

How to Think like a Python Programmer Day #1

FIRST THINGS FIRST.

KEY CONCEPTS

SETUP CLOUD DEV
ENVIRONMENT.



Agenda

1. You Are the Boss
2. Converting a Problem into Code
3. Programming Constructs, Dataflows, Functions and Classes/Objects
4. Setup a Cloud Python Development Environment
5. Create your First Program

You Are the Boss – First Thing

Have you ever asked someone to do something and they did the wrong thing ?
Why ?

- *Did they not understand you ?*
- *Did they just want to do their own thing ?*
- *Maybe you needed to know their language ?*

Guess what computers let you be a real boss !

A computer will always do what tell it . You just need to learn a few words/commands and yes you can get things done your way.

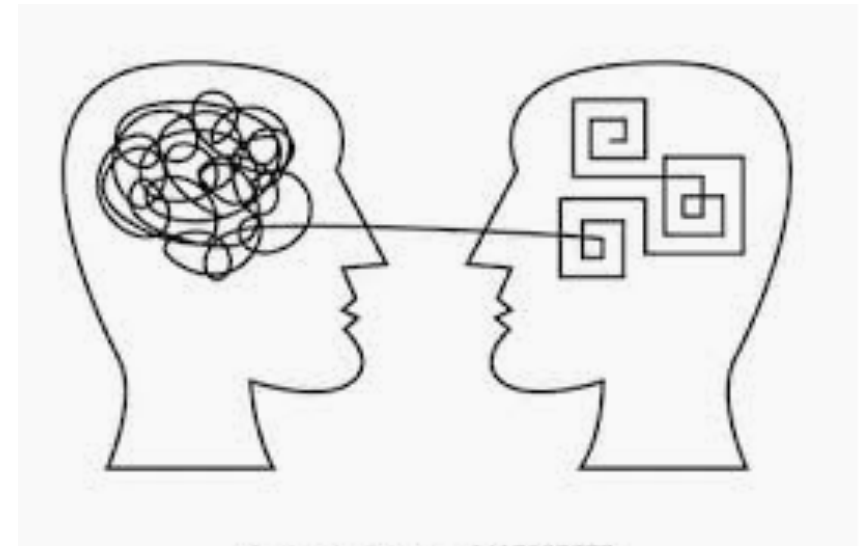


Converting a Problem into Code – Recipe Example.

Thinking like a programmer requires that you break down a problem into detailed steps, like a cooking recipe. NOTE: The order of ingredients matters. Turn tangled thoughts into a ordered list of functions.

Example:

1. **Buy ingredients**
2. **Organize ingredients**
3. **Put first all ingredients in bowl**
4. **Mix ingredients**
5. **Pore in Pan**
6. **Put in Oven**
7. **Set timer for oven**
8. **Take out**
9. **Let Cool.**
10. **Serve**

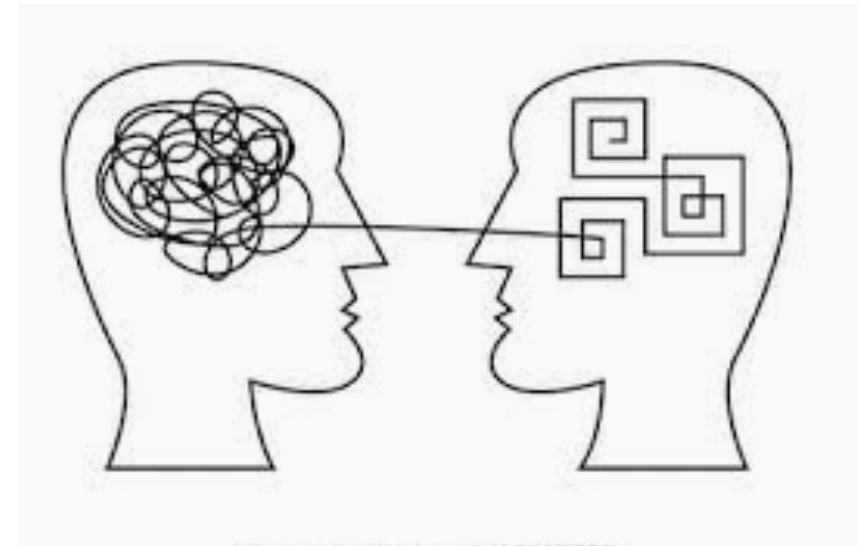


Converting a Problem into Code – Code Example.

Thinking like a programmer requires that you use data and process that data and perform some output if needed.

Example:

- 1. load a file with test data**
- 2. find all names that start with joe and get their emails**
- 3. store names in new list**
- 4. send email to all joes**



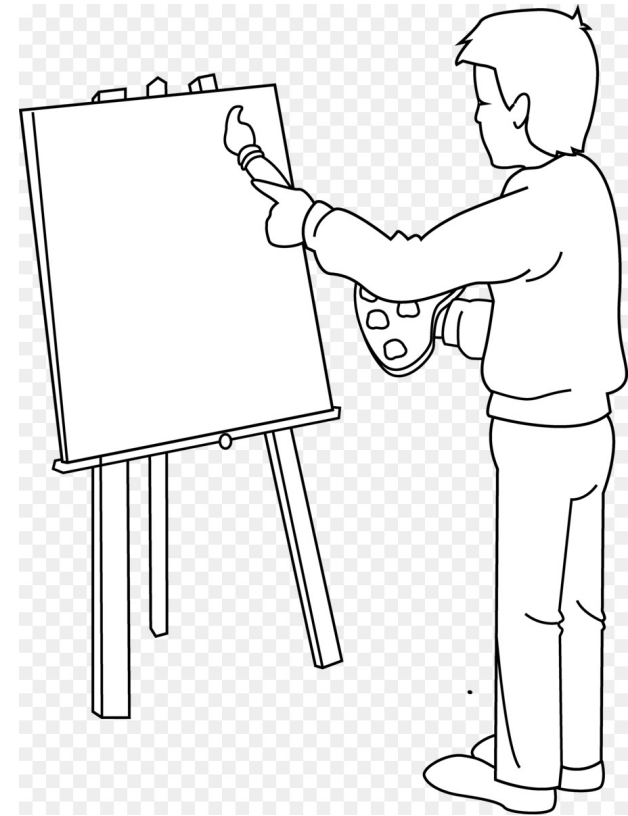
Software Design is the main thing.

Thinking like a programmer requires that think like a designer.

Think like how a person builds a building or creates a work of art.

You choose your problem to solve, goal, tools and more.

Software developers are classified as creative artists and the programming language you choose like Python is your canvas.



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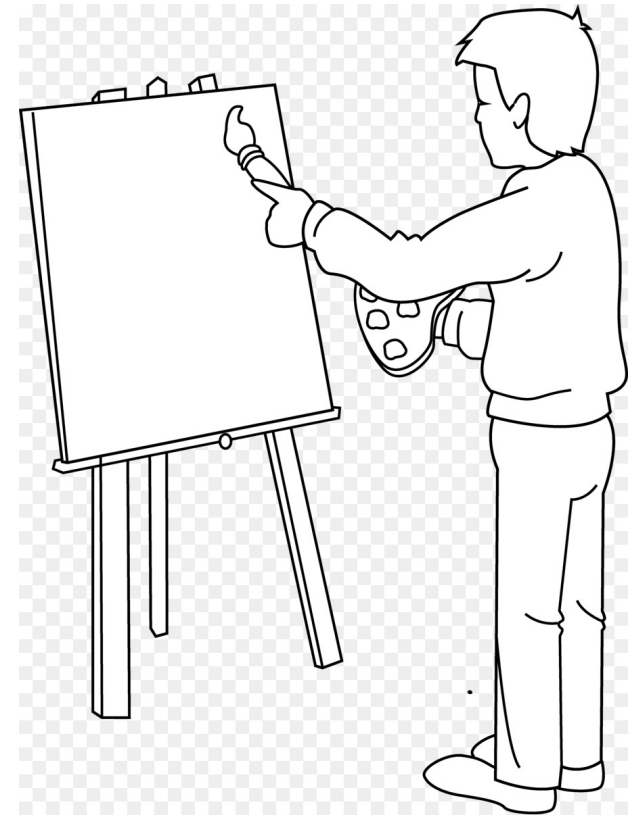
Thinking like a programmer requires that you define the problem correctly.

Determine the users, or interfaces.

Defining whom or what problem you are actually solving.

Software developers are classified as creative

artists and the programming language you choose like Python is your canvas.



Programming Three key Actions Things

Thinking like a programmer requires that you understand how to tell a computer to do something.

A computer only does a few basic things:

1. **Take input**

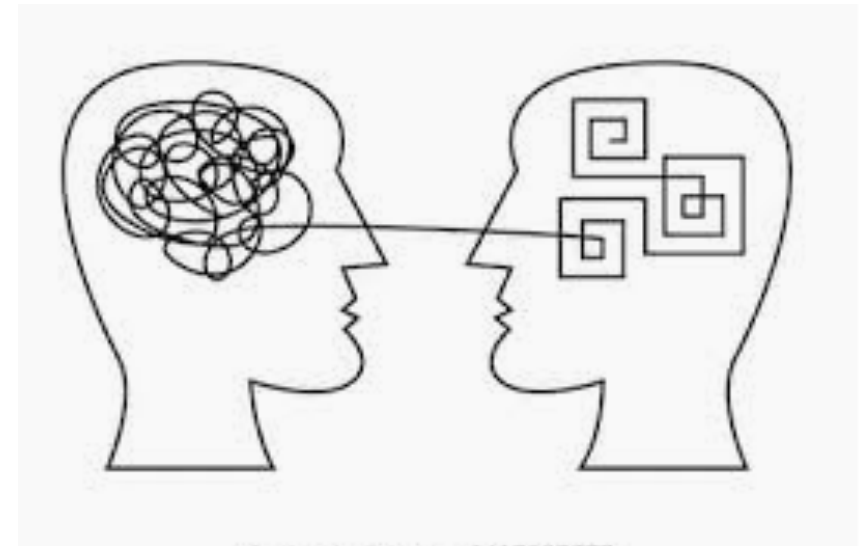
- The input can be from a keyboard, , file, device like a camera or microphone or some other electronic device.

2. **Process input**

- The process can be mathematical operations like addition and multiplication, conditional if/then, looping, data conversion or some system call.

3. **Output data**

- The output can be to screen, printer, another device or process.

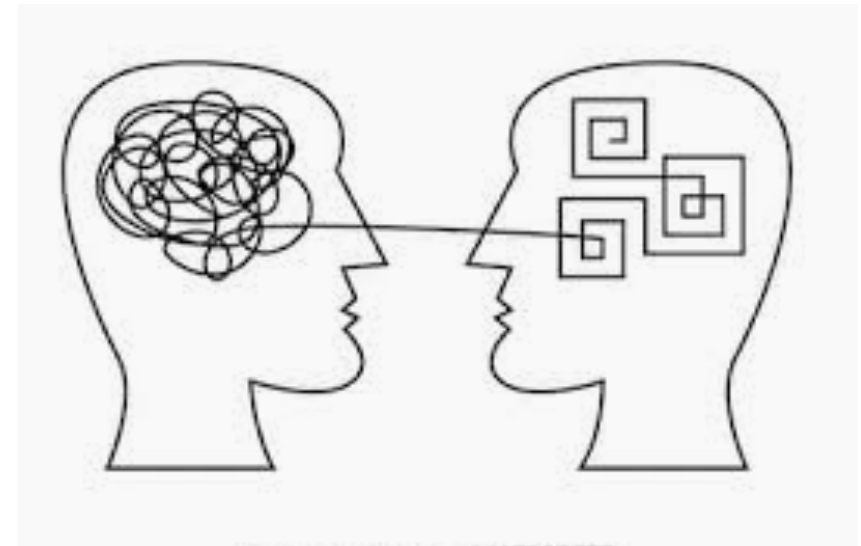


Programming Constructs, Dataflows, Functions and Classes/Objects

Thinking like a programmer requires that you understand a few key Python programming constructs like the following:

NOTE: We will cover these in detail in future classes.

1. Data types, Data Structures, List, Tuples and Data storage
2. Key Python Operations
 - Math
 - Logical , If/Then, While, For
 - System Calls, Networking, Database/File CRUD. etc.
 - Statements
 - Expressions
3. Functions, Classes/Objects
4. Design Patterns



Thinking like Programmer Exercise #1 with Sticky Notes

CREATE ALL STEPS
FOR MAKING A
CAKE.

WRITE ONE STEP
ON EACH STICKY
NOTE.

EXAMPLE:

1. First choose recipe,
2. Buy ingredients,
3. Choose cooking tools,
4. etc...



Let's Setup your environment.

A WALKTHROUGH WE WILL GUIDE YOU

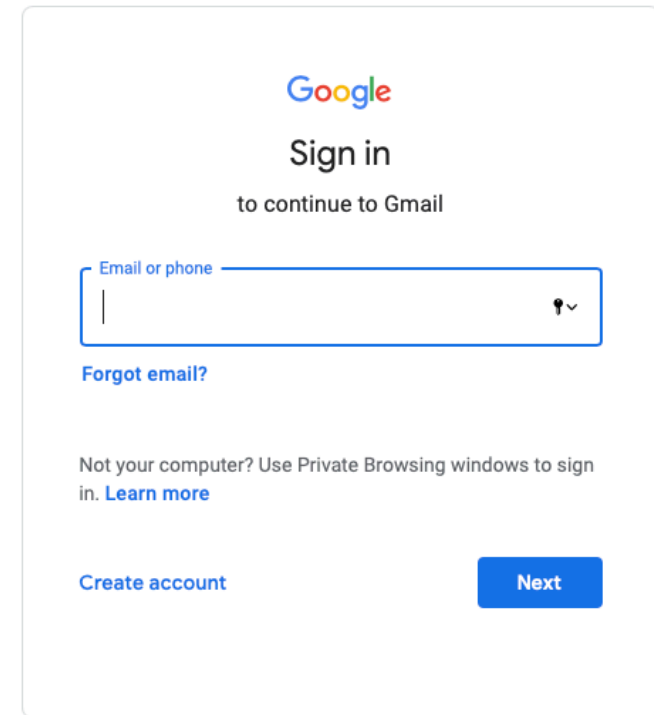
Setup a Cloud Python Development Environment. - Google GMAIL

Open Your Web Browser
Chrome/IE/Firefox and create a Gmail
Account.

Goto:

<https://accounts.google.com>

and Create Account.

A screenshot of the Google sign-in page. At the top is the Google logo. Below it, the text "Sign in" is centered, followed by "to continue to Gmail". There is a text input field with the placeholder "Email or phone" and a small icon of a person with a checkmark. Below the input field is a link "Forgot email?". At the bottom, there is a link "Create account" on the left and a blue button labeled "Next" on the right.

Google

Sign in

to continue to Gmail

Email or phone

Forgot email?

Not your computer? Use Private Browsing windows to sign in. [Learn more](#)

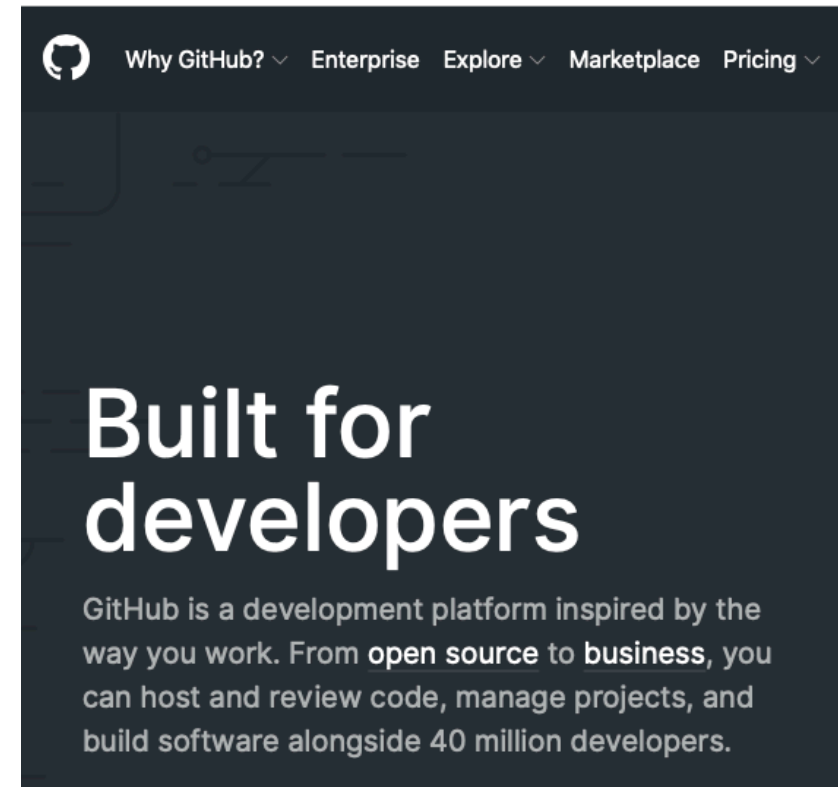
Create account

Next

Setup a Cloud Python Development Environment. - GitHub

Open Your Web Browser
Chrome/IE/Firefox and create a GitHub
Account using your Gmail Account.

Goto: <https://github.com>
and Signup.



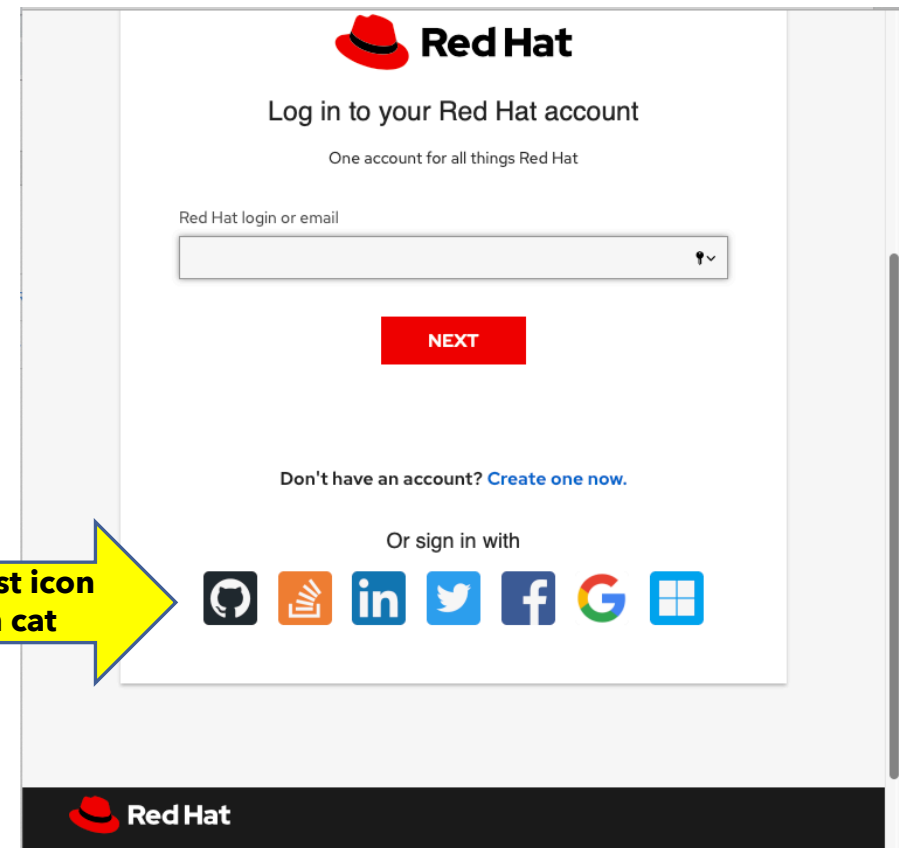
Setup a Cloud Python Development Environment. - EclipseChe

<https://che.openshift.io/>

Open Your Web Browser
Chrome/IE/Firefox and create an
Eclipse Che Account using your
GitHub account

URL:

<https://che.openshift.io/>

A screenshot of the Red Hat login page. At the top is the Red Hat logo and the text "Log in to your Red Hat account" and "One account for all things Red Hat". Below this is a text input field labeled "Red Hat login or email" with a search icon on the right. A red "NEXT" button is below the input field. Further down, it says "Don't have an account? [Create one now.](#)". At the bottom, it says "Or sign in with" followed by a row of social media icons: GitHub, Eclipse Che, LinkedIn, Twitter, Facebook, Google, and Microsoft. The Red Hat logo is in the bottom right corner of the page.

Red Hat

Log in to your Red Hat account








One account for all things Red Hat

Red Hat login or email

NEXT

Don't have an account? [Create one now.](#)

Or sign in with

Red Hat

Setup a Cloud Python Development Environment. - EclipseChe

<https://che.openshift.io/dashboard/#/create-workspace>

Next Create Python
Dev Environment

URL:

<https://che.openshift.io/dashboard/#/create-workspace>

Note: your Gmail account will receive email when setup.

New Workspace CREATE & OPEN

EPHEMERAL ☒

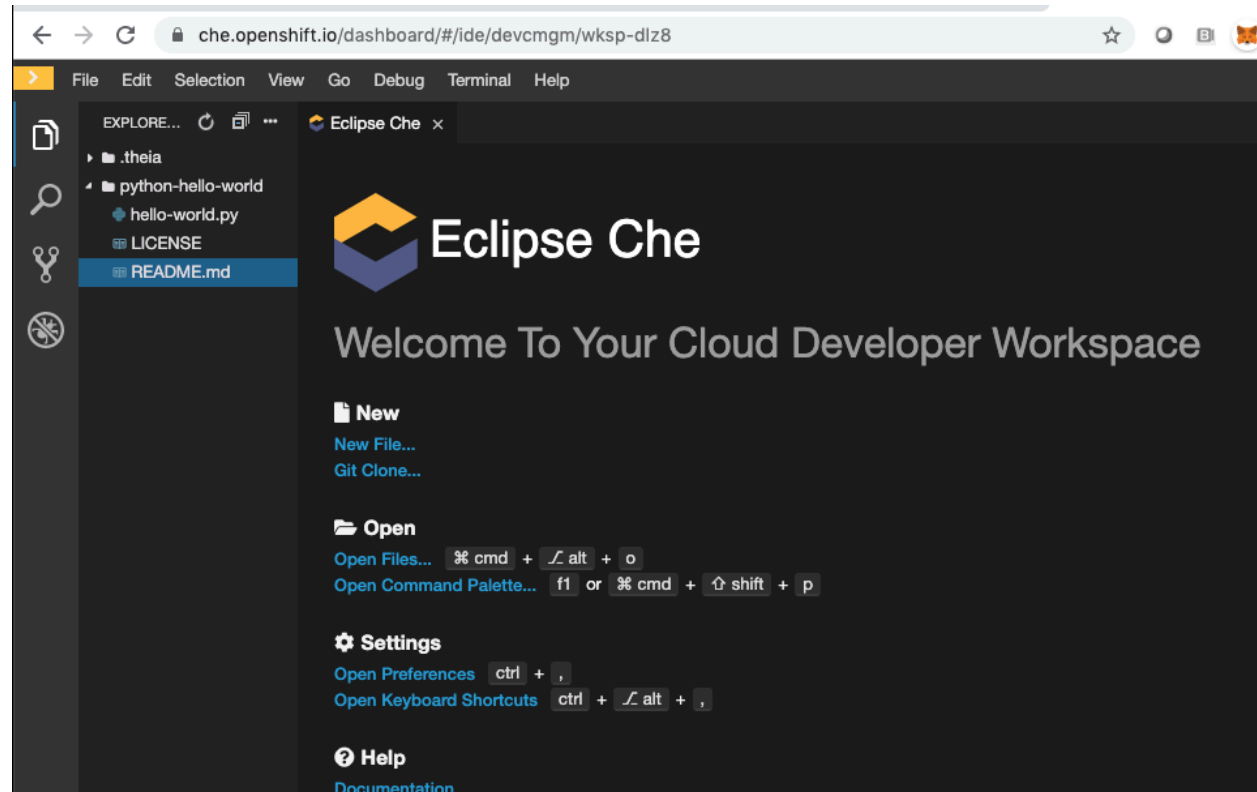
MODE ?

SELECT	NAME	DESCRIPTION	REQUIRED MEMORY
STACK	Node.js MongoDB Web Application	Stack with Node.js 10 and MongoDB 3.4	1.8 GB
<input type="checkbox"/>	NodeJS React Web Application	Stack for developing NodeJS React Web Application	1.8 GB
<input type="checkbox"/>	PHP Laravel with MySQL	PHP Stack with Laravel and MySQL real world application	2.7 GB
<input type="checkbox"/>	PHP Simple	PHP Stack with PHP 7.1 and simple web application	2.5 GB
<input type="checkbox"/>	PHP Symfony	PHP Stack with Symfony Demo Application https://symfony.com/	2.7 GB
<input type="checkbox"/>	PHP with MySQL	PHP Stack with MySQL and simple database application	2.7 GB
<input type="checkbox"/>	Python	Python Stack with Python 3.7	1.8 GB
<input type="checkbox"/>	Python Django	Python Stack with Python 3.7 and Django application	1.8 GB

Python Workspace

Open First Cloud Python Development Environment. - EclipseChe

<https://che.openshift.io/dashboard>



Run your first Cloud Python Development Environment. - EclipseChe

<https://che.openshift.io/dashboard>

