APACHE ZEPPELIN TRAINING

A gentle intro with hands-on session

HELLO!

Ahyoung Ryu

A software engineer @NFLabs

A committer of Apache Zeppelin

Github @AhyoungRyu

HELLO!

Mina Lee

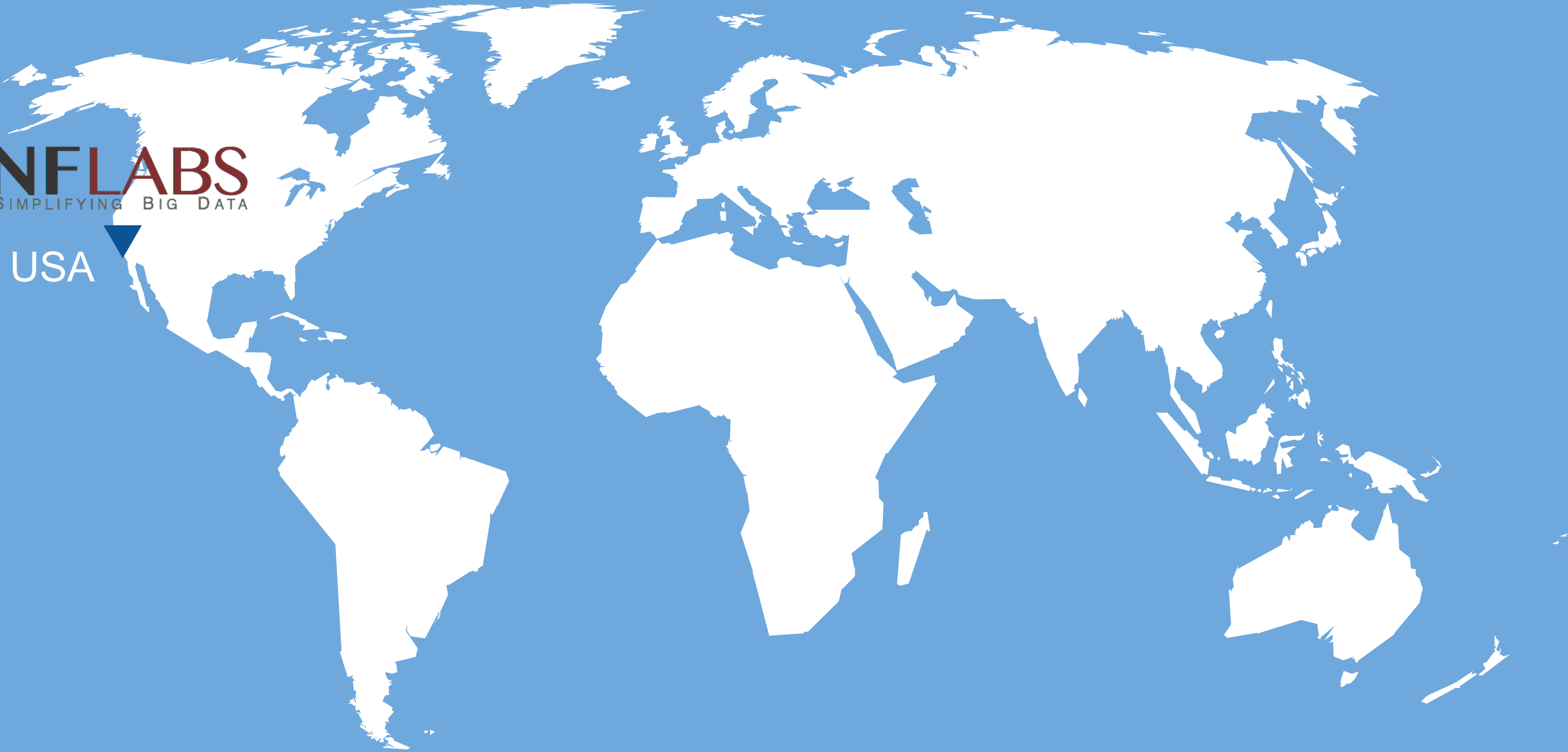
A software engineer @NFLabs

A PMC of Apache Zeppelin

Github @minahlee

Located

@ California, USA



NFLABS
SIMPLIFYING BIG DATA
NFLABS
SIMPLIFYING BIG DATA

Located

@ California, USA

Located

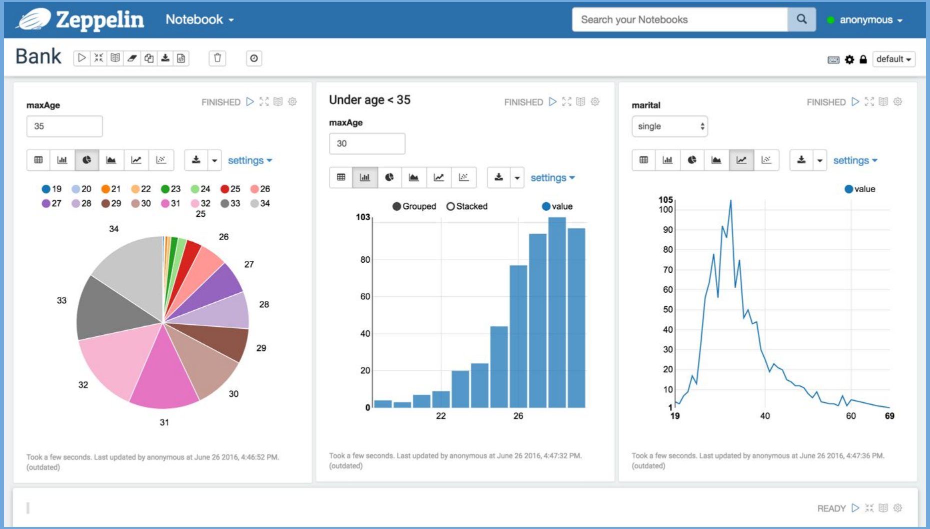
@ Seoul, Korea

"We're a creator of Apache Zeppelin!"

INDEX

Overview of Apache Zeppelin

Apache Zeppelin is used for...



Bank

maxAge: 35

FINISHED

Took a few seconds. Last updated by anonymous at June 26 2016, 4:46:52 PM. (outdated)

Under age < 35

maxAge: 30

FINISHED

Took a few seconds. Last updated by anonymous at June 26 2016, 4:47:32 PM. (outdated)

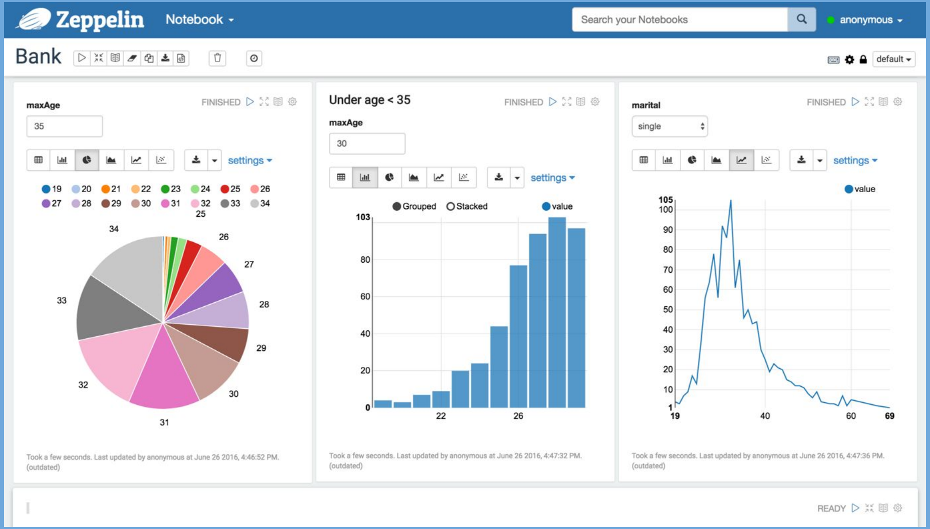
marital: single

FINISHED

Took a few seconds. Last updated by anonymous at June 26 2016, 4:47:36 PM. (outdated)

READY

Apache Zeppelin is used for...



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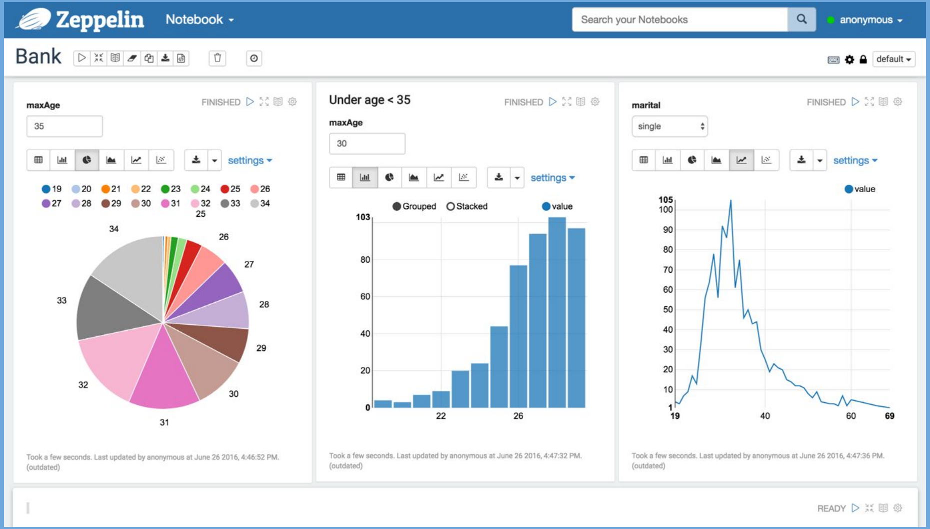
- Data exploration and discovery
- Visualization
- Collaboration and publishing

Apache Zeppelin is used for...



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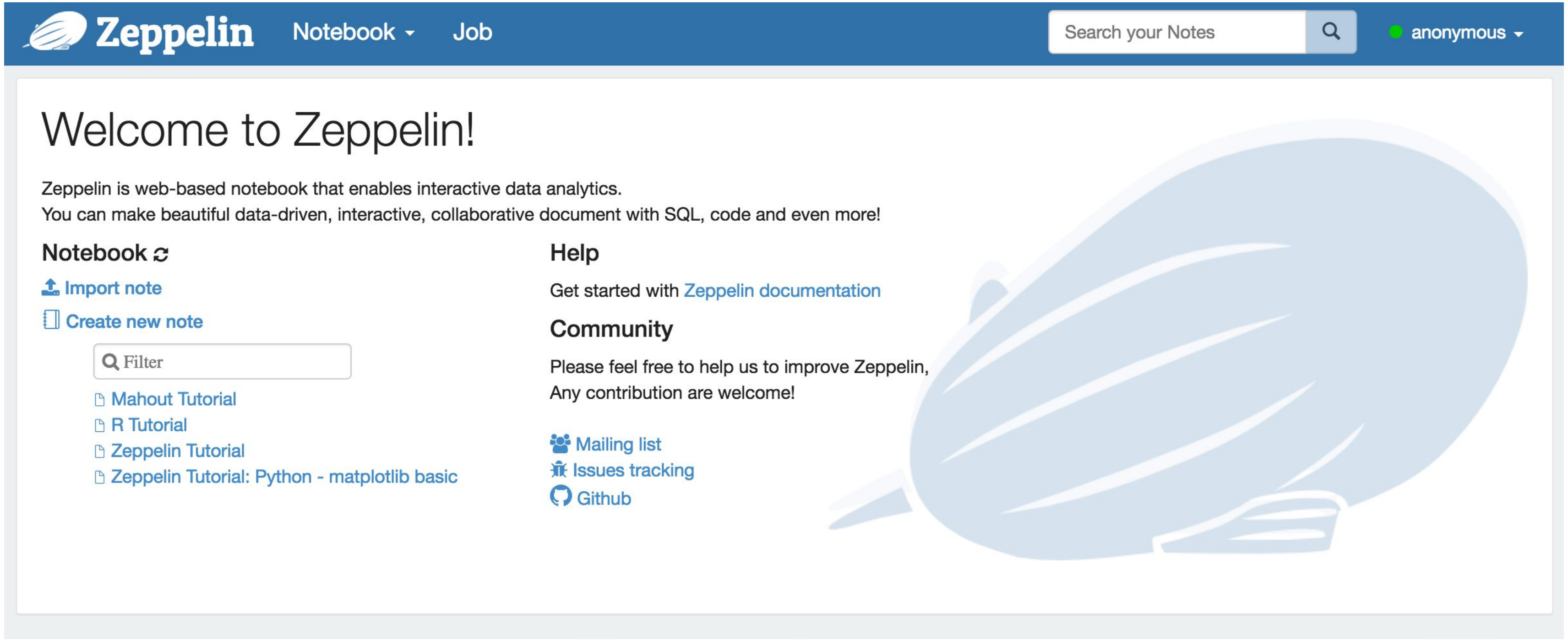
- Data exploration and discovery
- Visualization
- Collaboration and publishing

“Modern Data Science Studio”



Welcome to Zeppelin!

Zeppelin is web-based notebook that enables interactive data analytics.
You can make beautiful data-driven, interactive, collaborative document with SQL, code and even more!

Notebook

Import note

Create new note

Filter

- Mahout Tutorial
- R Tutorial
- Zeppelin Tutorial
- Zeppelin Tutorial: Python - matplotlib basic

Help

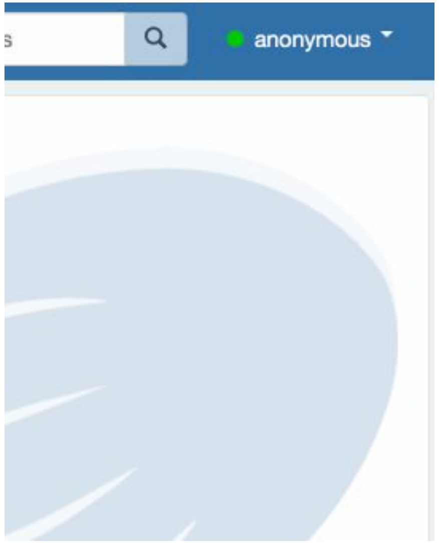
Get started with Zeppelin documentation

Community

Please feel free to help us to improve Zeppelin,
Any contribution are welcome!

- Mailing list
- Issues tracking
- Github

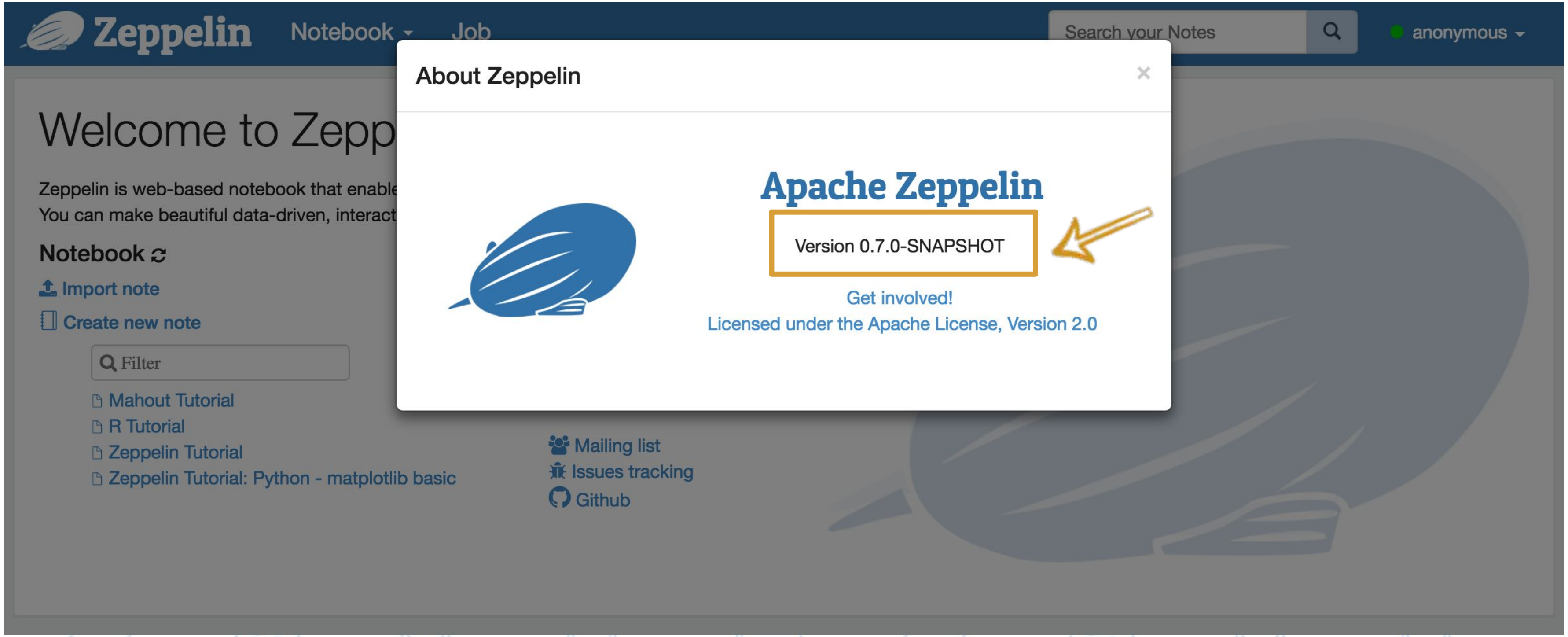
Main Menu



- About Zeppelin
- Interpreter Setting
- Notebook repos
- Credential
- Configuration

*Until you activate the **Shiro authentication**,*

*the username will be "**anonymous**"*



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About Zeppelin

Apache Zeppelin

Version 0.7.0-SNAPSHOT

Get involved!

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>_ shell

ALLUXIO Google BigQuery

cassandra elasticsearch Flink

APACHE GEODE APACHE HBASE hadoop HDFS HIVE

apache Ignite APACHE LENS

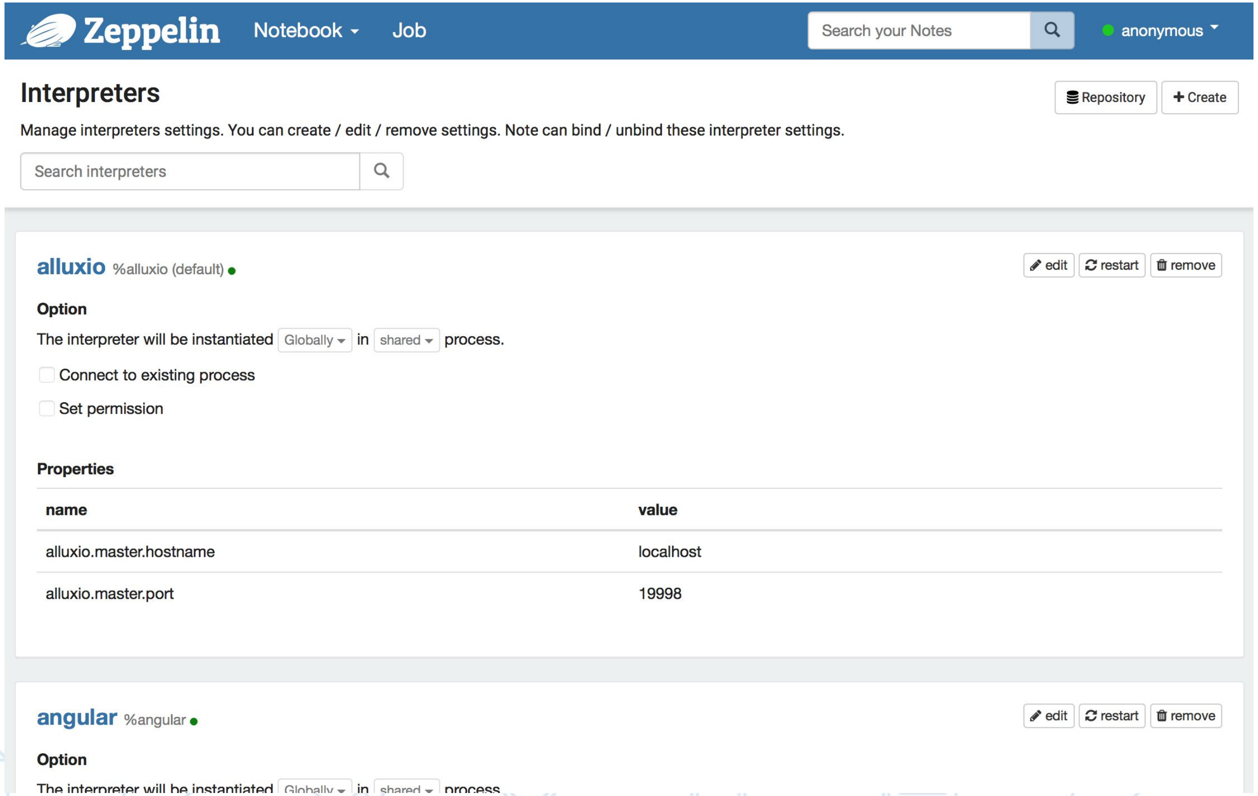
LIVY PostgreSQL python R

Scalding TAJO™

beam Powered by mahout **Markdown**

+20 ***interpreters*** *are available now!*

+ APACHE Spark™



Interpreters

Repository | Create

Manage interpreters settings. You can create / edit / remove settings. Note can bind / unbind these interpreter settings.

Search interpreters

alluxio %alluxio (default) ●

edit | restart | remove

Option

The interpreter will be instantiated Globally in shared process.

Connect to existing process

Set permission

Properties

name	value
alluxio.master.hostname	localhost
alluxio.master.port	19998

angular %angular ●

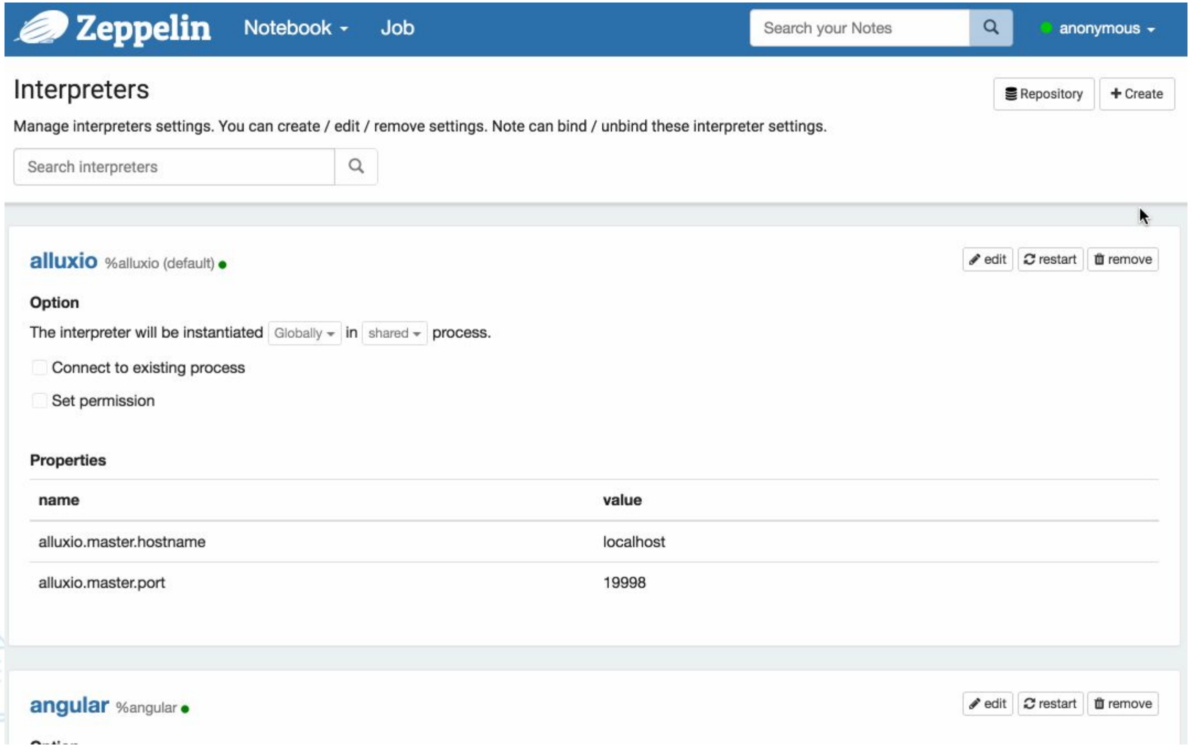
edit | restart | remove

Option

The interpreter will be instantiated Globally in shared process.

Interpreter Setting page

- Create/ edit/ remove
- Search
- Check repository info



Interpreters

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name	value
alluxio.master.hostname	localhost
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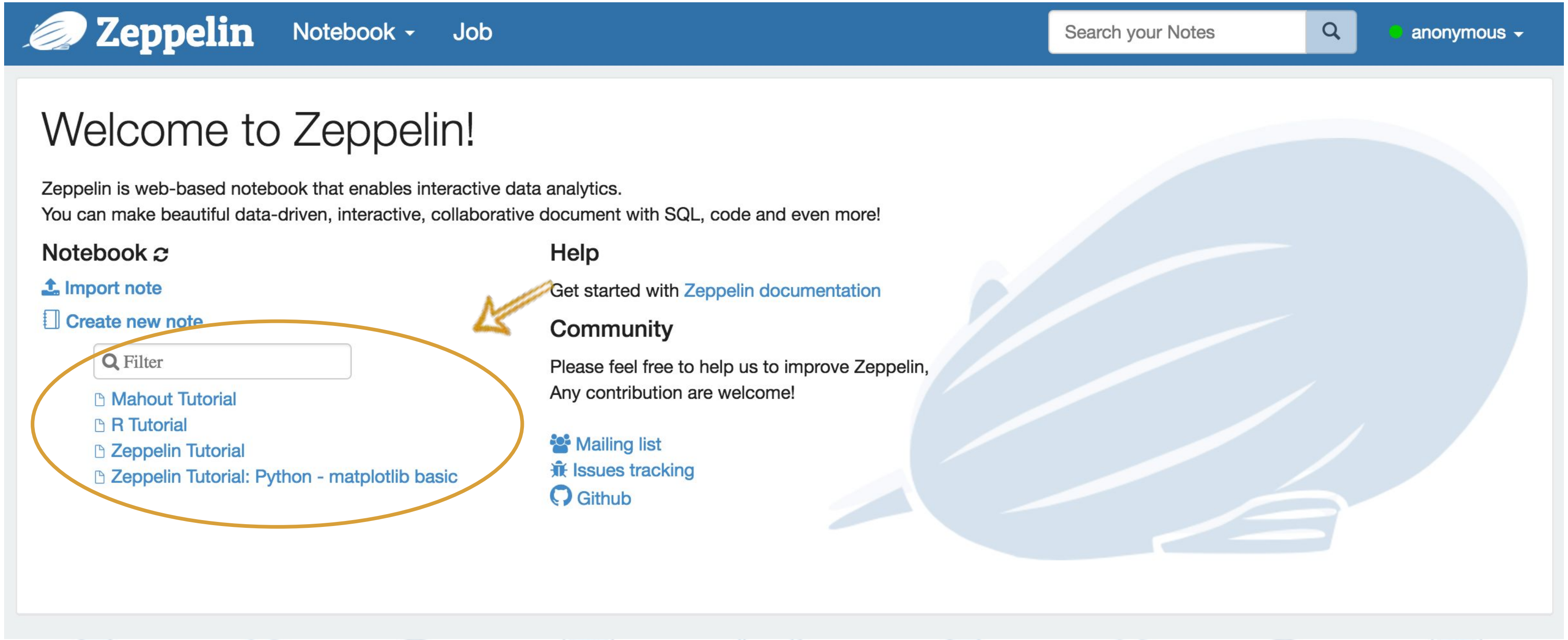
angular %angular ●

Interpreter Creation

- Click “+Create” button
- Fill out the fields
- Default properties will be displayed
- Manage dependency if it’s needed



Zeppelin Notebook Job

Search your Notes

anonymous

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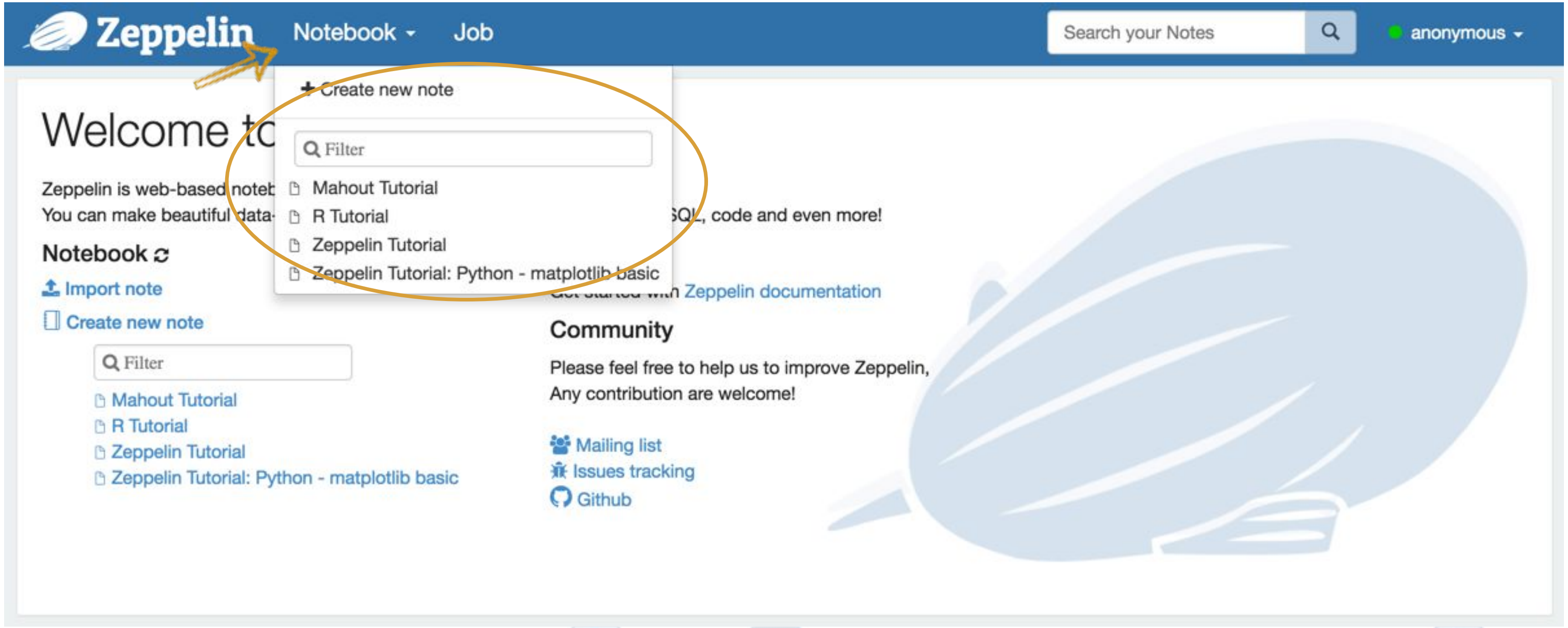

Zeppelin Notebook Job Search your Notes anonymous

+ Create new note

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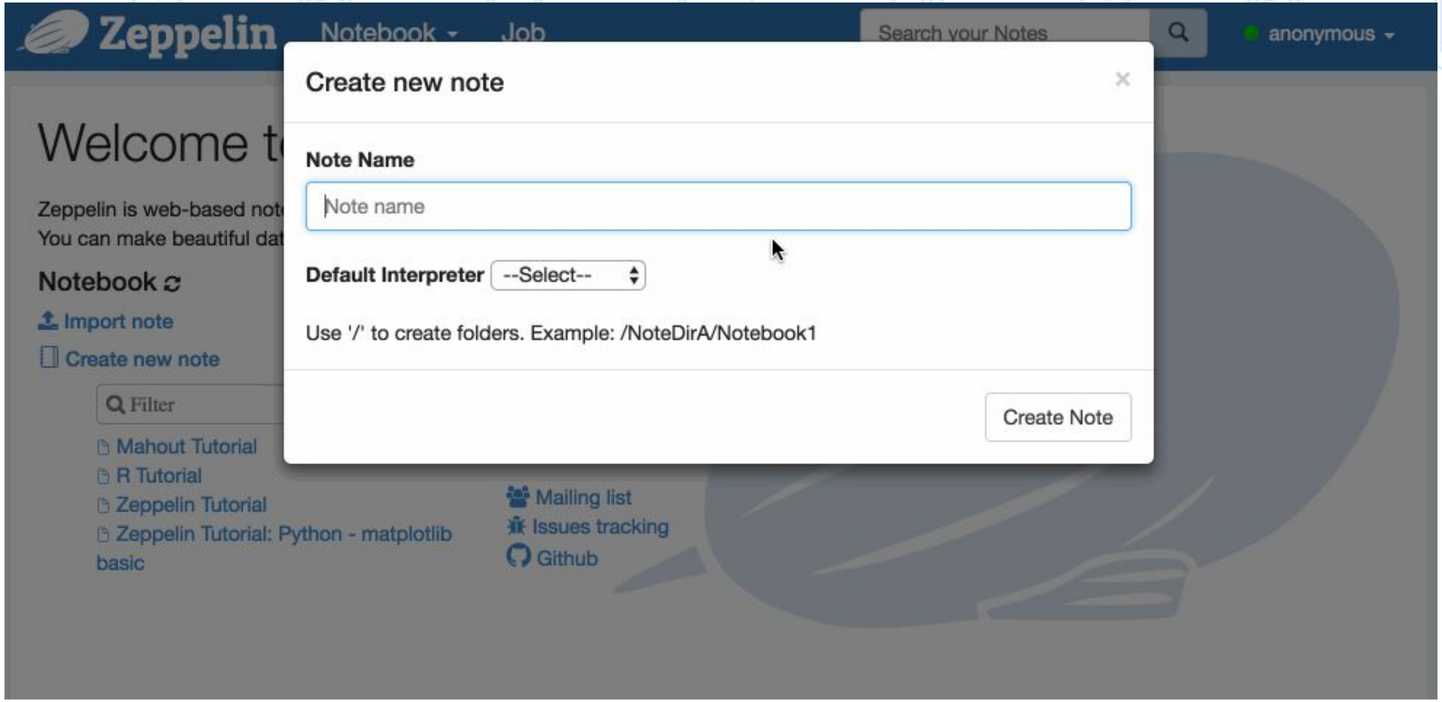

Zeppelin is web-based not
You can make beautiful dat

Mahout Tutorial
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Zeppelin Tutorial
Zeppelin Tutorial: Python - matplotlib basic

Create new note

Note Name

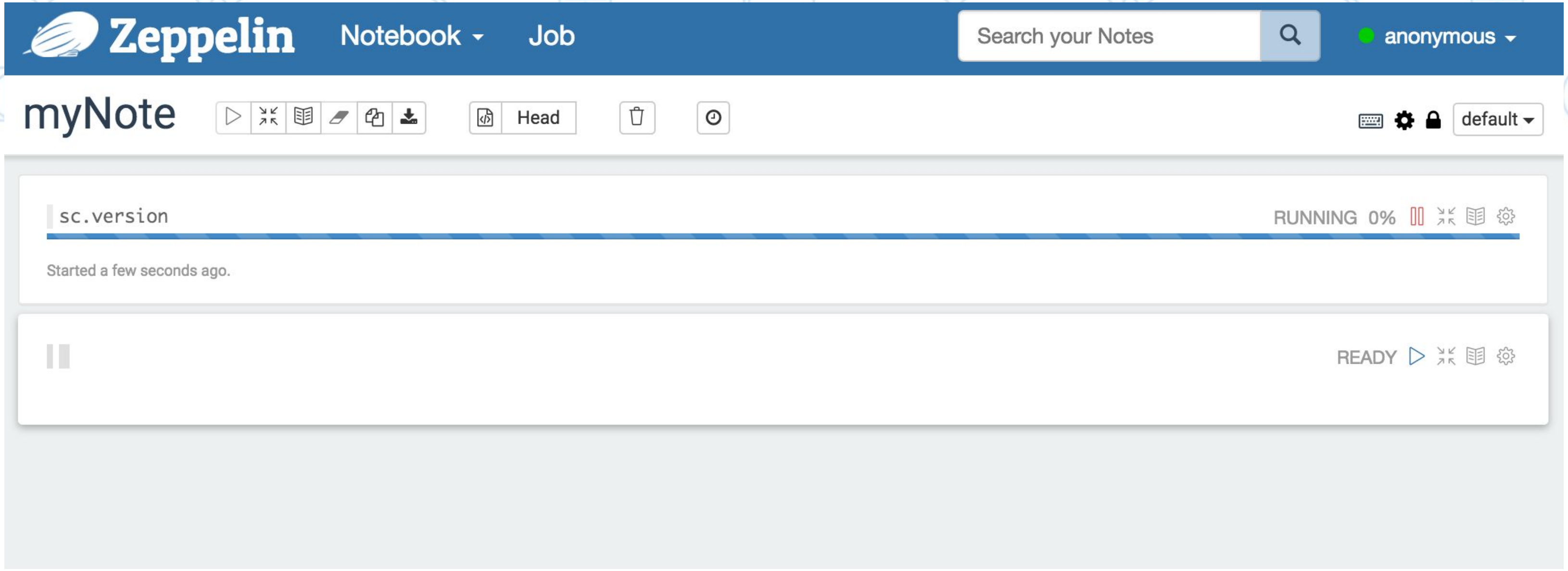
Note name

Default Interpreter --Select--

Use '/' to create folders. Example: /NoteDirA/Notebook1

Create new note

- Select **default** interpreter
- Also can create **directory** with "DirName/NoteName"



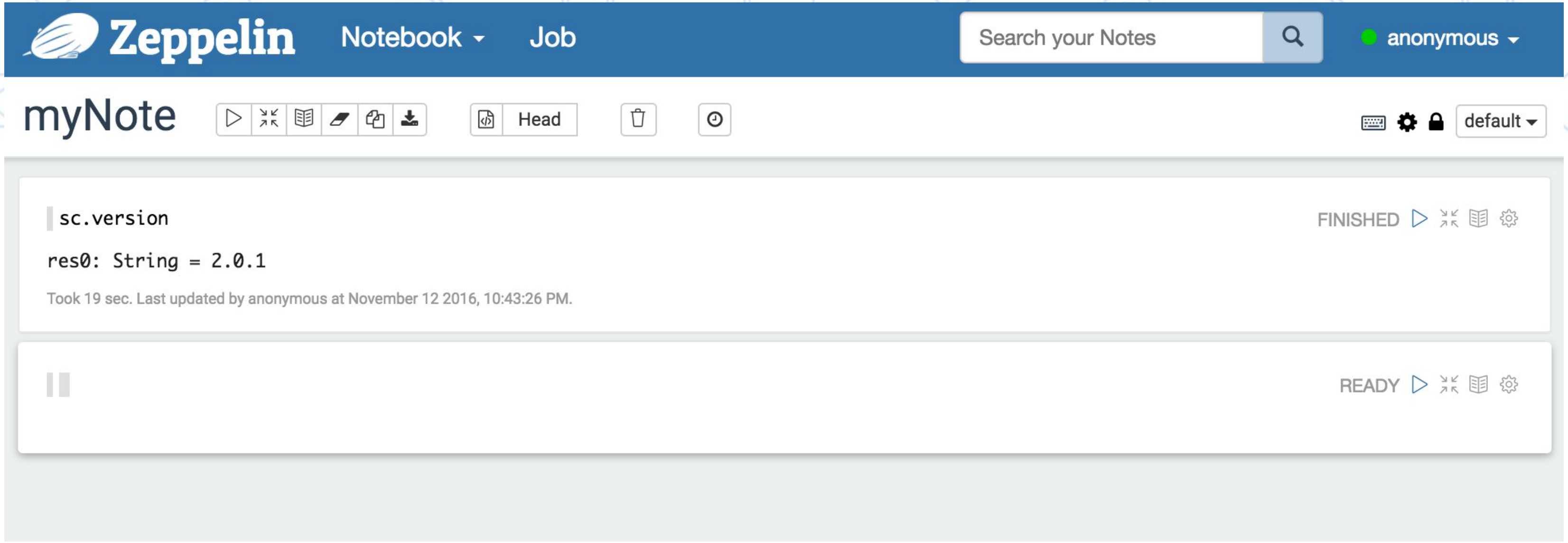
```
sc.version
```

RUNNING 0%

Started a few seconds ago.

Run your code in the paragraph

- Just write down your code and run (shift + enter) when you're using default interpreter
- You can see the progress bar / can stop the paragraph while running

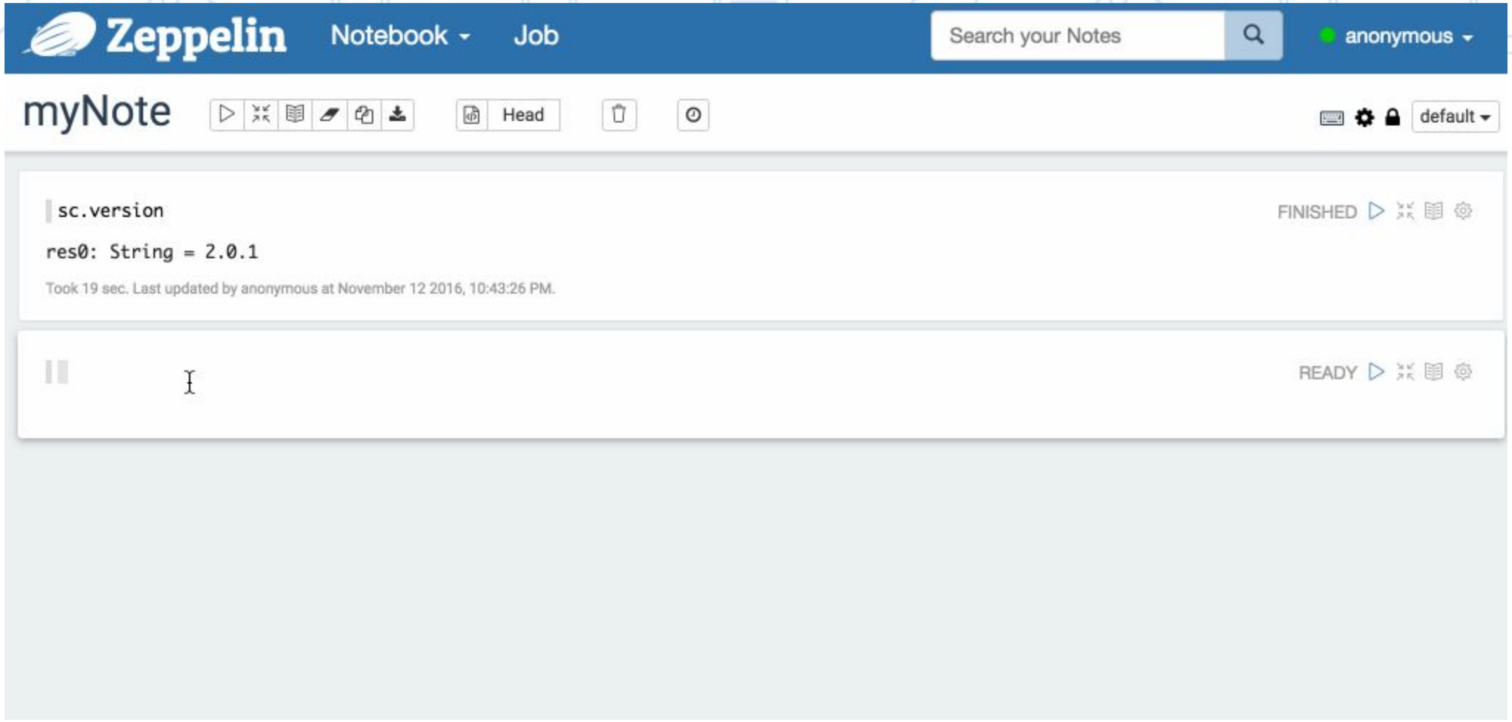


```
sc.version
res0: String = 2.0.1
```

Took 19 sec. Last updated by anonymous at November 12 2016, 10:43:26 PM.

The output after running

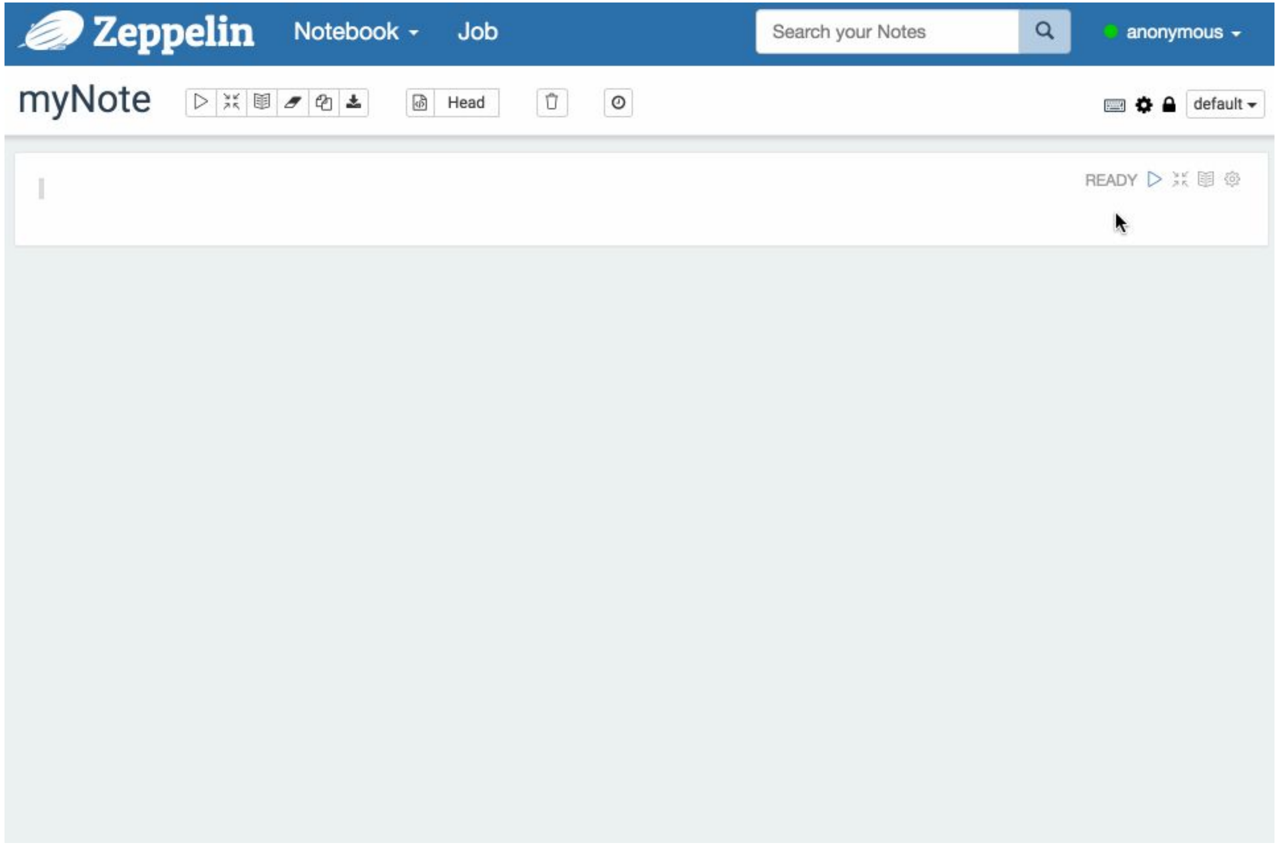
- The result of your code will be printed below the editor with elapsed time/ date/ user name



```
sc.version

res0: String = 2.0.1
```

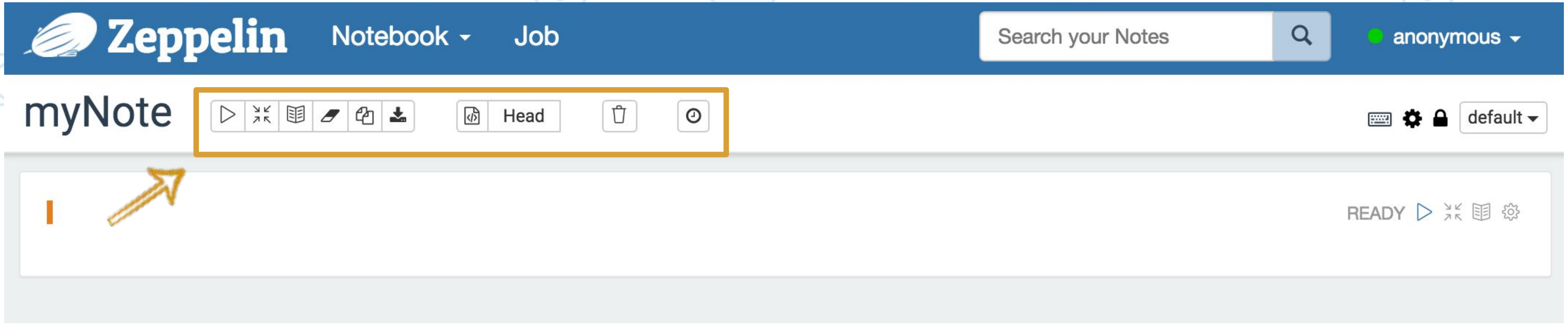
Took 19 sec. Last updated by anonymous at November 12 2016, 10:43:26 PM.

- You can use another interpreter with “%interpreter_name” in the header of paragraph
- E.g. %md for Markdown interpreter to add some description :)



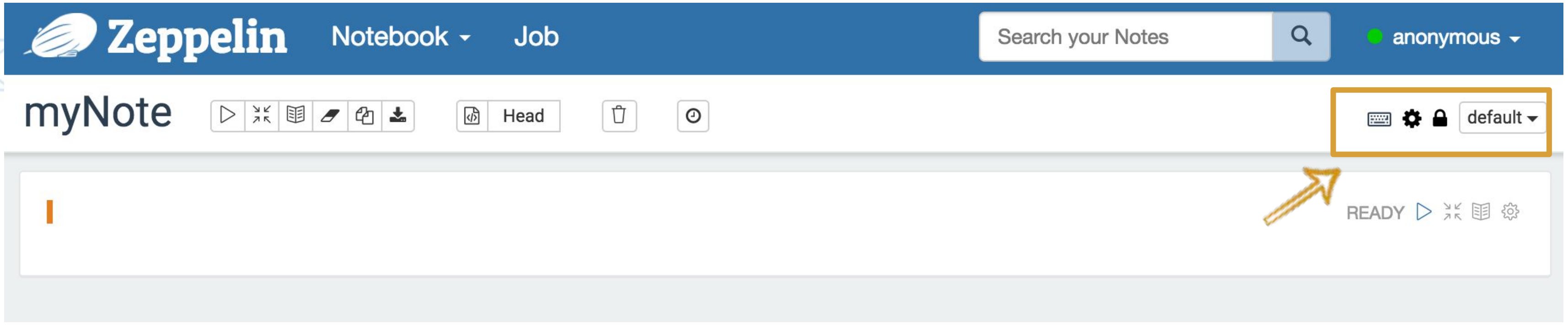
Interpreter Binding

- Change default interpreter
- Activate/deactivate
- Restart



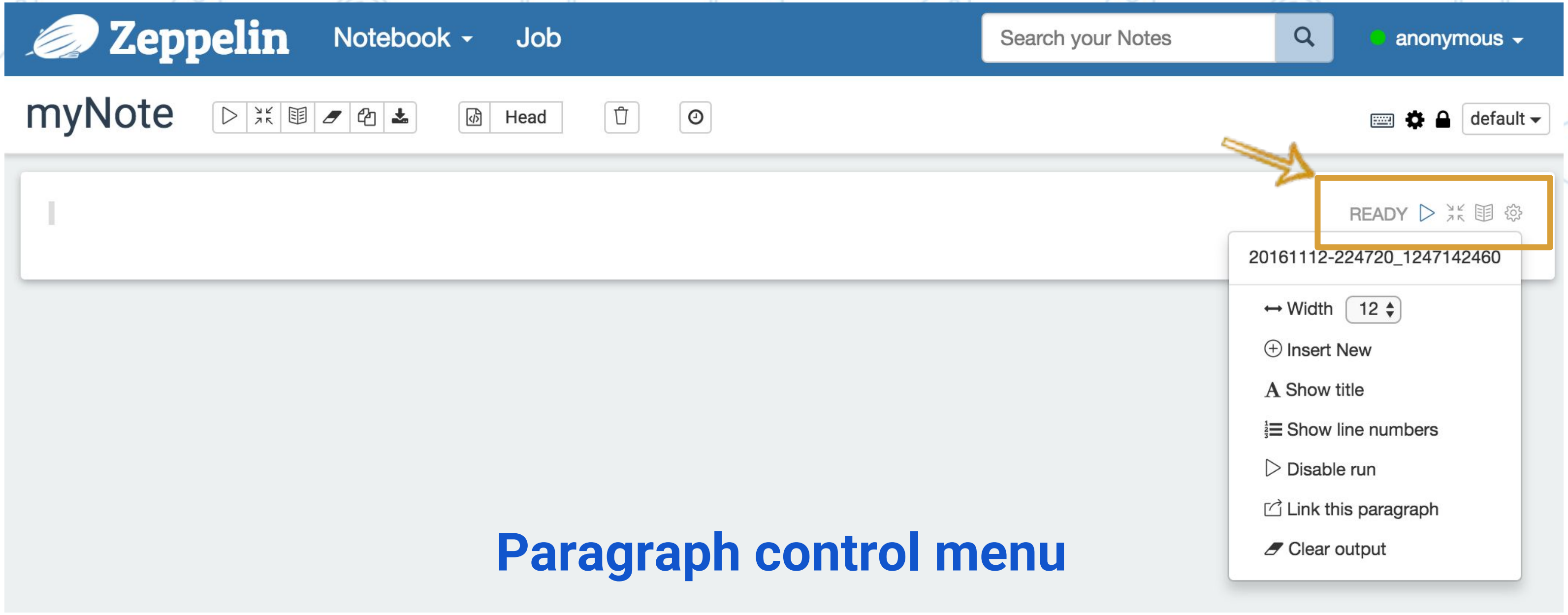
Note control menu

- Run all paragraphs
- Hide or show **code**
- Hide/ show/ clear **the outputs**
- Clone / exports / delete notes
- Note version control
- Run scheduler with **cron expression**



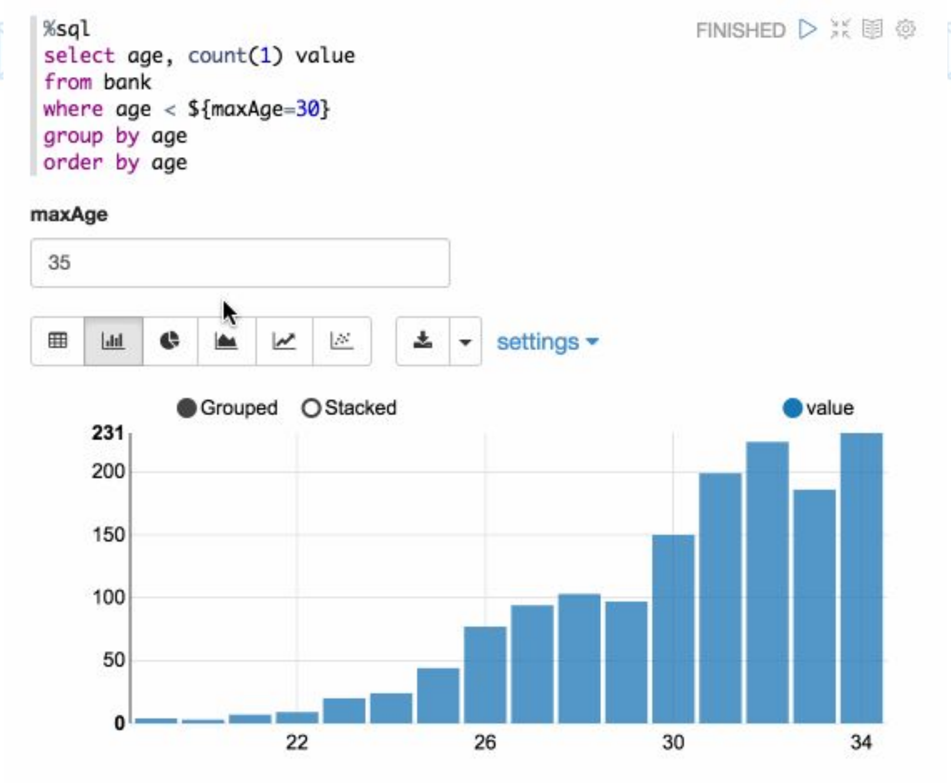
Note control menu

- Keyboard shortcuts
- Interpreter Binding
- Note permission setting
- LookNFeel setting (default / simple / report mode)



Paragraph control menu

- Check the status of result (READY / RUNNING / FINISHED/ ERROR/ PENDING)
- Run ▷ / Stop ▯▯ the paragraph
- Hide or show the code
- Hide or show the output
- Paragraph setting with gear icon

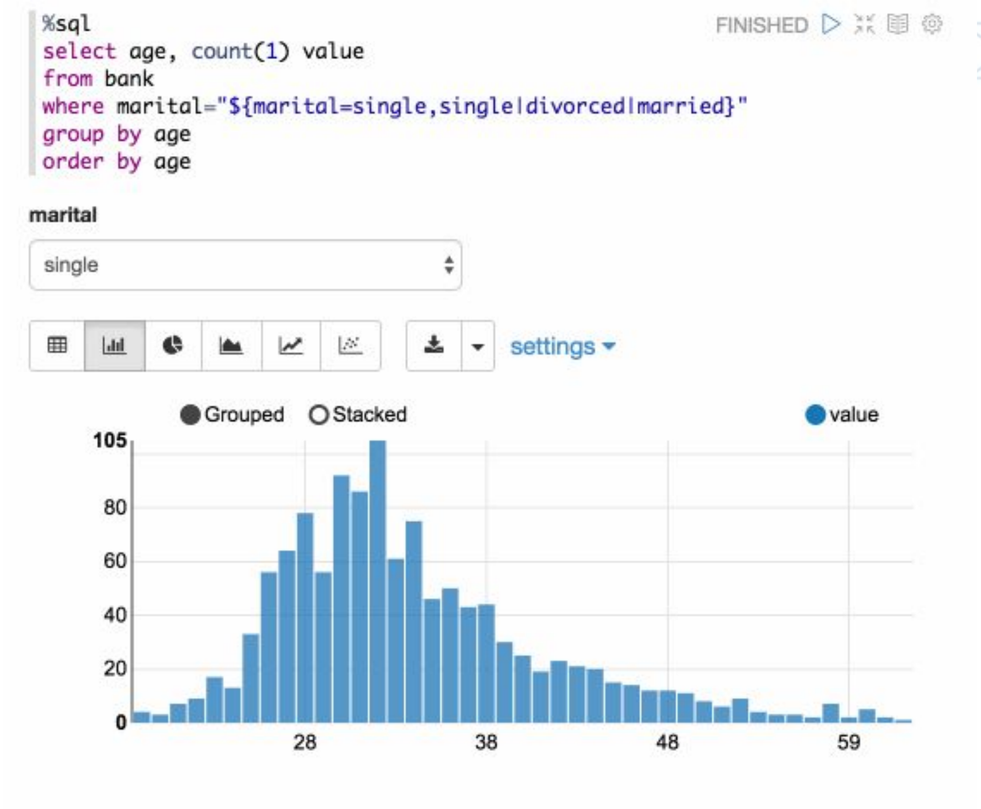


```
%sql
select age, count(1) value
from bank
where age < ${maxAge=30}
group by age
order by age
```

maxAge: 35

The basic feature - #1 Dynamic form

- You can create a dynamic input form in Zeppelin
- Text form: ***${form_name}***
- https://zeppelin.apache.org/docs/latest/manual/dynamicform.html#text-input-form



```
%sql
select age, count(1) value
from bank
where marital="${marital=single,single|divorced|married}"
group by age
order by age
```

The basic feature - #1 Dynamic form

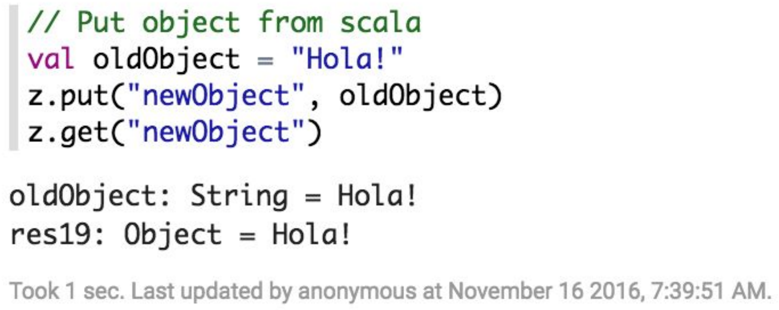
- Select form : ***${form_name = defaultValue, option1|option2...}***
- https://zeppelin.apache.org/docs/latest/manual/dynamicform.html#select-form

The basic feature - #2 Zeppelin Context

- Zeppelin automatically injects ***ZeppelinContext*** as variable "***z***" in your ***Scala*** **&** ***Python*** env.
- https://zeppelin.apache.org/docs/latest/interpreter/spark.html#zeppelincontext

The basic feature - #2 Zeppelin Context

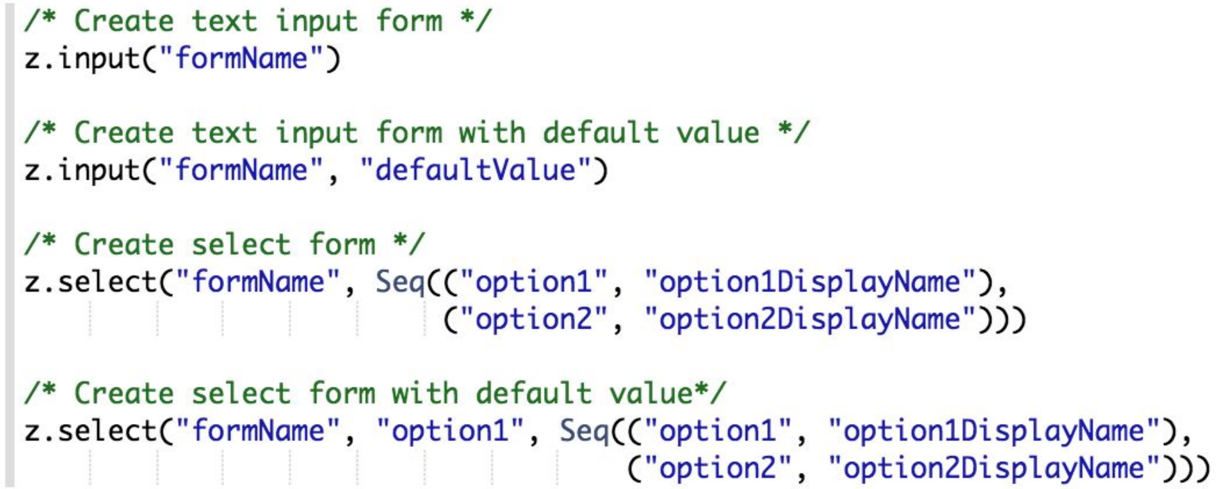
- ***Object Exchange***
- You can put some objects from Scala and read it from Python, vise versa.



```
// Put object from scala
val oldObject = "Hola!"
z.put("newObject", oldObject)
z.get("newObject")
```

```
oldObject: String = Hola!
res19: Object = Hola!
```

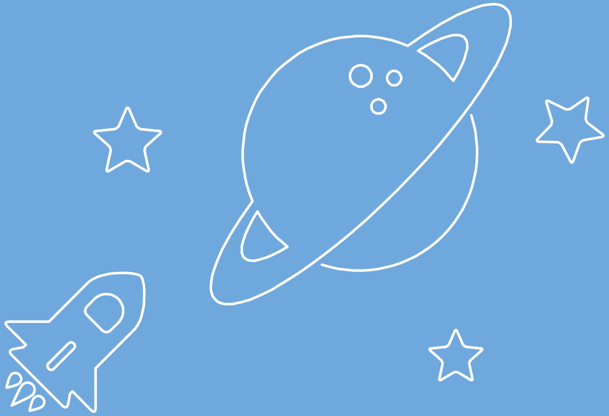
Took 1 sec. Last updated by anonymous at November 16 2016, 7:39:51 AM.



```
/* Create text input form */
z.input("formName")

/* Create text input form with default value */
z.input("formName", "defaultValue")

/* Create select form */
z.select("formName", Seq(("option1", "option1DisplayName"),
                         ("option2", "option2DisplayName")))

/* Create select form with default value*/
z.select("formName", "option1", Seq(("option1", "option1DisplayName"),
                                    ("option2", "option2DisplayName")))
```

The basic feature - #2 Zeppelin Context

- ***Form creation***
- ***ZeppelinContext*** provides function for creating forms.
- You can create forms programmatically in scala/python env.



Hands on Session

Let’s play with example dataset in your Zeppelin notes