branch too.
Another branch, isn't it? Rebase will also do the same.
Then why? Both means the way
they function is a little bit different.
Outcome is same. The way the implementation
is there, it's a bit different.
You can actually understand only if you see it practically
take, if I say theoretical, it'll be lot confusing,
but I'll tell you what, like what's the story is you're
doing some work, you want to track each
and everything, how the things changed.
You do merge in merging. History will be big.
Rebase also does the same thing,
but it'll rewrite the changes so
that history will be short.
Am I clear everyone? Like I said,
now if you see it only then you'll understand
the difference.
Actually this is not required,
but generally they'll ask in interviews to confuse you
and get, they'll ask what's the difference between rebases
and merge, how they're different.
So basically the his,

the only difference is the history

line is going to be different.

Let me show you one example.

Uh, I think I have some commands for to,

if not, I'll not do like this.

Okay? I'll just go back to my desktop again.

Dot, dot one back

directly, I mean the desktop, right?

Uh, so how I can differentiate between, uh, merging

and uh, what do you say?

Rebates, right? I'll create two different projects.

I'll do same work. One using rebase. One using much, much.

Then you'll see the difference.

I'm going with a command called in it.

It'll create a repository.

Earlier you create a repository in GitHub.

Now, now I'm creating a local repository. You can do it.

Yes,

it created a repository.

That's it. Same way.

Two different projects. I got understood Rick.

Instead of cloning, I'm creating my own repository here.

Only local repositories we call it.

First I'll do the merging,

which you are already familiar with.

Okay, now I'm gonna say

Touch.

I'm creating on file.

Okay? I, I did one comment with a file call Amber. I'm

creating a branch called feature

default.

Branch name in the local repository is master not the main.

Hmm. See one small difference.

M1, M two F. Technically how many changes?

I did three changes. No three files.

The third file to come here, I need to do the merge.

Agree or not, which branch

done

and one M to F.

Technically how many commit should be there? Three. Right?

Three files, three commits,

but I got four commits.

The concept of merging is when you merge
a linear line will to maintain this history,
it'll keep on creating.

Commit. I,

okay, you observe uh, what is this
moderate, same thing.

Literally. Now I'll go back. I'll do exactly same.

Exactly same. Just observe

where Rebase, same what I did.

Any difference in the operations.

Literally what I did there, I just repeated it.

Only difference differences. Instead
of saying merge, I'm saying what?

Rebase both does the same. Let's verify.

Done what is saying successfully. Rebased and updated.

Did I miss anything? I got same. F1, M1, M two in the merge.

Also, I got the same right

now technically it does not maintain
that entire history this way.

What happens, history will be more clean and tidy.

Merge will keep the entire history.

How it got changed, how you can check.

That means there is one command actually

Is the command.

I'll show you. This is Rebase project, right?

I'll keep in your document later you can verify

log only with graph.

You can see one single
line

now said merge.

Same command. I'm running.

It shows you give, you came out, you did something.

Then you came back. That history will not be there.

Now I understood how it is functioning.

Basically they both do the same work,
but how you want your history
to be represented, you need to take the call.

You want full fledged history. Merge is better.

That's why generally merge is called as a safer option.

If you want, you can do re rebates when,
when you think like there are so many unwanted things which
are being done in between,
which is does not help other people.

Also, rebase

clearance, everyone what I'm trying to say.

So that is what generally rebase and mech are used.

One is maintaining a proper entire history like
how the things are going up.

Rebase will cut down and give you a tidy history.

What changes just happened?

Claris, uh, now I know this might really be
not making sense when I'm doing DevOps,
but it'll help you in the long run.

When you actually do a lot of coding, I'm pretty much sure.

Eventually you'll end up doing a lot
of coding in DevOps also.

I said, no, you got a couple of tools, like 70%
of them are writing code only at that point of time.

All these techniques can help clear everyone I got.

I hope you understood the point.

It's now clear how developers are writing the code
and how do they manage the code.

These are all the techniques they use
and literally what you saw, everything so far,
you can really use it in the future.