



Web: Inceptez.com Mail: info@inceptez.com Call: 7871299810, 7871299817

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Git with Eclipse Integration.....	Error! Bookmark not defined.

CICD – Continuous Integration & Continuous Delivery/Deployment (DEVOPS)

What SDLC model or how you are productionizing the end to end development code?

Tell all SDLC stories and importantly “After requirement, dev, testing, I commit & Push the code into GitHub and then Jenkins pipeline configured by our Devops team will move the code to GCP bucket, so that Airflow can pick it and run the Data pipelines in the Prod env on the predefined schedule... Please correct me.

SDLC - Software Dev Life Cycle.

- 1) Business Problem / Req
- 2) Req - Gathering
- 3) Req - Analysis
- 4) Design → HLD
└ LLD - MD, Workflow
- 5) DModel / Architectures / Data Flow Dia
 └ Ecom.
 └ LDM.
 └ PDM.
- 6) Development → WBS - Work Breakdown Structure
 └ Epics / Stories / Tasks ...
- 7) Testing (PRHT, IT, DR, PT, RT, SIT, UAT, QC, Auditing)
- 8) Deployment (Manual / Automated)
 Dev + PS DevOps / CI / CD
- 9) Post Prod Validation. / Backout & Rollback.
- 10) Monitoring & PS

BA, C,
PM, PM,
PMO,
Architects,
DSA,
Tools

Scrum Master/ Agile coach

1. SDLC model – **Agile (Sprint (releases) planning)** & Scrum/RAD/Waterfall/V-Model
2. Daily Standup calls we will have in the morning (getting work assigned/discuss about the work we are going to do) and evening (questions/doubts/challenges/show stoppers)

3. Release Cycle – Biweekly Sprints created with different Jira ticket – user story points (requirement) 3/5/8/13 (Work breakdown structure) – split into multiple sub tasks.. Stories can be put in the backlog to execute later (backlog), spike story (came adhoc based on priority we will execute).

Informal (adhoc) –

Leads/Clients provide/Source systems/Design team/allocate some work mails/chats/adhoc calls -> Developer/Data Analyst/TL/Architech -> (extract data -> filtration -> curation) .hql/.sql/.py/.bql ->
Validation/Review/UnitTesting/QA/~~Testing/UAT~~ -> upload the code Dev Server/GDrive/Mail/Chat window -> Prod Deployment team/Onshore move the code to -> Production -> Prod Deployment team use the Release document and start the code to run on a defined schedule.

Formal –

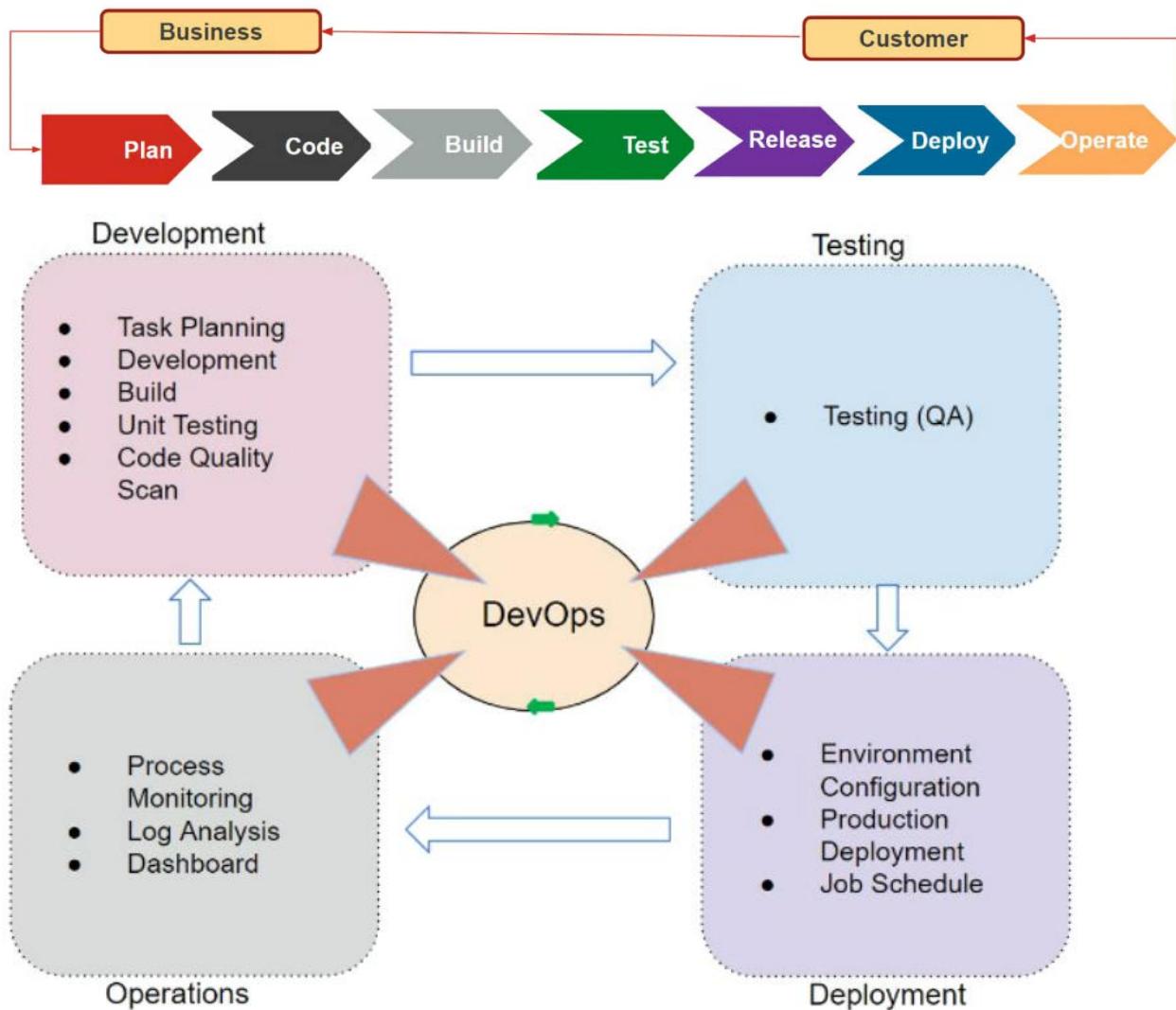
Confluence HLD (Business team requirements) -> LLD documents (Artifacts RACI charts, WBS, DFD, ER Diagrams, Mapping Documents etc.,) (Enablement team/Data modelers/Design team/DSA/TL/BA) ->

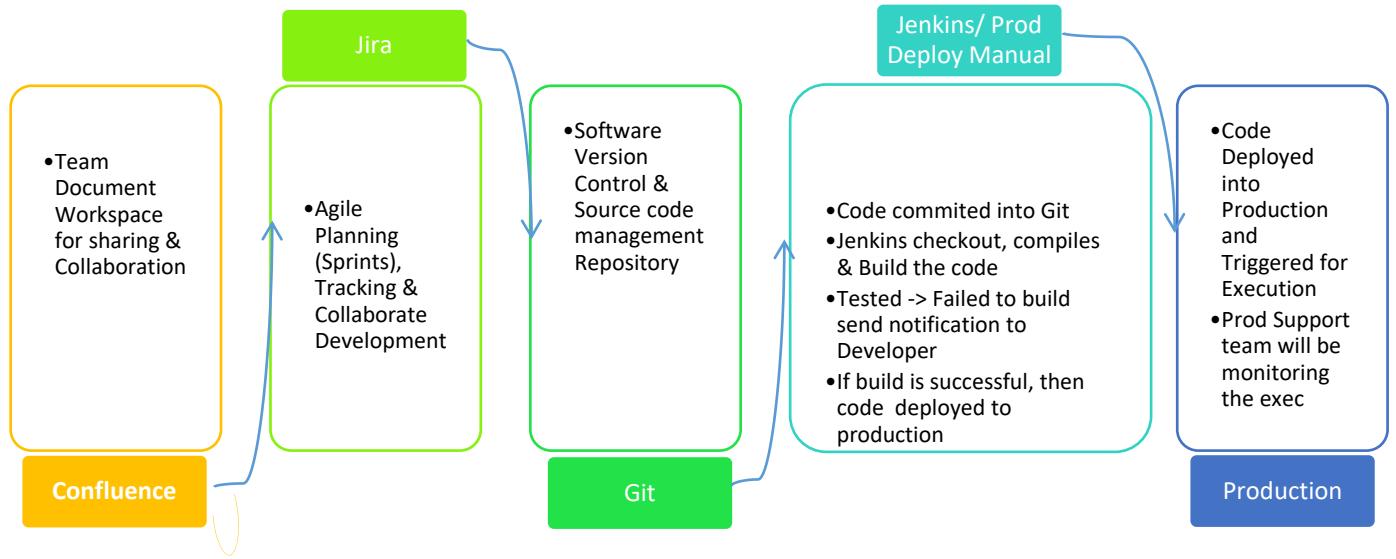
Jira stories (Epics -> Functional Stories & Technical Stories) assigned (PMO assigns Developers/Leads/Architects/Managers)-> Grooming call (Scrum Master or Agile coach will track the progress Managers/clients/architects/Developers) -> **Jira** Stories divided into (Tasks) (Tasks assigned to TLs/Architects/Data engineers/Data Analysts) -> Development (Data engineer) -> **Jira** tickets updated (open-> ready for iteration -> inprogress->cancel/ready for prod(RFP)->Done) (Data engineers updates comments and change status on a regular basis)->

Git/Github/VCS/SCM/bitbucket (**Dev/feature** branch) (Data engineer)-> Peer Review (Lead/Data engineer)-> Unit Testing/test evidence (Data engineer)-> dry run + Integration Testing (Data engineer/Testing team) -> Checkout code from **Git** and deploy into UAT/Pre Prod Server (Data engineer)-> Run the code in UAT (Data engineer)-> Pre Prod/UAT Validation (Design Team/Enablement Team/Data Solution Architects/Leads/Architects) -> Checkin the final code to **Git** (**Master/Main** branch) (Data engineer)->

Jenkins Pipeline (Checkout code from Git -> Build of code -> Test of code)
 (DevOps engineer team) -> **Jenkins Pipeline** (Shell Scripts/Terraform/AWS Code Deploy/GCP Workflow Manager/Azure Devops components) do a Prod Deployment (DevOps engineer)-> Production support team monitor

Leads/Clients provide/allocate some work through (Confluence) Atlassian ->



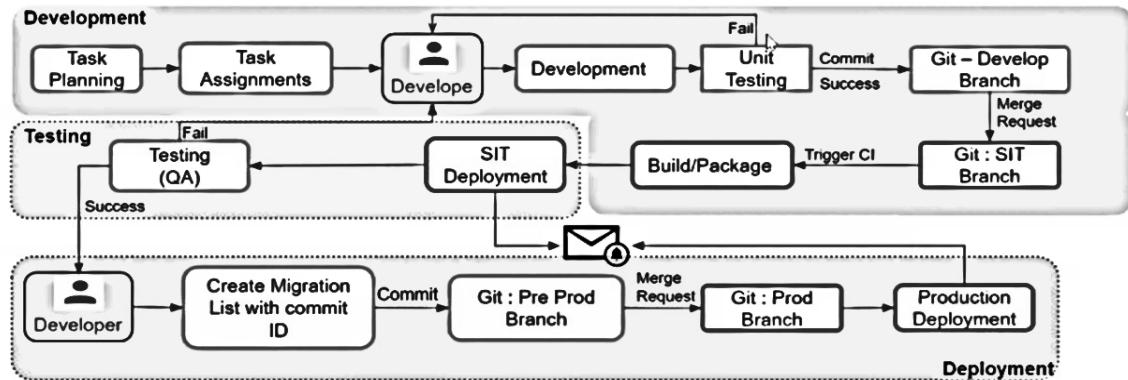


Confluence – Knowledge base (documents, stories, supportive content, release steps, back out scripts, support steps)

Jira - Epics (larger stories Dev/Maintenance/Enhance/Bugs) Stories --> Tasks/Issues -> Subtasks (Stories)

Git - GitHub is a code hosting platform for collaboration and version control. GitHub lets you (and others) work together on projects.

Jenkins is an open-source Continuous Integration and Continuous Deployment (CI/CD) tool for automating the software development life cycle (SDLC).



Agile – Sprints (release cycle) consist of stories and epic can roll over to multiple sprint. Sprint cycle can be 2 weeks or 5 days etc depending on project model

Prerequisites (Install the following tools in Windows):

1. Install Github for desktop (Git Cli, Git Plugins for Pycharm, Git desktop, Git Web Gui)
<https://desktop.github.com/>
2. Install java 11 & Jenkins
https://drive.google.com/drive/folders/1eomjZZZ0sf9UvlgmVPD4DoCVa3_U5elt?usp=share_link
3. Install and Configure Pycharm for windows
https://docs.google.com/document/d/1tiMiDEmsKav03khFLVxFVqbgHQx_GY-V/edit?usp=share_link&ouid=106781519779062697823&rtpof=true&sd=true
4. Link for Confluence and Jira
<https://www.atlassian.com/software/confluence/free>
5. Link for Git
<https://github.com/mohamedirfan>
6. Link for Jenkins
<https://www.jenkins.io/download/thank-you-downloading-windows-installer-stable>

Confluence:

Confluence is a team workspace where knowledge and collaboration meet. Dynamic pages give your team a place to create, capture, and collaborate on any project or idea.

<https://www.atlassian.com/software/confluence/free>

The image shows the Atlassian Confluence landing page. On the left, there's a large graphic of a wall being built with various colored blocks (blue, yellow, orange) representing different types of content like images and documents. Below this graphic, the text "Trusted by over 40,000 teams worldwide" is displayed, followed by logos for HubSpot, docker, twilio, and GoPro.

On the right, a white rectangular box contains the following content:

- Welcome back, Mohamed**
- Work email ***:
- [Sign in with a different Atlassian account](#)
- Claim your site ***:
- By clicking below, you agree to the Atlassian Cloud Terms of Service and Privacy Policy.
- Agree** (button)
- NO CREDIT CARD REQUIRED**
- ATLASSIAN**



Invite your teammates

Bring your team along for the ride!

mohamedirfan@gmail.com

info@inceptez.com

inceptezwebd35@gmail.com

Let my teammates invite other people

You can change these settings at any time.

Continue

Create (custom/from template/import) -> Publish the project -> Share to users

Jira:

Jira is a software application used for issue tracking and project management. The tool, developed by the Australian software company Atlassian

Issue Types

Jira can be used to track many different types of issues. The currently defined issue types are listed below. In addition, you can add more in the administration section.

For Regular Issues

<input checked="" type="checkbox"/> Epic	A big user story that needs to be broken down. Created by Jira Software - do not edit or delete.
<input checked="" type="checkbox"/> Improvement	An improvement or enhancement to an existing feature or task.
<input checked="" type="checkbox"/> Task	A small, distinct piece of work.
<input checked="" type="checkbox"/> New Feature	A new feature of the product, which has yet to be developed.
<input checked="" type="checkbox"/> Bug	A problem or error.

For Sub-Task Issues

<input checked="" type="checkbox"/> Sub-task
--

Priority Levels

An issue has a priority level which indicates its importance. The currently defined priorities are listed below. In addition, you can add more priority levels in the administration section.

<input checked="" type="checkbox"/> Highest	This problem will block progress.
<input checked="" type="checkbox"/> High	Serious problem that could block progress.
<input checked="" type="checkbox"/> Medium	Has the potential to affect progress.
<input checked="" type="checkbox"/> Low	Minor problem or easily worked around.
<input checked="" type="checkbox"/> Lowest	Trivial problem with little or no impact on progress.

Statuses

Each issue has a status, which indicates the stage of the issue. In the default workflow, issues start as being Open, progressing to In Progress, Resolved and then Closed. Other workflows may have other status transitions.

OPEN	The issue is open and ready for the assignee to start work on it.
IN PROGRESS	This issue is being actively worked on at the moment by the assignee.
REOPENED	This issue was once resolved, but the resolution was deemed incorrect. From here issues are either marked assigned or resolved.
RESOLVED	A resolution has been taken, and it is awaiting verification by reporter. From here issues are either reopened, or are closed.
CLOSED	The issue is considered finished, the resolution is correct. Issues which are closed can be reopened.
BUILDING	Source code has been committed, and JIRA is waiting for the code to be built before moving to the next status.
BUILD BROKEN	The source code committed for this issue has possibly broken the build.
TO DO	
IN REVIEW	
DONE	

Git-Hub – WebUI, Desktop , IDE (Eclipse) & CLI

GIT (2005) – Version control

A system that keeps records of your changes
Allows for collaborative development
Allows you to know who made what changes and when
Allows you to revert any changes and go back to a previous state

Distributed version control
Users keep entire code and history on their local machines
• Users can make any changes without internet access
• (Except pushing and pulling changes from a remote server)

GITHUB - 2008

What is GitHub?

- www.github.com
- Largest web-based git repository hosting service
 - Aka, hosts 'remote repositories'
- Allows for code collaboration with anyone online
- Adds extra functionality on top of git
 - UI, documentation, bug tracking, feature requests, pull requests, and more!



<https://desktop.github.com/>
<https://github.com/yourname>



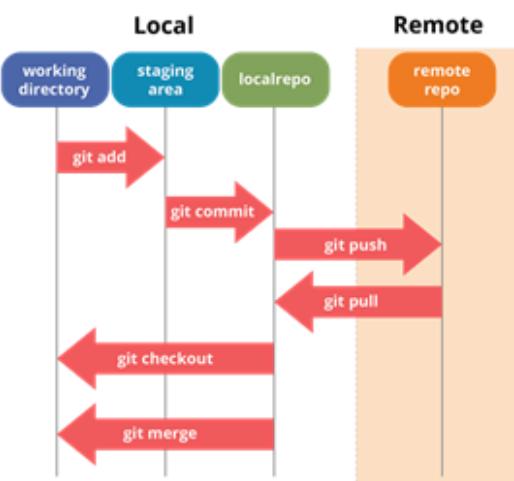
Developer create code and wanted to share the final code into Github directly to Master.

1. Create a repository
2. Clone into local
3. Open in Github Desktop
4. Create a file and add inside the staging area from working directory
5. Do a local Commit to master
6. Push to github by clicking push to origin

Developer modify the code and wanted to share the code into his own branch and get reviewed and merged to the master branch.

1. Create a Branch in local or remote, choose the new branch, go to repository > pull
2. Modify the local code
3. Do a local commit to a new branch, then push origin to remote
4. Create a pull request (compare & pull request)
5. Review the code with comments.
6. Do merge (conform merge) and commit the changes from your branch to the master branch
7. Open and merge a pull request > branch to the master

Working Directory - Working Directory which holds the actual files what you have coded.
A staging step (index) in git allows you to continue making changes to the working directory
Local Repo (Head) - when you decide to interact with version control repository (locally in your machine), it allows you to record changes in small commits.
Remote Repo - To send the changes to your remote repository, execute git push



<https://desktop.github.com/>

Welcome to GitHub Desktop

GitHub Desktop is a seamless way to contribute to projects on GitHub and GitHub Enterprise Server. Sign in below to get started with your existing projects.

New to GitHub? [Create your free account.](#)

[Sign in to GitHub.com](#)

After signin with your username and password

Configure Git

This is used to identify the commits you create. Anyone will be able to see this information if you publish commits.

Name

mohamedirfan

Email

mohamedirfan@gmail.com

[Continue](#)

[Cancel](#)

File Edit View Repository Branch Help

Let's get started!

Add a repository to GitHub Desktop to start collaborating

[Create a tutorial repository...](#)

[Clone a repository from the Internet...](#)

[Create a New Repository on your hard drive...](#)

[Add an Existing Repository from your hard drive...](#)

Filter your repositories

Your repositories

- [mohamedirfan/hive](#)
- [mohamedirfan/https---github.com-basithmohamed-izrepo](#)
- [mohamedirfan/inceptez-scala](#)
- [mohamedirfan/iz-scala](#)
- [mohamedirfan/izrepo](#)
- [mohamedirfan/izwd19](#)
- [mohamedirfan/izwe28](#)

 Pull requests Issues Marketplace Explore

fied emails. We recommend [verifying](#) at least one email.
support team verify ownership if you lose account access and allows you to receive all the notifications you ask for.

⚠ The password you provided is weak and can be easily guessed. To increase your security, please [change your password](#) as soon as possible.
Read our documentation on [safer password practices](#).



Overview **Repositories 5** Projects 1 Stars 0 Followers 0 Following 0

Find a repository... Type: All ▾ Language: All ▾ **New**

inceptez-scala 

scala workouts

Scala Apache License 2.0 Updated 7 days ago

<https://github.com/basithmohamed-izrepo> 

Updated 7 days ago 

Activate Windows

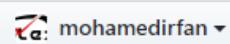
| https://github.com/new

Create a new repository

A repository contains all project files, including the revision history.

Owner

Repository name *



/ izrepo



Great repository names are short and memorable. Need inspiration? How about [supreme-octo-adventure](#)?

Description (optional)



Public

Anyone can see this repository. You choose who can commit.



Private

You choose who can see and commit to this repository.

Initialize this repository with a README

This will let you immediately clone the repository to your computer. Skip this step if you're importing an existing repository.

Add .gitignore: Scala ▾

Add a license: Apache License 2.0 ▾



Create repository

ub, Inc. [US] | https://github.com/mohamedirfan/izrepo

The password you provided is weak and can be easily guessed. To increase your security, please [change your password](#) as soon as possible.

Read our documentation on [safer password practices](#).

mohamedirfan / izrepo

Code Issues Pull requests Projects Wiki Insights Settings

No description, website, or topics provided. Edit

Manage topics

1 commit 1 branch 0 releases 1 contributor

Branch: master New pull request Create new file Upload files Find file Clone or download

Clone with HTTPS Use SSH
Use Git or checkout with SVN using the web URL.
<https://github.com/mohamedirfan/izrepo.git>

Open in Desktop Download ZIP

Activate Wind Go to Settings to ↗

izrepo

Open in Desktop

File -> options -> signin

File -> clone repository -> url

File Edit View Repository Branch Help

Current repository repo2 Current branch master Pull origin Last fetched 7 minutes ago

Changes History Select branch to compare... committed to branch1 created the testdata.txt

moohamedirfan committed f5a599a 1 changed file

testdata.txt + @@ -0,0 +1 @@ +first commit @@

Clone a repository

GitHub.com Enterprise URL

Repository URL or GitHub username and repository (hubot/coo1-repo)
<https://github.com/mohamedirfan/izrepo>

Local path C:\Users\inceptez\Documents\GitHub\izrepo Choose...

Clone Cancel

> This PC > Documents > GitHub > izrepo

Name	Date modified	Type	Size
code1	2/16/2019 11:18 PM	Text Document	1 KB
LICENSE	2/16/2019 11:18 PM	File	12 KB
README.md	2/16/2019 11:18 PM	MD File	1 KB

code1 - Notepad

File Edit Format View Help

Initial content

Current repository: izrepo Current branch: master Fetch origin: Last fetched 5 minutes

Changes 1 History code1.txt

1 changed file

code1.txt	1	@@ -0,0 +1 @@ +Initial content
-----------	---	-----------------------------------

initial commit to staging

Description

Commit to master

Screenshot of GitHub desktop application interface showing a repository named "izrepo".

Top navigation bar:

- File
- Edit
- View
- Repository
- Branch
- Help

Current repository: izrepo

Current branch: master

Pushing to origin: Total 3 (delta 1), reused 0 (delta 0)

Changes tab (selected): 0 changed files

No local changes message: You have no uncommitted changes in your repository! Here are some friendly suggestions for what to do next.

- Push 1 commit to the origin remote: You have one local commit waiting to be pushed to GitHub. Always available in the toolbar when there are local commits waiting to be pushed or **Ctrl + P**. **Push origin**
- View the files in your repository in Explorer: Repository menu or **Ctrl + Shift + F**. **Show in Explorer**
- Open the repository page on GitHub in your browser: Repository menu or **Ctrl + Shift + G**. **View on GitHub**

GitHub URL: GitHub, Inc. [US] | https://github.com/mohamedirfan/izrepo

Repository details:

- mohamedirfan / izrepo
- Unwatched by 1 user
- Starred by 0 users
- Forked by 0 users

Repository statistics:

- Code: 2 commits
- Issues: 0
- Pull requests: 0
- Projects: 0
- Wiki
- Insights
- Settings

No description, website, or topics provided. **Edit**

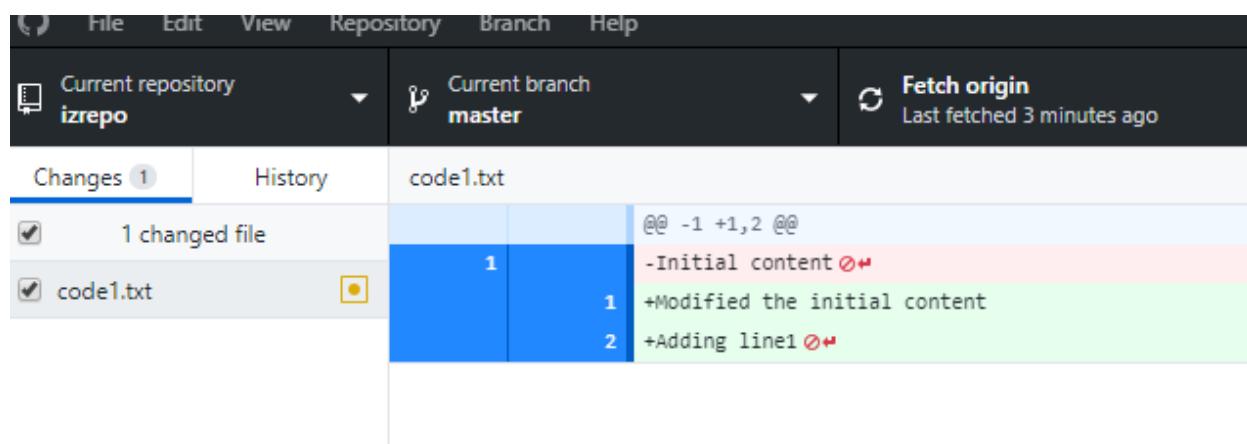
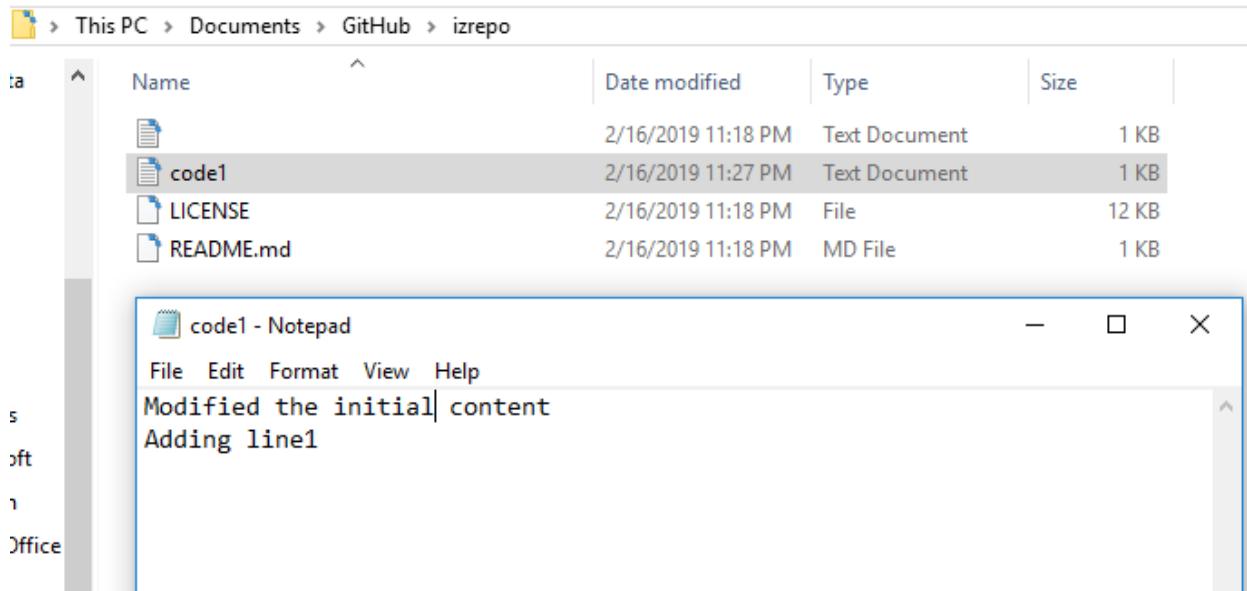
Manage topics

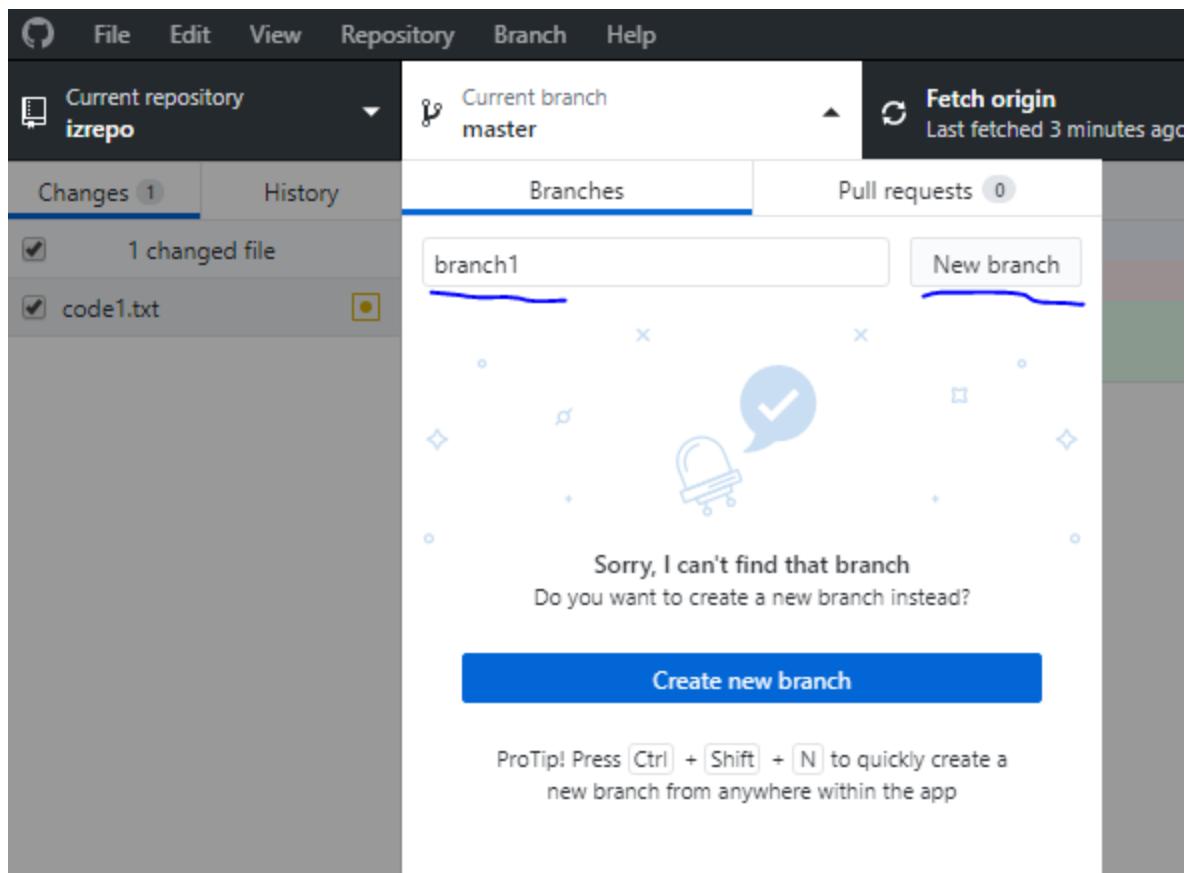
Branch: master

Latest commit c4e1461 a minute ago

File	Commit Message	Time
.gitignore	Initial commit	12 minutes ago
LICENSE	Initial commit	12 minutes ago
README.md	Initial commit	12 minutes ago
code1.txt	initial commit to staging	a minute ago

Clone or download





The screenshot shows a GitHub commit interface. At the top, the repository is set to "izrepo" and the branch is "branch1". A "Publish branch" button is available to publish the current branch to GitHub.

The main area displays the changes made to "code1.txt". There is one changed file, "code1.txt", which contains the following content:

```
@@ -1 +1,2 @@
-Initial content
+Modified the initial content
+Adding line1
```

A modal window is open at the bottom left, titled "Commit to branch1". It contains a text input field with the placeholder "commiting to branch1" and a "Commit to branch1" button.

Screenshot of GitHub desktop application interface showing a repository named "izrepo" with a branch named "branch1".

The application toolbar includes: File, Edit, View, Repository, Branch, Help. The current repository is "izrepo" and the current branch is "branch1". A "Publish branch" button is available.

The main view shows a message: "No local changes" with a note: "You have no uncommitted changes in your repository! Here are some friendly suggestions for what to do next." Suggested actions include "Publish your branch", "View the files in your repository in Explorer", and "Open the repository page on GitHub in your browser".

The GitHub web interface shows the repository details:

- Repository owner: mohamedirfan / izrepo
- Branch: master (selected)
- Commits: 2
- Branches: 1
- Releases: 0
- Contributors: 1
- Licenses: Apache-2.0

Your recently pushed branches:

- branch1 (less than a minute ago) Compare & pull request
- basithmohamed initial commit to staging
- .gitignore Initial commit 18 minutes ago
- LICENSE Initial commit 18 minutes ago
- README.md Initial commit 18 minutes ago
- code1.txt initial commit to staging 7 minutes ago

Buttons at the bottom of the GitHub interface include: Unwatch, Star, Fork, Edit, New pull request, Create new file, Upload files, Find file, and Clone or download.

committing to branch1 #1

 Open mohamedirfan wants to merge 1 commit into master from branch1

Conversation 0 Commits 1 Checks 0 Files changed 1 +

 mohamedirfan commented just now

Owner +  ...

compare the code and merge to master

 committing to branch1 b5f51e0

Add more commits by pushing to the branch1 branch on mohamedirfan/izrepo.

 Continuous integration has not been set up
Several apps are available to automatically catch bugs and enforce style.

 This branch has no conflicts with the base branch
Merging can be performed automatically.

 Merge pull request You can also open this in GitHub Desktop or view command line instructions.

Reviewers
No reviews

Assignees
No one—assign yourself

Labels
None yet

Projects
None yet

Milestone
No milestone

Notifications

 Unsubscribe

commiting to branch1 #1

 Open

mohamedirfan wants to merge 1 commit into master from branch1

 Conversation 0

 Commits 1

 Checks 0

 Files changed 1



mohamedirfan commented 2 minutes ago

Owner +  ...

compare the code and merge to master

 committing to branch1

b5f51e0

Add more commits by pushing to the branch1 branch on mohamedirfan/izrepo.



Merge pull request #1 from mohamedirfan/branch1

commiting to branch1

 Confirm merge

 Cancel

 GitHub, Inc. [US] | <https://github.com/mohamedirfan/izrepo/pull/1>

commiting to branch1 #1

 Merged

mohamedirfan merged 1 commit into master from branch1 just now

 Conversation 0

 Commits 1

 Checks 0

 Files changed 1



mohamedirfan commented 3 minutes ago

Owner +  ...

compare the code and merge to master

 committing to branch1

b5f51e0

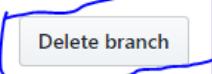
 mohamedirfan merged commit 313c4c8 into master just now

 Revert



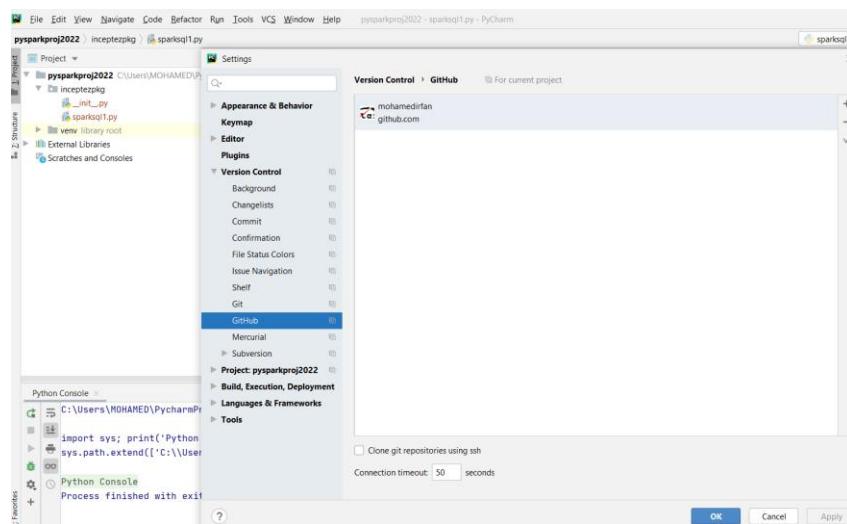
Pull request successfully merged and closed

You're all set—the branch1 branch can be safely deleted.

 Delete branch

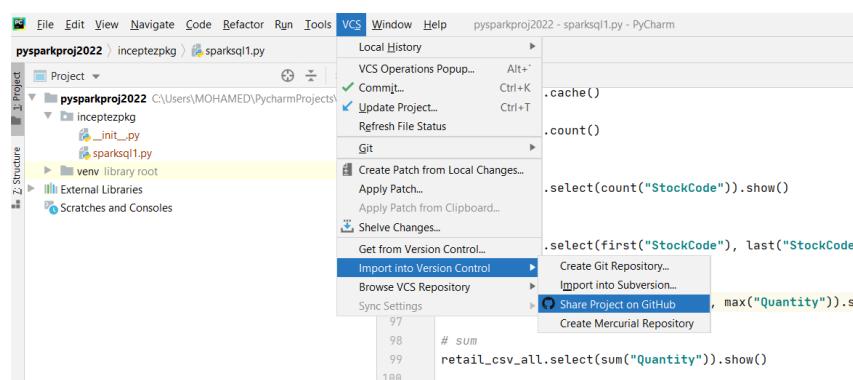
Git PyCharm Integration

1. Login to <https://github.com>
2. <https://github.com/settings/tokens>
3. Generate new token (Classic) -> add some name to the note
 1. repo - select everything
 2. gist - select everything
 3. org - select only read:org
4. Pycharm -> file -> setting -> version control -> github -> choose token option and enter the token



Share the project into Git:

1. VCS -> Import into Version Control -> Share Project on Github

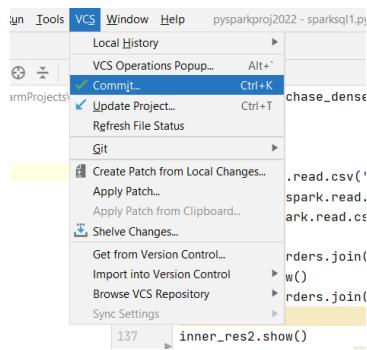


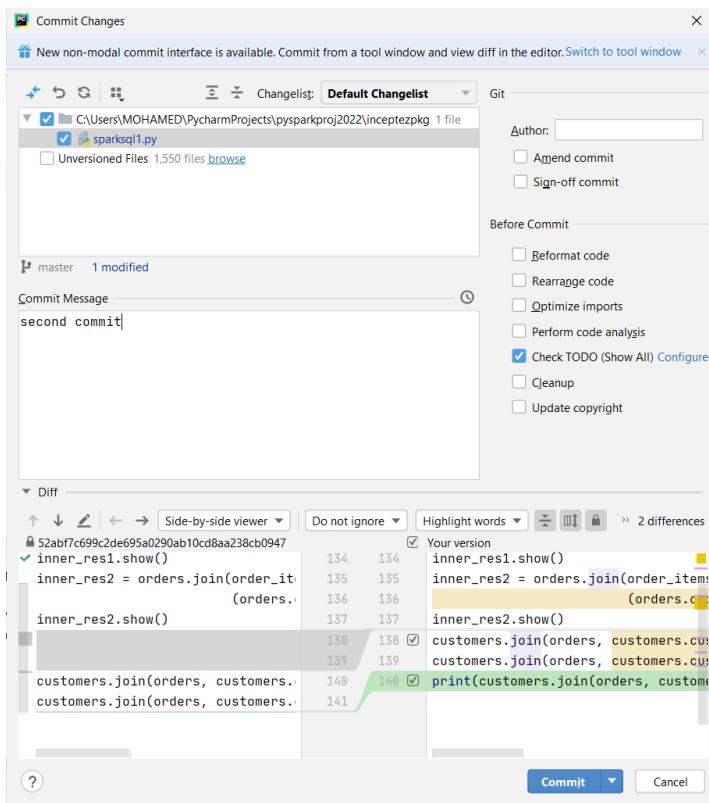
```

85     retail_csv_all.cache()
86
87     retail_csv_all.count()
88
89     # count
90     retail_csv_all.select(count("StockCode")).show()
91
92     # first & last
93     retail_csv_all.select(first("StockCode"), last("StockC
94
95     # min and max
96     retail_csv_all.select(min("StockCode"), max("StockC
97
98     # sum
99     retail_csv_all.select(sum("StockCode"))
100
101    # converting existing
102    # this will work on
103    retail_csv_updated =
104

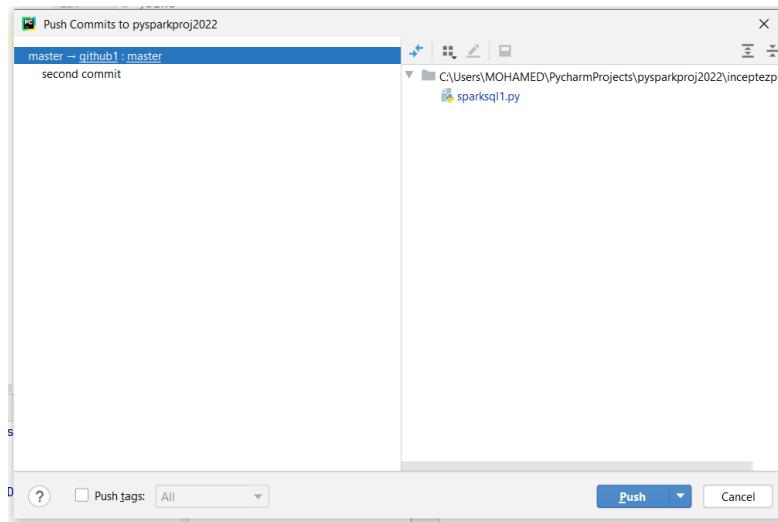
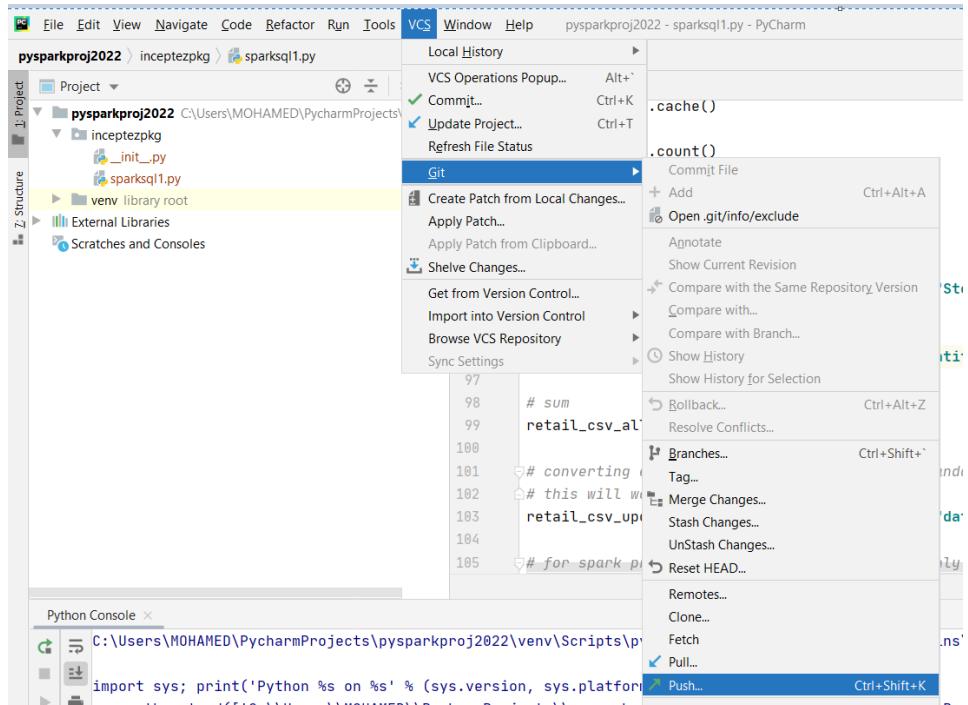
```

2. Do Some changes in the code -> VCS -> **execute the commit** (to commit the code to the staging area)





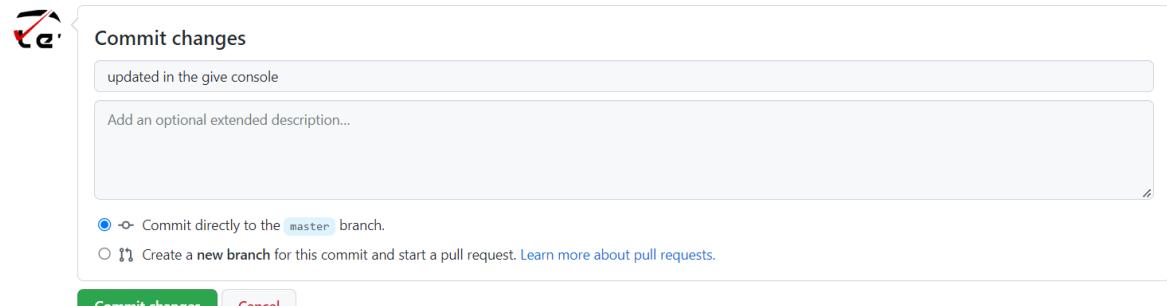
3. VCS -> execute the Push (to push the code to the internet Git repo)



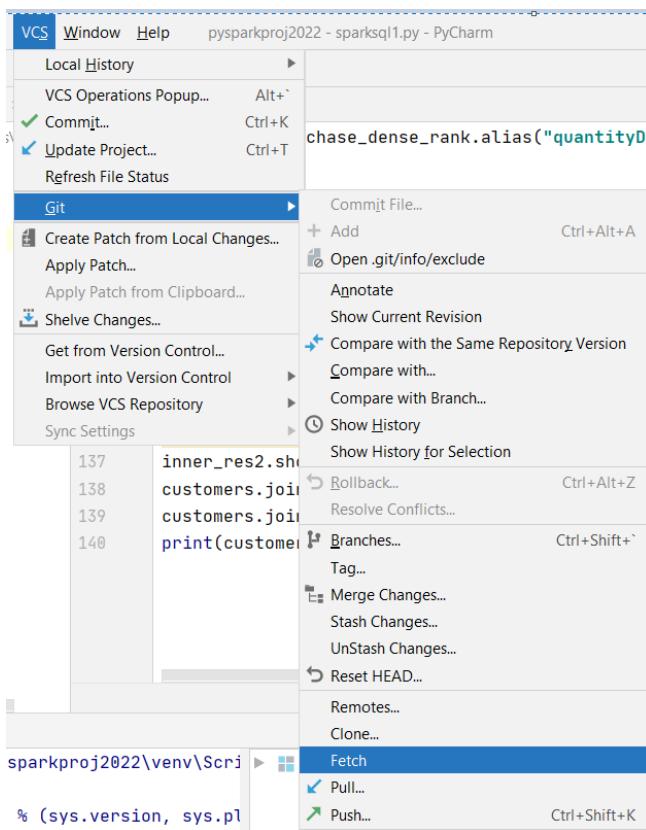
Pulling the Code from Git:

1. Edit the code in the Github console

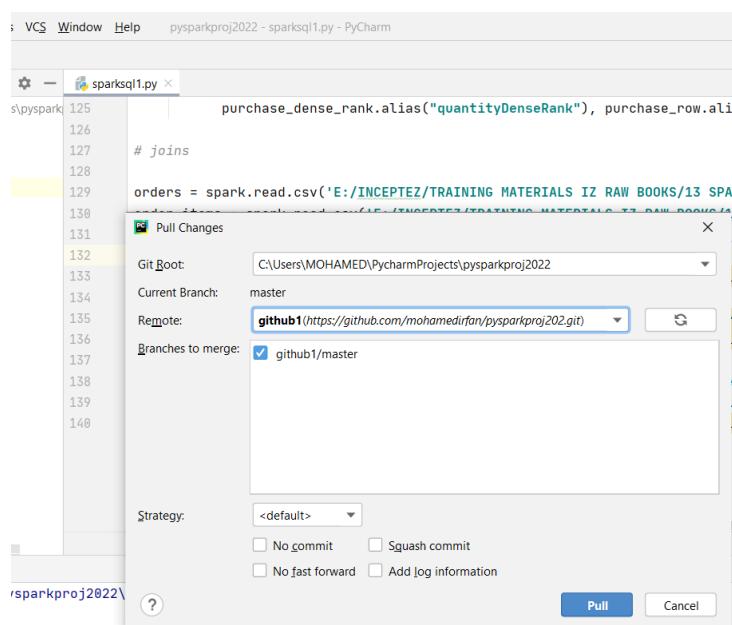
```
129 orders = spark.read.csv('E:/INCEPTEZ/TRAINING MATERIALS IZ RAW BOOKS/13 SPARK/PYSPARK/PYSPARK_2022/data/orders.csv',header=True,inferSchema=True)
130 order_items = spark.read.csv('E:/INCEPTEZ/TRAINING MATERIALS IZ RAW BOOKS/13 SPARK/PYSPARK/PYSPARK_2022/data/order_items.csv',header=True,inferSchema=True)
131 customers = spark.read.csv('E:/INCEPTEZ/TRAINING MATERIALS IZ RAW BOOKS/13 SPARK/PYSPARK/PYSPARK_2022/data/customers.csv',header=True,inferSchema=True)
132
133 inner_res1 = orders.join(order_items, orders.order_id == order_items.order_item_order_id)
134 inner_res1.show()
135 inner_res2 = orders.join(order_items, (orders.order_id == order_items.order_item_order_id) &
136                         (orders.order_id == order_items.order_item_order_id))
137 inner_res2.show()
138 customers.join(orders, customers.customer_id==orders.order_customer_id, 'left').show()
139 customers.join(orders, customers.customer_id==orders.order_customer_id, 'right').show()
140 print(customers.join(orders, customers.customer_id==orders.order_customer_id, 'left').count())
141 print(customers.join(orders, customers.customer_id==orders.order_customer_id, 'right').count())
```



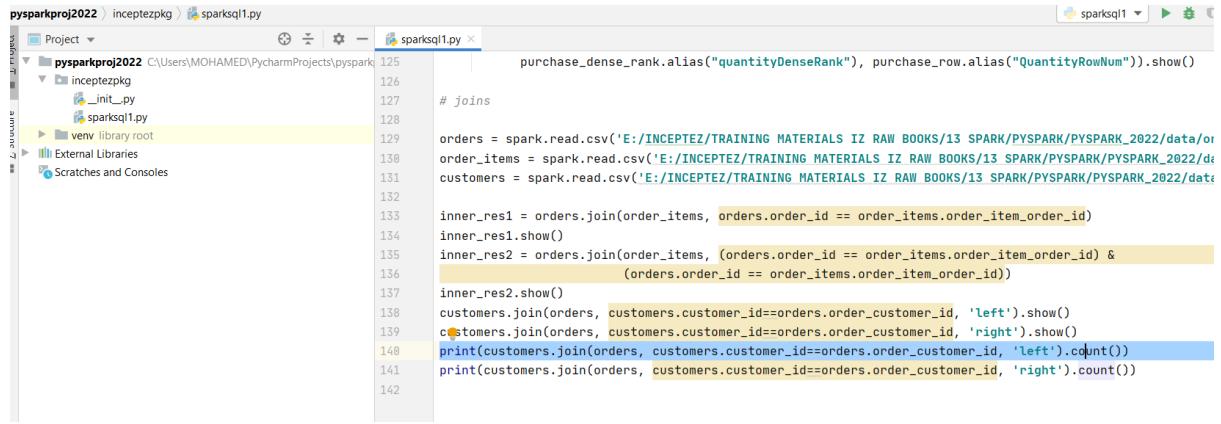
2. VCS -> Git -> Fetch(to fetch the code from the Git)



3. VCS -> Git -> Pull(to Pull the code from the Git)

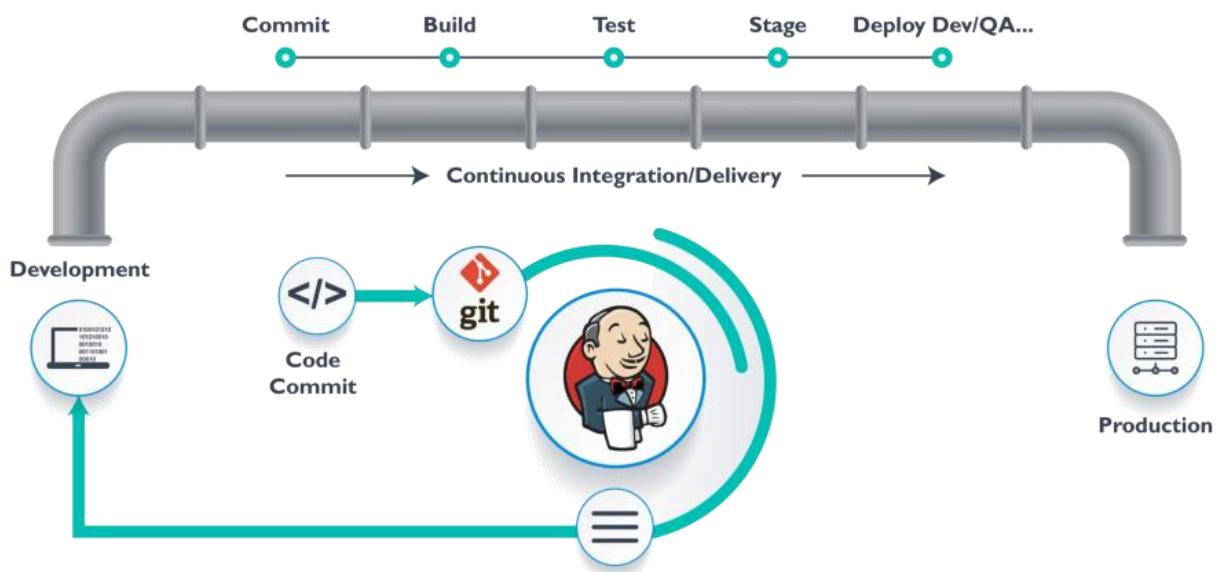


4. See the modified code in the Pycharm



```
pysparkproj2022 > inceptezpkg sparksql1.py
  Project  sparksql1.py
  pysparkproj2022 C:\Users\MOHAMED\PycharmProjects\pyspark 125 purchase_dense_rank.alias("quantityDenseRank"), purchase_row.alias("QuantityRowNum")).show()
  inceptezpkg
    __init__.py
    sparksql1.py
  venv library root 126
  External Libraries 127
  Scratches and Consoles 128
# joins
129 orders = spark.read.csv('E:/INCEPTEZ/TRAINING MATERIALS IZ RAW BOOKS/13 SPARK/PYSPARK/PYSPARK_2022/data/or
130 der_items = spark.read.csv('E:/INCEPTEZ/TRAINING MATERIALS IZ RAW BOOKS/13 SPARK/PYSPARK/PYSPARK_2022/d
131 customers = spark.read.csv('E:/INCEPTEZ/TRAINING MATERIALS IZ RAW BOOKS/13 SPARK/PYSPARK/PYSPARK_2022/d
132
133 inner_res1 = orders.join(order_items, orders.order_id == order_items.order_item_order_id)
134 inner_res1.show()
135 inner_res2 = orders.join(order_items, (orders.order_id == order_items.order_item_order_id) &
136                           (orders.order_id == order_items.order_item_order_id))
137 inner_res2.show()
138 customers.join(orders, customers.customer_id==orders.order_customer_id, 'left').show()
139 customers.join(orders, customers.customer_id==orders.order_customer_id, 'right').show()
140 print(customers.join(orders, customers.customer_id==orders.order_customer_id, 'left').count())
141 print(customers.join(orders, customers.customer_id==orders.order_customer_id, 'right').count())
142
```

Jenkins

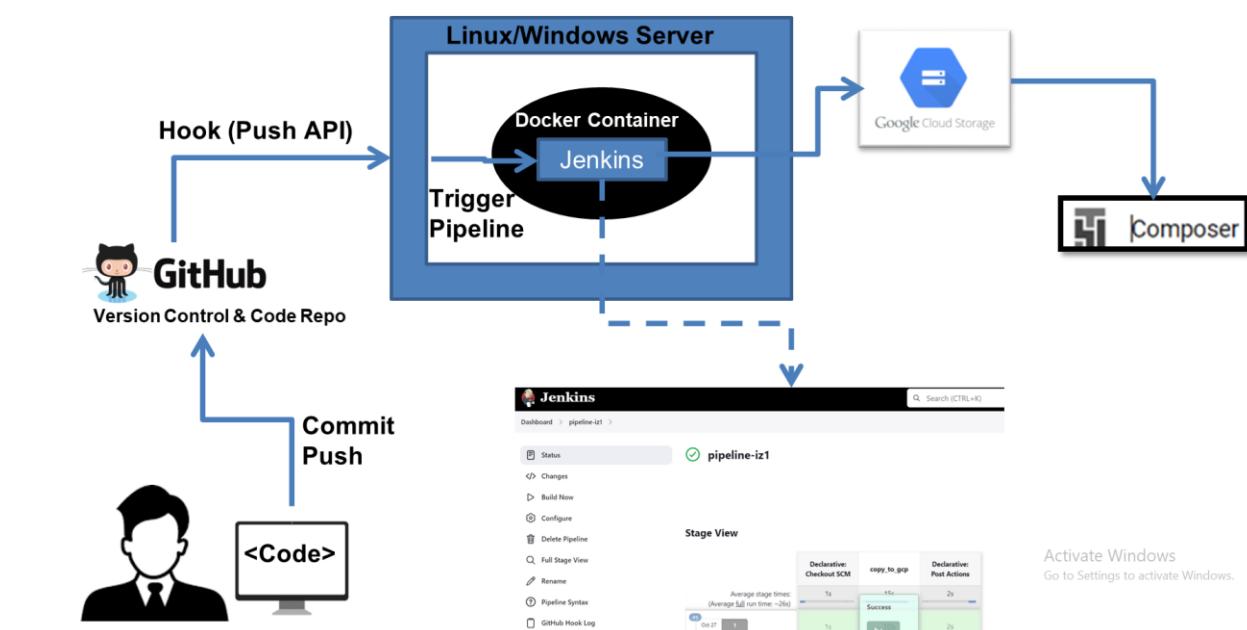


Download Jenkins and Java 11

<https://www.jenkins.io/download/thank-you-downloading-windows-installer-stable>

<https://www.techspot.com/downloads/downloadnow/5553/?evp=cc1002b8f24231def82043061a06561&file=6310>

CICD Git + Jenkins + Cloud Continuous Deployment



Check these documents for installing Jenkins and configure:



Installing and Configuring Jenkins on Windows with Git and GCS Deployment

Step 1: Install Jenkins on Windows

1. Download Jenkins from the official site: <https://www.jenkins.io/download/> (choose the Windows MSI installer). <https://www.jenkins.io/download/thank-you-downloading-windows-installer-stable/>
2. Run the installer (jenkins.msi) and install Jenkins as a Windows service.
3. Open Jenkins in the browser at <http://localhost:8080>
4. Unlock Jenkins using the initial password stored at:
C:\Program Files\Jenkins\secrets\initialAdminPassword
5. Install recommended plugins and create an admin user. (To log in, use the username: "admin" and the administrator password you used to access the setup wizard.)

Step 2: Install Required Plugins

Go to: Manage Jenkins → Plugins → Available Plugins and install:

- Git Plugin
- Google Cloud Storage Plugin
- Pipeline Plugin

Step 3: Configure Git in Jenkins

1. Install Git on Windows from: <https://git-scm.com/download/win>
2. In Jenkins → Manage Jenkins → Global Tool Configuration → Git → Add Git installation.
2. ngrok config add-authtoken
33ITQCgKImLF4nbdvsTw7V63HMt_5aPX29cVDxqB3FesbAozp

Step 4: Configure GCP Credentials in Jenkins

1. Install Google Cloud SDK on Windows: <https://cloud.google.com/sdk/docs/install>
2. Authenticate with GCP:
`gcloud auth login`
`gcloud auth application-default login`
3. Create a Service Account in GCP with Storage Admin role and download the JSON key.
4. In Jenkins: Manage Jenkins → Credentials → Global → Add Credentials → Secret file → Upload JSON key.

Get the initial login password of Jenkins:

C:\ProgramData\Jenkins\.jenkins\secrets\initialAdminPassword

1. After installation -> Open chrome browser -> localhost:8082
2. Select (Install suggested plugins)

The screenshot shows the Jenkins 'Getting Started' page. At the top, there is a navigation bar with various links like 'Hadoop HDFS Data...', 'Prime Video: Search', 'OpenFlights: Airpor...', etc. Below the navigation bar, the main title is 'Getting Started'. A progress bar is partially filled. The main content area contains a table titled 'Install Suggested Plugins'. The table has five columns: 'Folders', 'OWASP Markup Formatter', 'Build Timeout', 'Credentials Binding', and a summary column. The 'Folders' column lists 'Timestamper', 'Pipeline', 'Git', and 'LDAP'. The 'OWASP Markup Formatter' column lists 'Workspace Cleanup', 'GitHub Branch Source', 'SSH Build Agents', and 'Email Extension'. The 'Build Timeout' column lists 'Ant', 'Pipeline: GitHub Groovy Libraries', 'Matrix Authorization Strategy', and 'Mailer'. The 'Credentials Binding' column lists 'Gradle', 'Pipeline: Stage View', 'PAM Authentication', and an empty row. To the right of the table, there is a sidebar with sections for 'Folders', 'OWASP Markup Formatter', and 'Build Timeout', each listing several sub-components. At the bottom right of the page, there is a note: '** - required dependency'.

Create Pipeline:

localhost:8082/newJob

Dashboard > Enter an item name

pipeline1
» Required field

Freestyle project
This is the central feature of Jenkins. Jenkins will build your project, combining any SCM with any build system, and this can be even used for something other than software build.

Pipeline
Orchestrates long-running activities that can span multiple build agents. Suitable for building pipelines (formerly known as workflows) and/or organizing complex activities that do not easily fit in free-style job type.

Multi-configuration project
Suitable for projects that need a large number of different configurations, such as testing on multiple environments, platform-specific builds, etc.

Folder
Creates a container that stores nested items in it. Useful for grouping things together. Unlike view, which is just a filter, a folder creates a separate namespace, so you can have multiple things of the same name as long as they are in different folders.

Multibranch Pipeline
Creates a set of Pipeline projects according to detected branches in one SCM repository.

OK

Dashboard > pipeline2 > Pipeline Syntax

(?) Global Variables Reference
(?) Online Documentation
(?) Examples Reference
(?) IntelliJ IDEA DSL

checkout: Check out from version control

checkout ?

SCM

Git

Repositories ?

Repository URL ?
https://github.com/mohamedirfan/python.git

Credentials ?
- none -
+ Add

Name ?
git

Refspec ?

Steps

Sample Step

bat: Windows Batch Script

bat

Batch Script ?

```
python codewewd.py
```

Advanced...

Generate Pipeline Script

```
bat 'python codewewd.py'
```

 Jenkins

Search (C)

Dashboard > pipeline2 >

Status Changes Build Now Configure Delete Pipeline Full Stage View Stage View

Average stage times:
(Average full run time: ~12s)

checkout	build
4s	2s
4s	2s

#1 Nov 26 23:00 No Changes

Build History trend ^ Atom feed for all Atom feed for failures

Permalinks

- Last build (#1), 5 min 40 sec ago
- Last stable build (#1), 5 min 40 sec ago
- Last successful build (#1), 5 min 40 sec ago
- Last completed build (#1), 5 min 40 sec ago

The screenshot shows the Jenkins dashboard for a pipeline named 'pipeline2' with build '#1'. The build status is indicated by a green checkmark icon and the text 'Build #1 (Nov 26, 2022, 11:00:03 PM)'. Below the status bar, there are several navigation links: 'Dashboard', '> pipeline2', and '#1'. A search bar is located in the top right corner.

The 'Console Output' link under the build actions is highlighted with a blue oval. Other actions shown include 'Edit Build Information', 'Delete build #1', 'Git Build Data', 'Restart from Stage', 'Replay', 'Pipeline Steps', and 'Workspaces'.

```
pipeline {  
    agent any  
  
    stages {  
        stage('checkout') {  
            steps {  
                echo "checkout is happening"  
  
                checkout([$class: 'GitSCM', branches: [[name: '*/*master']], extensions: [], userRemoteConfigs: [[name: 'git', url: 'https://github.com/mohamedirfan/python.git']]])  
            }  
        }  
  
        stage('build') {  
            steps {  
                echo "build is happening"  
  
                git 'https://github.com/mohamedirfan/python.git'  
            }  
        }  
  
        stage('deploy') {  
            steps {  
                echo "deploy is happening"  
  
                bat 'python codewewd.py'  
            }  
        }  
    }  
}
```


Github CLI Commands:

1. Install Git in Linux:

```
sudo yum install git
```

2. Configure Git:

```
git config --global user.name "inceptez"
```

```
git config --global user.email "info@inceptez.com"
```

```
git config --list
```

3. Clone an existing repository from the Git:

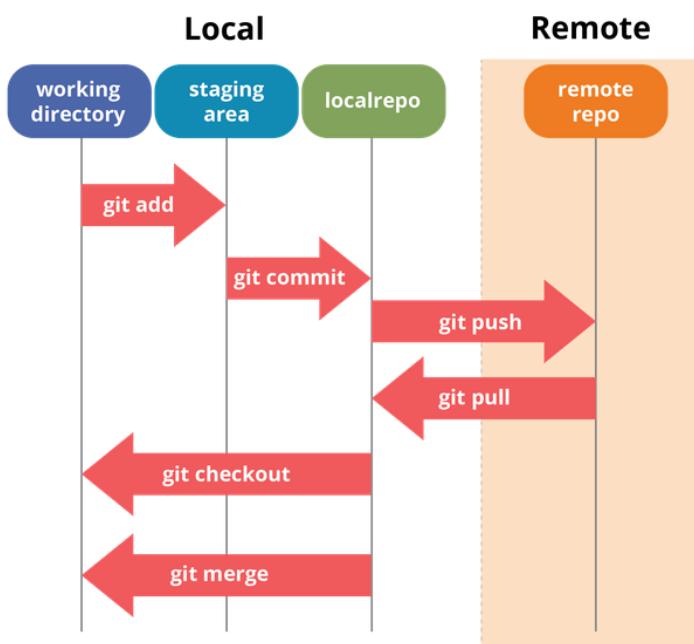
```
git clone https://github.com/incepteztechnologies/de2025.git
```

```
cd de2025
```

4. Set the existing remote repository URL

```
git remote set-url origin https://github.com/incepteztechnologies/de2025.git
```

5. Adding your code to Github



local code -> add -> stage -> commit -> local git repo

Create your code and place it inside the firstrepo folder

```
echo hello > ~/de2025/code1
```

Add the local file to the Stage

```
git add ~/de2025/code1.py
```

Commit the staged file to the local git repo

```
git commit -m "initial commit"
```

Push the local git file to the remote git

<https://docs.github.com/en/authentication/keeping-your-account-and-data-secure/creating-a-personal-access-token>

```
git push -u origin main -f
```

Authentication Key –

~~Username for 'https://github.com': mohamedirfan@gmail.com~~

~~ghp_WCh40Vspe4TjKHujeJQe0CR0p3NmHu3AP25t~~

~~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~~

Shows the current status of anything to commit

```
git status
```

Latest log of all activities happened in Git

```
git log
```

To know the remote repository

```
git remote -v
```

6. Pulling the code from Github

Goto github.com -> modify the file3

To pull all the changes from the remote to local directory only, not to my working directory.

```
git fetch
```

we dont see any changes until merge

```
cat /c/Users/moham/de2025/code1.py
```

Update the files from local to working directory

```
git merge origin/main
```

We can see changes now

```
cat /c/Users/moham/de2025/code1
```

Pull command basically runs 2 command, git fetch and git merge(first fetch to the local repo, do compare the code with the working directory then merge the local code with the working code).

```
git pull
```

List the files from Git Repo

git ls-files

Few Additional Commands:

Create a branch1

git branch branchwewd

git pull

switch to a different branch

git checkout branchwewd

To see which branch we are in

git branch

Checkout different versions

git checkout b9aed8bbeabaa41d5bc4a0b3b40f8d3863b0b727