Jenkins Automation Using Python
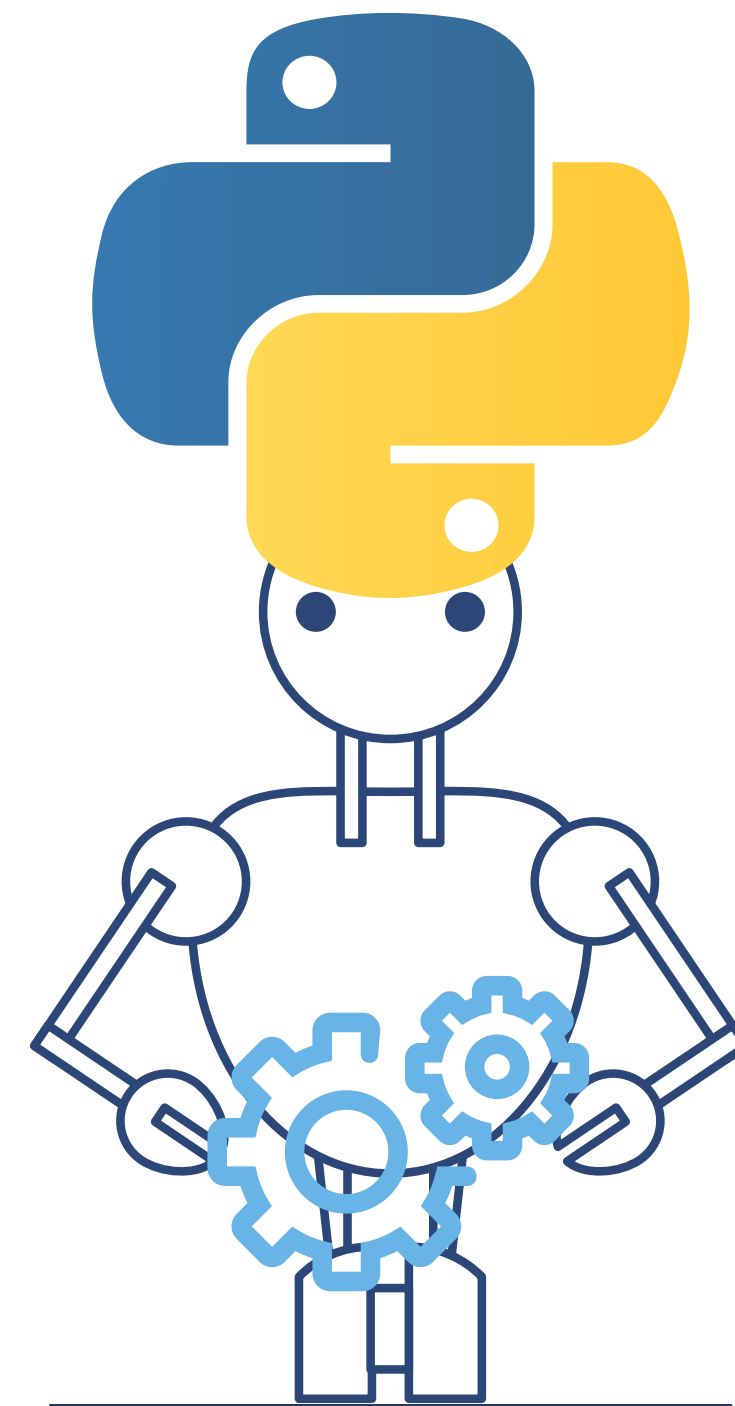
Click to watch the tutorial on Youtube

By Sandip Das

New to Jenkins and/or Python?

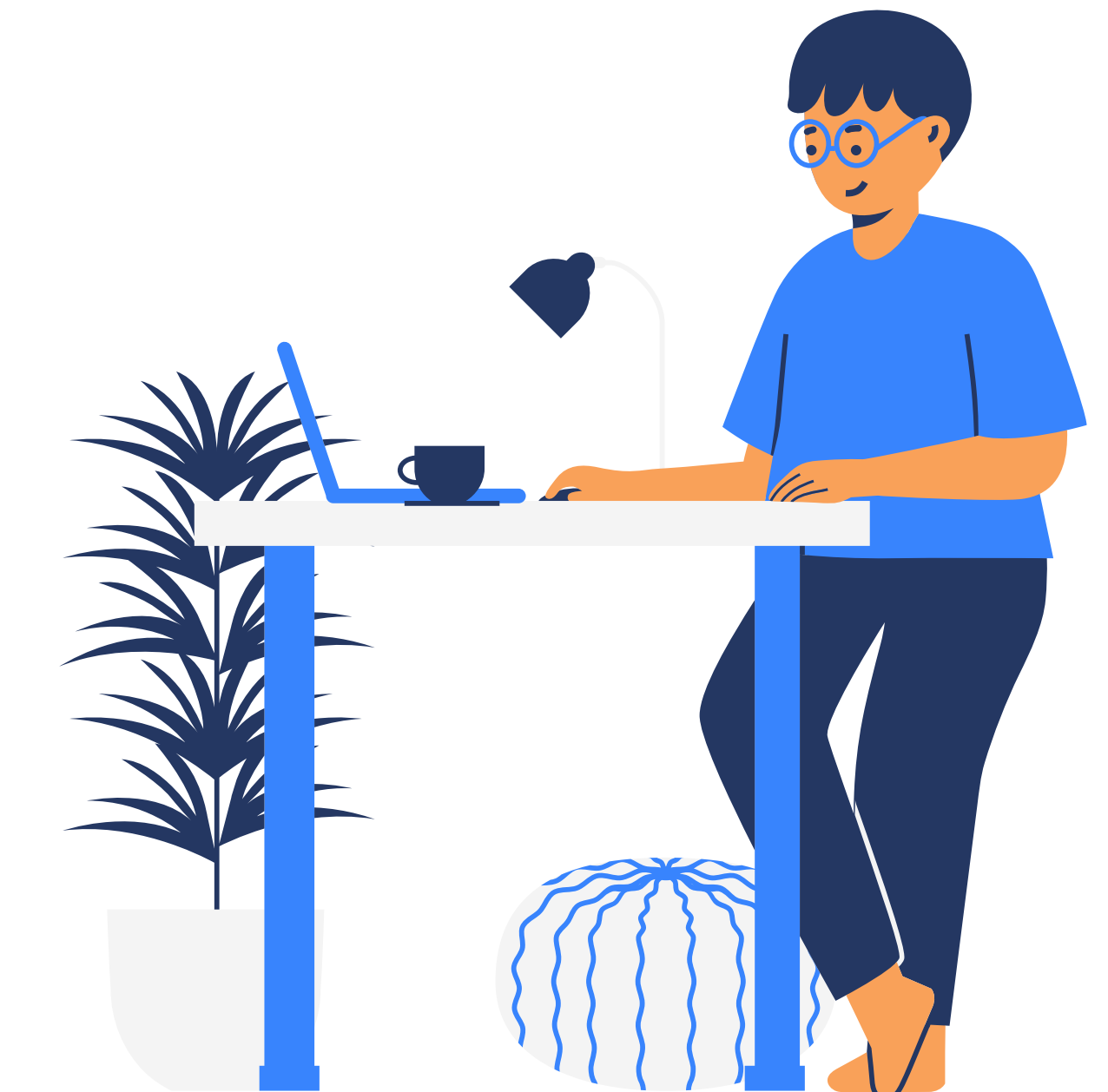## Watch Below Free Courses First!

01   **Jenkins Practical Beginners Course for DevOps**

Link: https://youtu.be/wHtIWvb5nzo

02   **Python For Cloud**

Link: https://youtu.be/wJxTcJNykYc

What are these?

Jenkins

Jenkins – an open source **automation server** that enables developers around the world to reliably **build, test, and deploy** their software.
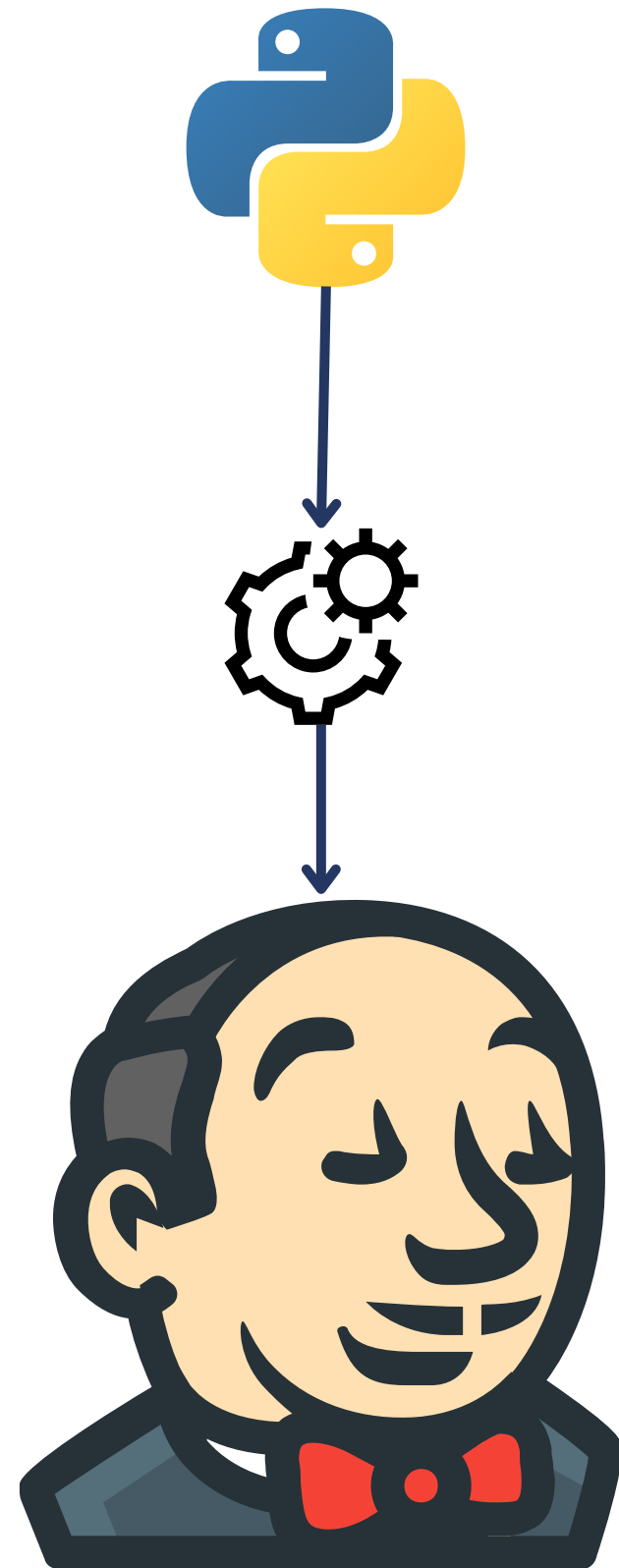
Python

Python is a popular **programming language**, that is used to build websites and software, **automate tasks**, conduct data analysis, and much more!

What can automate in Jenkins using Python?

Most of necessary things we do via Jenkins UI we can automate Via Python! e.g.

Create, View,Copy, Update, Disable, Delete Job

Start, Stop, View, Delete A Build

Create, View, Update, Delete Jenkins View

Create, View, Update, Delete Jenkins Nodes

Get any info about any resource and much more!

To see full capability check out the official documentation here

Available Python Libraries to Automate Jenkins

For the demo, We will use **Python-Jenkins**

JenkinsAPI   **Python-Jenkins**   **api4jenkins**   **aiojenkins**

Let's get's the hands dirty

Create and Activate the Virtual Environment and install the Python library

Activate Virtual Enviornment

python3 -m venv venv
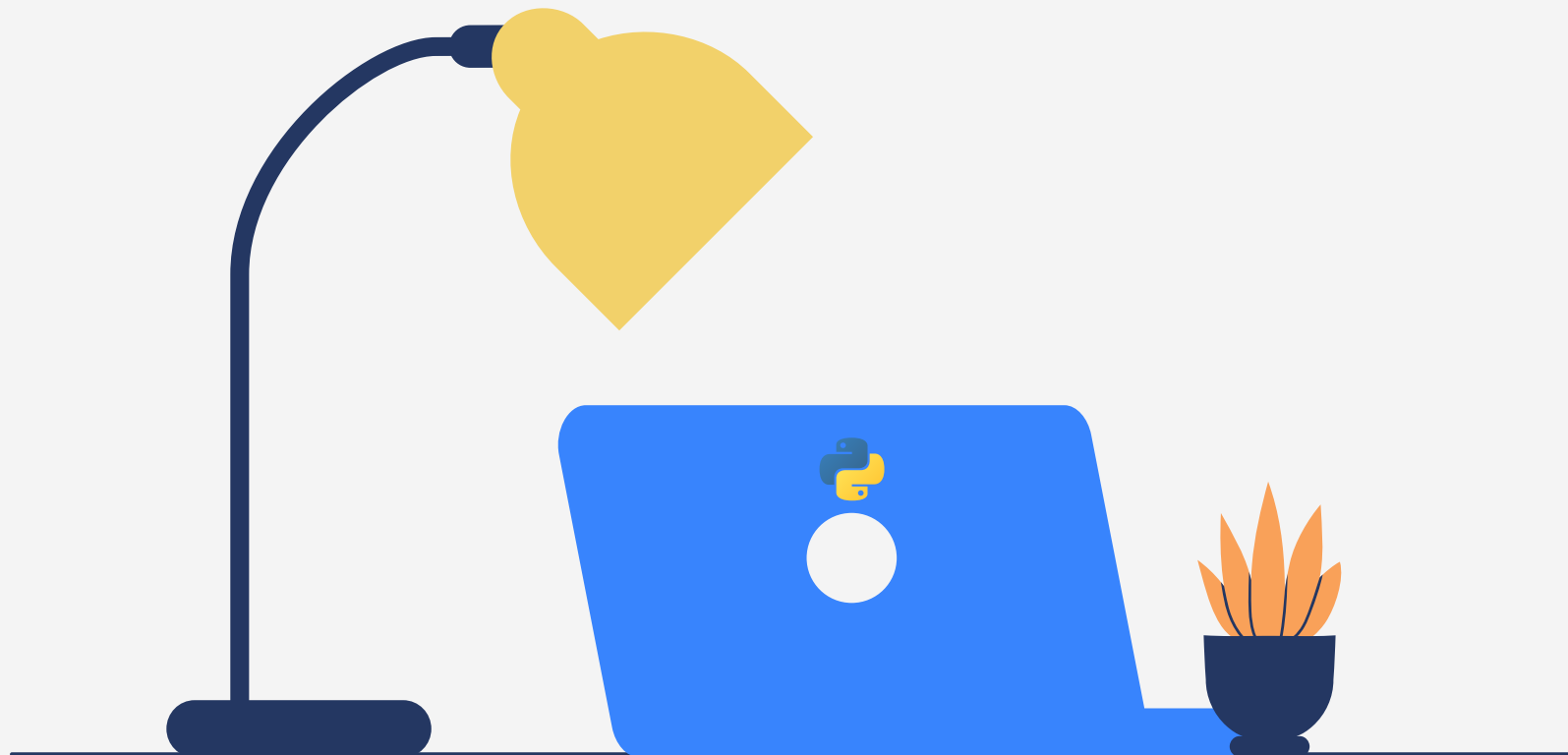. venv/bin/activate

Install the library using Pip

pip install python-jenkins

Save Dependencies

pip freeze > requirements.txt

Install dependencies for later on
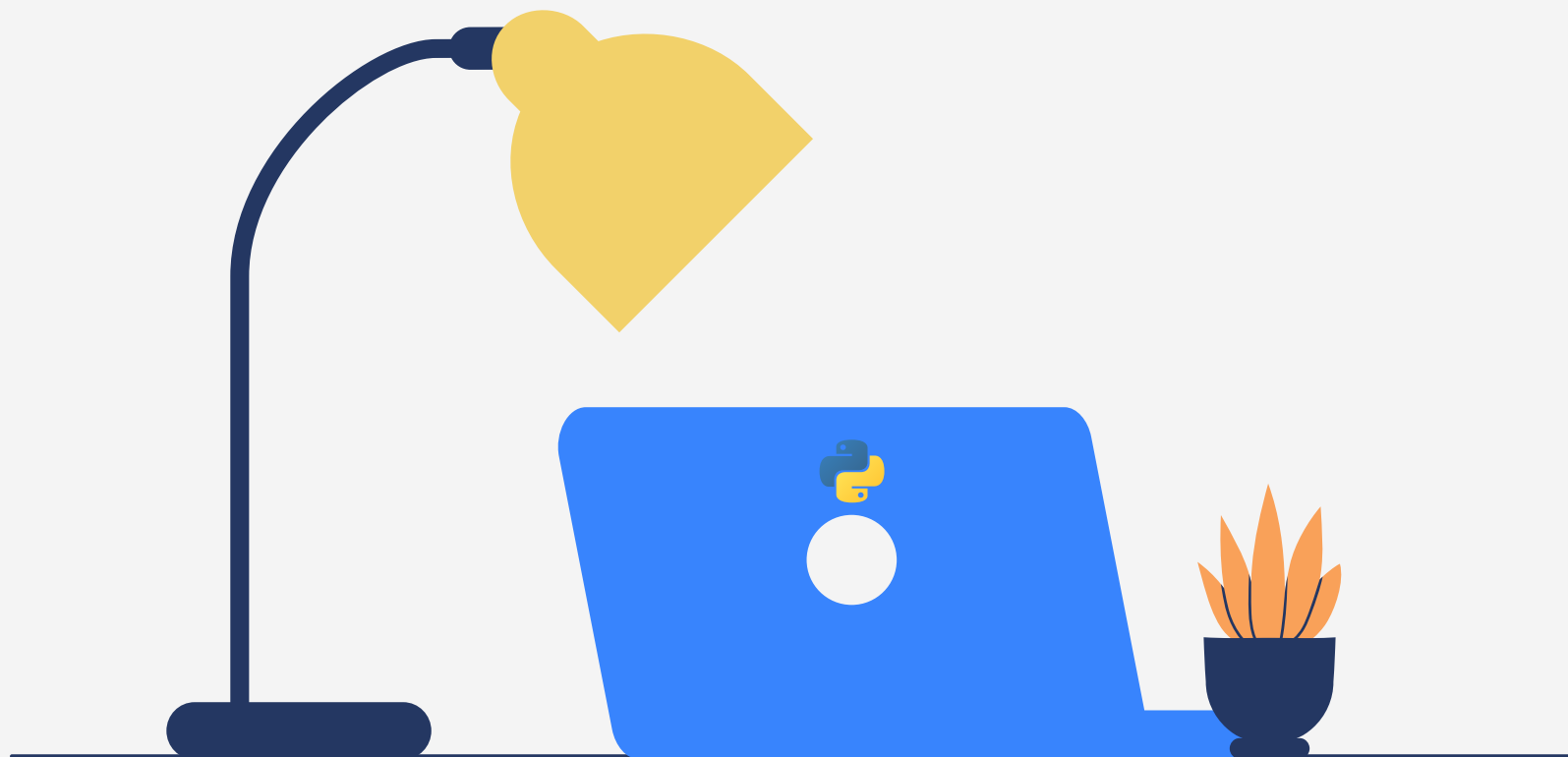
pip install -r requirements.txt

Configure Jenkins Client in Python

Code

```
import jenkins
server = jenkins.Jenkins('http://localhost:8080',
username='myuser', password='mypassword')
```

Test API access by fetching Jenkins Username and Version

```
user = server.get_whoami()
version = server.get_version()
print('Hello %s from Jenkins %s' % (user['fullName'],
version))
```

Jobs

Create Pre-configured Job

```
job2_xml = open("job2.xml", mode='r', encoding='utf-8').read()
server.create_job("job2", job2_xml)
```

Create Empty Job

```
server.create_job("job1", jenkins.EMPTY_CONFIG_XML)
```

View Jobs

```
jobs = server.get_jobs()
print(jobs)
```
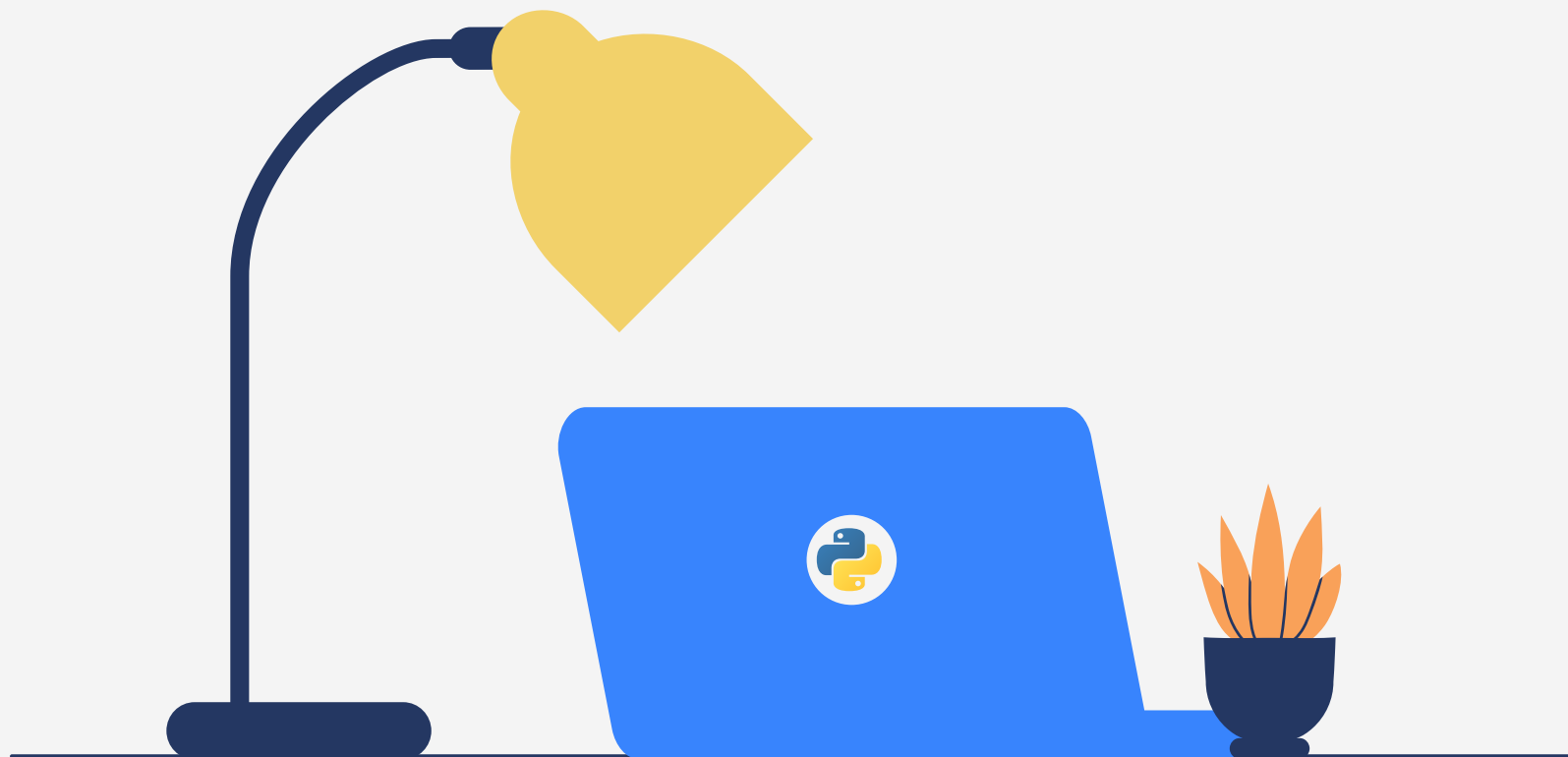
Copy

```
server.copy_job('job2', 'job4')
```

Update Job

```
updated_job_3 = open("job_3_updated.xml", mode='r',
encoding='utf-8').read()
server.reconfig_job('job3', updated_job_3)
```

Delete Job

```
server.delete_job('job1')
```

Builds

Start a build

```
server.build_job('job3')
```

Get Build Number

```
last_build_number = server.get_job_info('job3')
['lastCompletedBuild']['number']
print("Build Number", last_build_number)
```
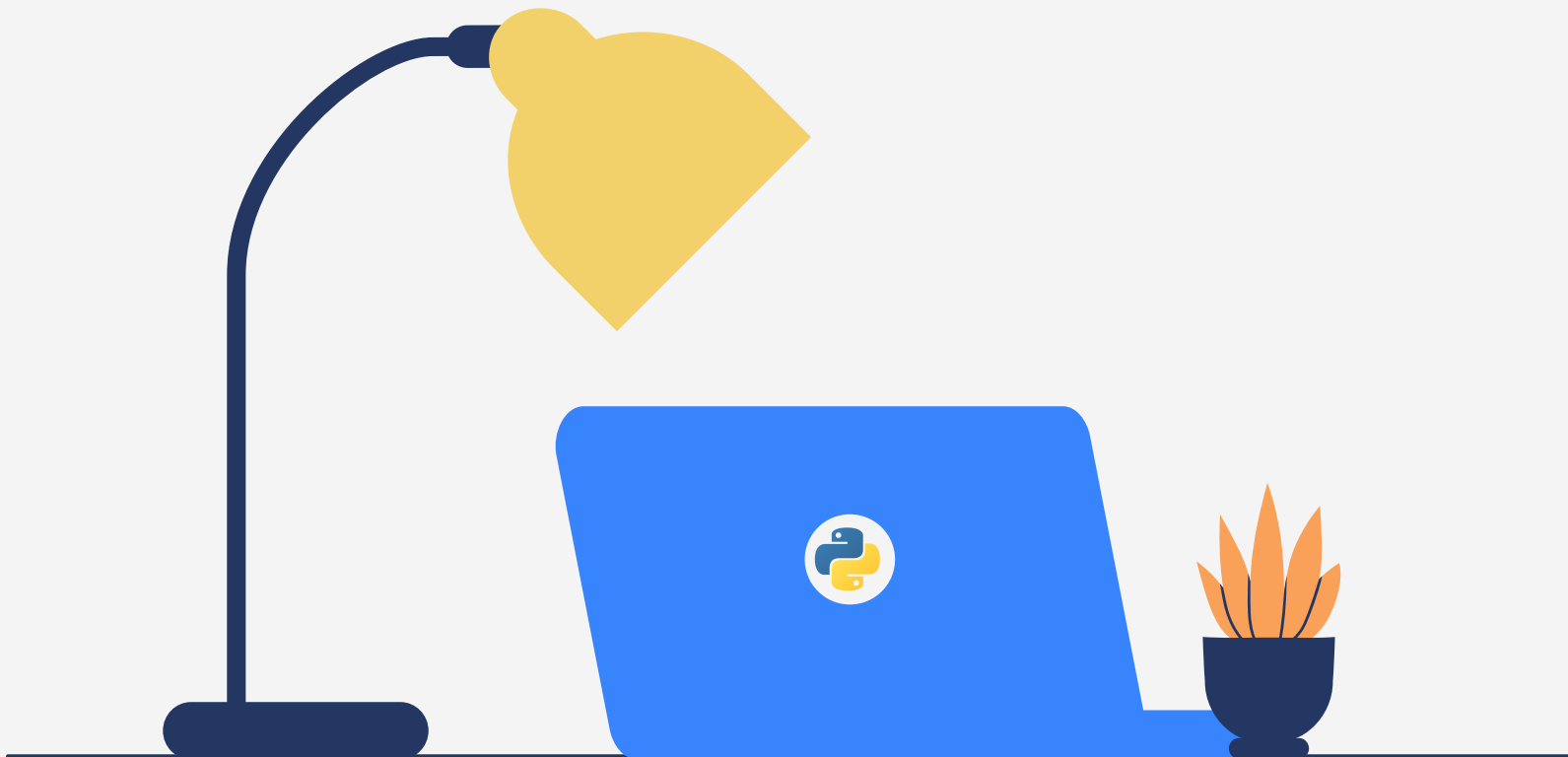
Get Build Info

```
build_info = server.get_build_info('job3', build_number)
print("build info", build_info)
```

Stop a build

```
server.stop_build('job3', build_number)
```

Delete a build

```
server.delete_build('job3', build_number)
```

Views

Create a view

```
view_config = open("jobs_view.xml", mode='r',
encoding='utf-8').read()
server.create_view("Job List", view_config)
```
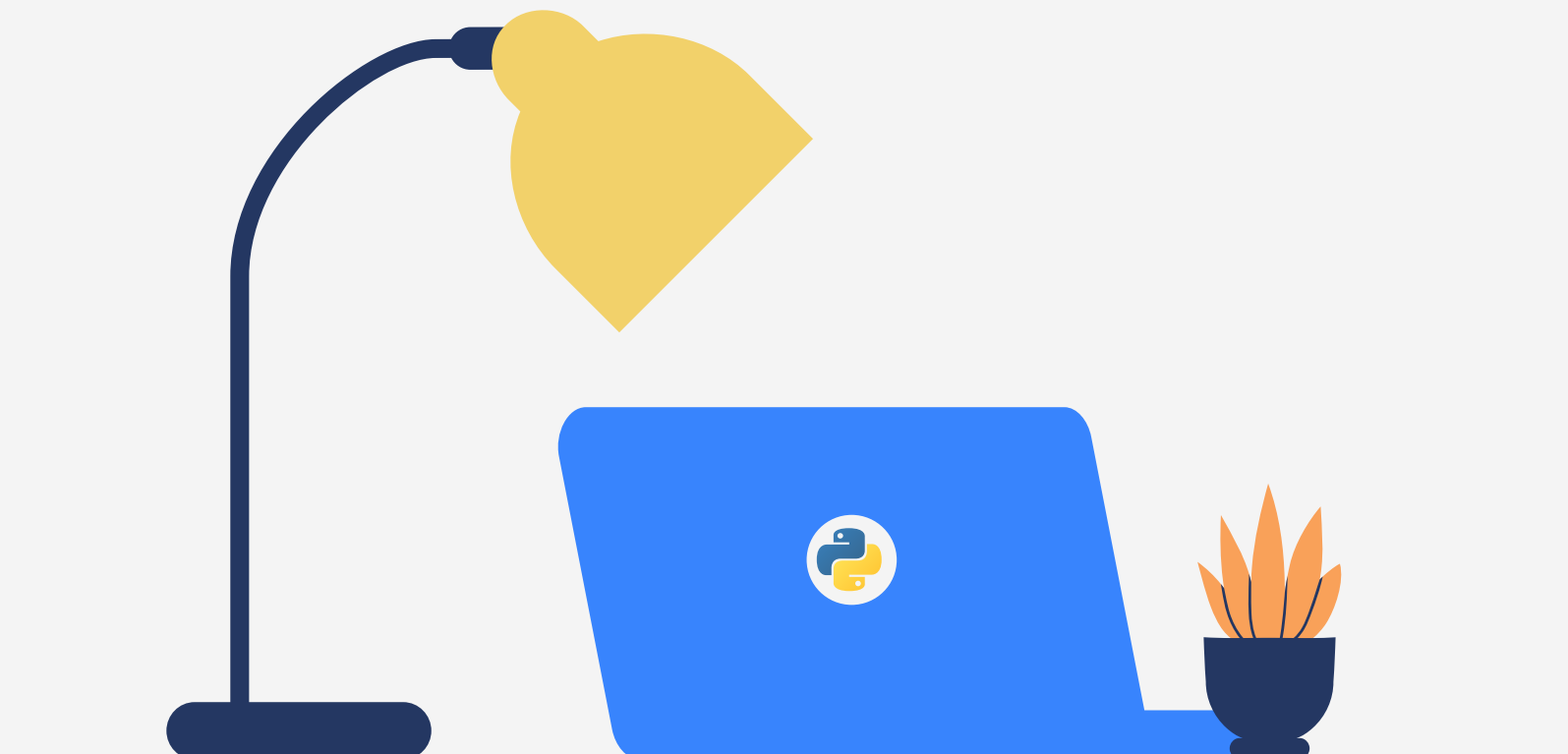
Get View list

```
views = server.get_views()
print(views)
```
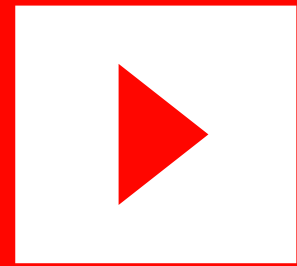
Update a view

```
updated_view_config = open("jobs_view_updated.xml",
mode='r', encoding='utf-8').read()
server.reconfig_view("Job List", updated_view_config)
```

Delete a view

```
server.delete_view("Job List")
```

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