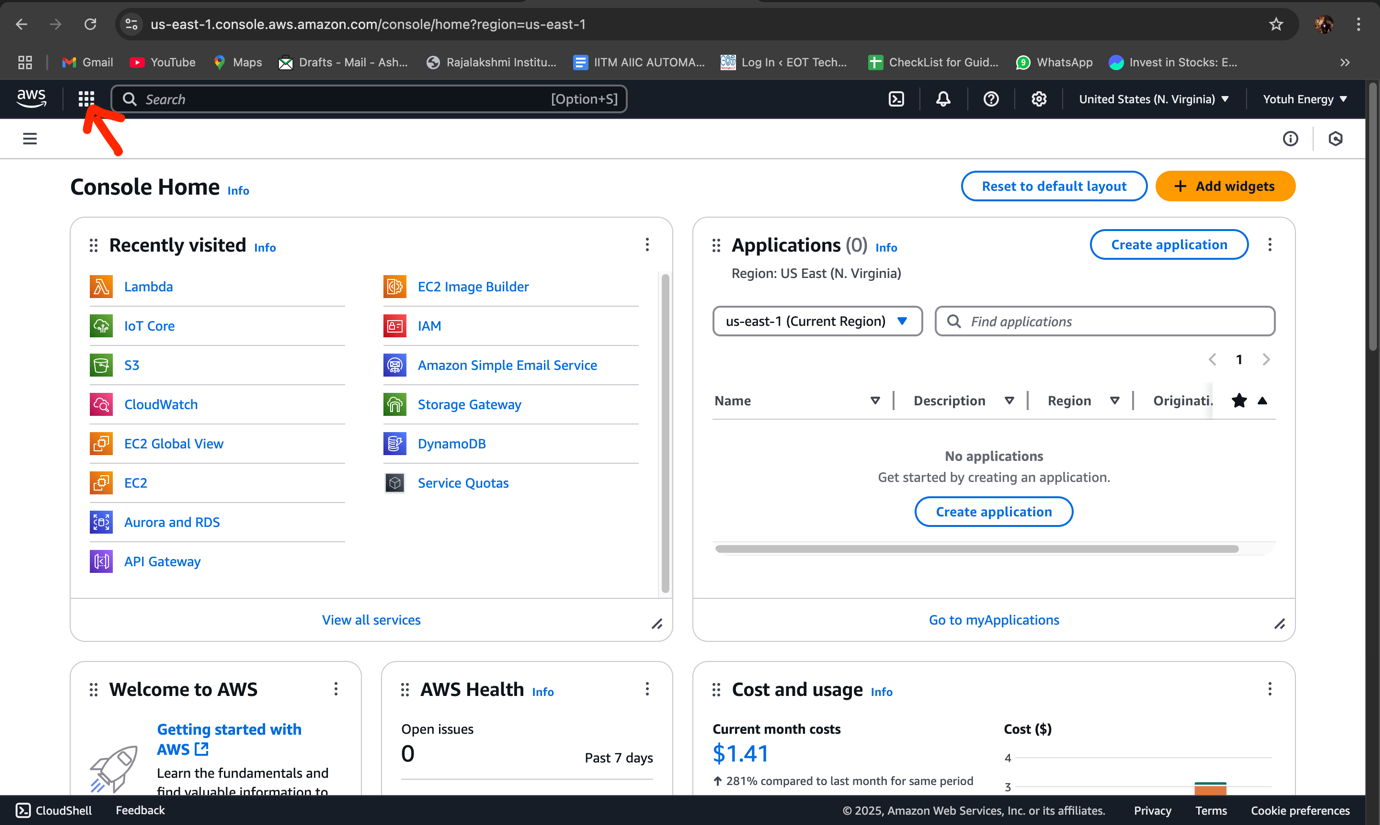
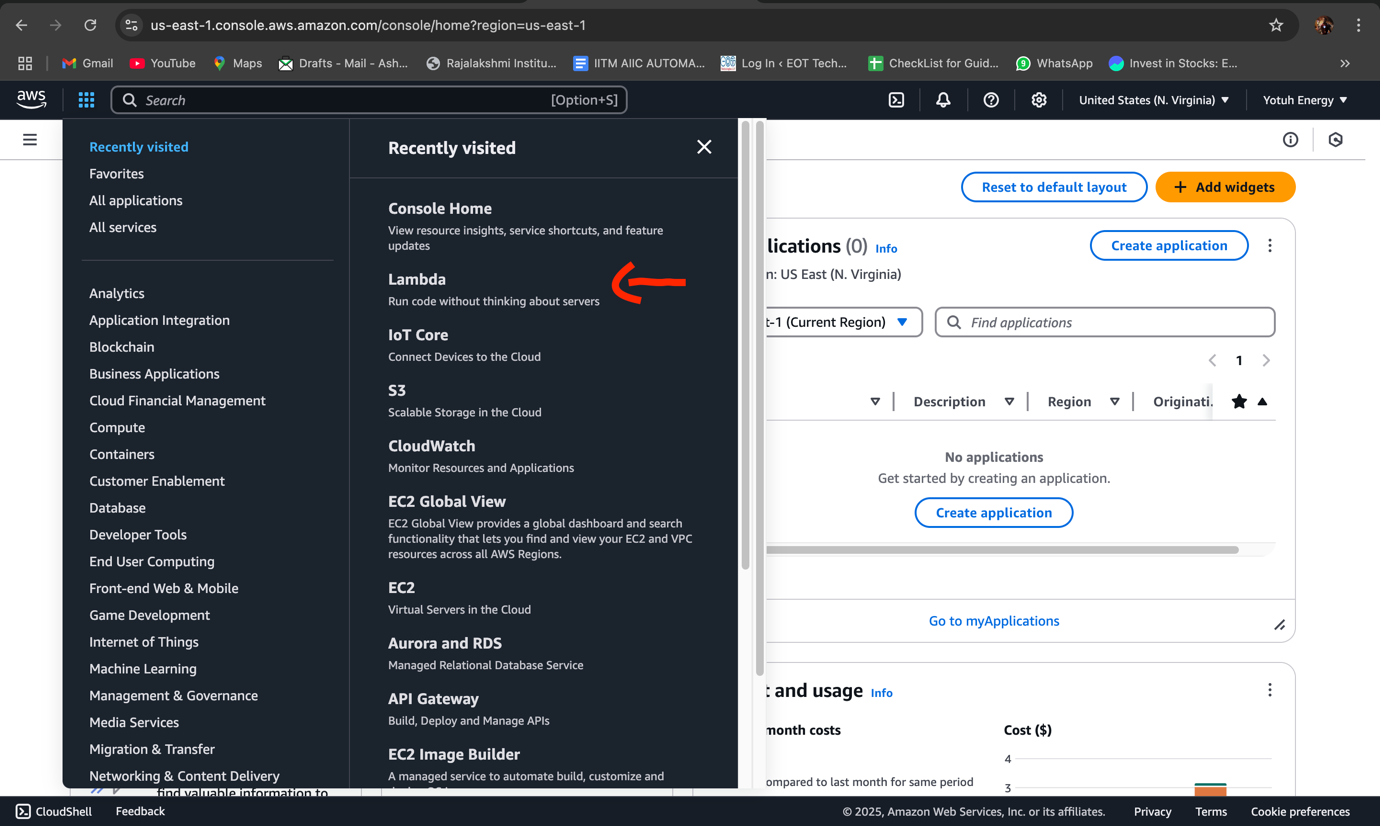
**Yotuh – Backend**

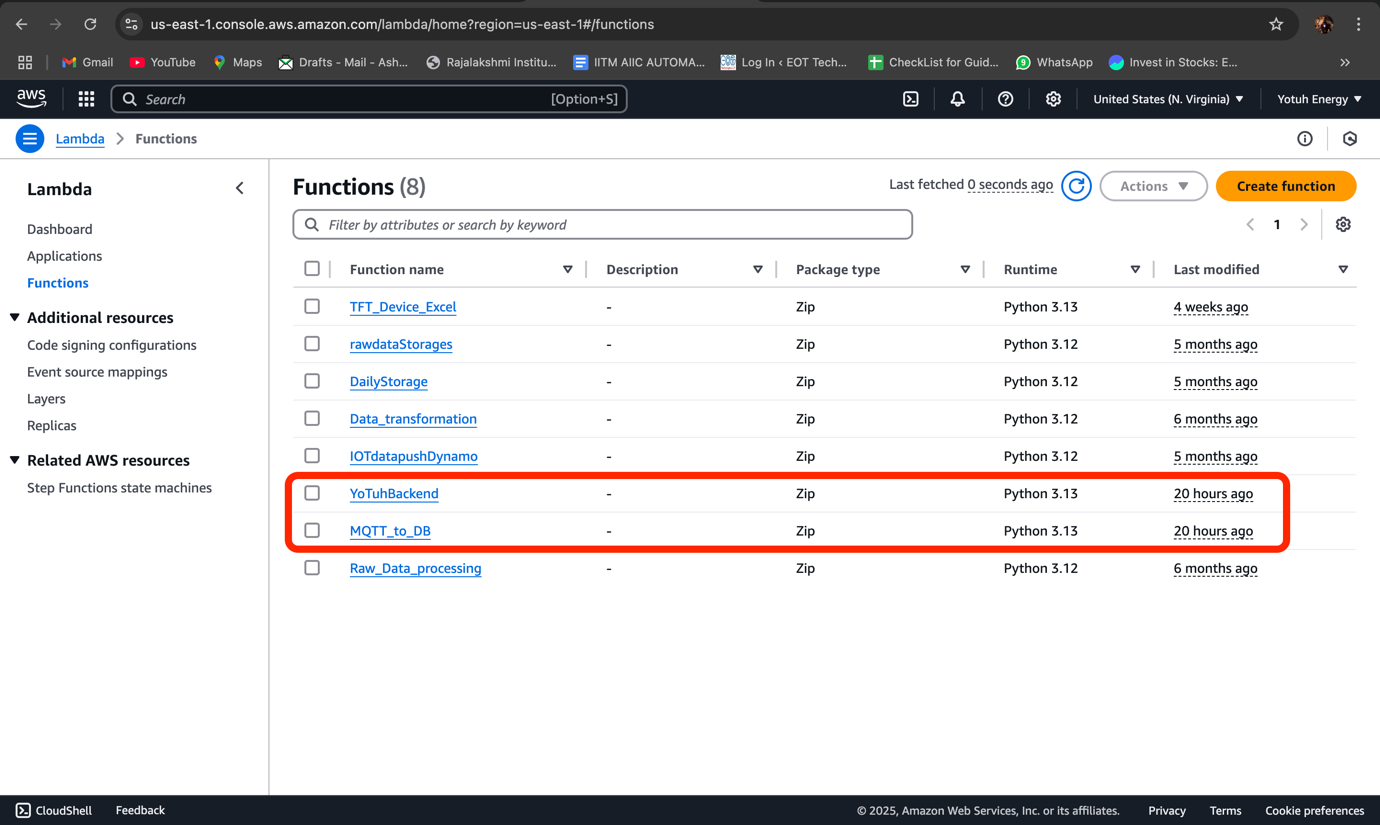
**Architecture:**

The backend is hosted using Amazon Lambda. The programming language used is **Python** You can view the code for it by Logging into the AWS Account using the

username : [Vivek@yotuh.com](mailto:Vivek@yotuh.com)  
password : Yotuh@0208  
  
Then using Google Authenticator enter the MFA code.  
  
Then in the dashboard click on the 9 dots icon on the top right   
  
  
  
Then click on the Lambda in the recently viewed. If lambda is not visible then type Lambda in the Search bar and select Lambda from the search results   


These are the two functions which we have created they are   
  
-> YoTuhBackend

-> MQTT\_to\_DB



Click on the functions to view their source code.

MQTT\_To\_DB is the file which has the code to fetch the JSON from the topic and parse all the hexadecimal values and then append it to the corresponding table in the Database. Here we use the **Amazon RDB** as the database. In order to identify which device is sending which data we use a unique identification for the device. So for example here is the JSON published to a topic called

**/youth/2534974966**   
  
{

"state": {

"reported": {

"11": 899100092,

"14": 2534974966, -> This is the unique identification number

"16": 44600,

"17": 48,

"18": -18,

"19": 1107,

"21": 5,

"24": 0,

"66": 11085,

"67": 4140,

"68": 0,

"69": 1,

"72": 0,

"73": 0,

"76": "0x0000000000000000",

"77": "0x0000000000000000",

"113": 100,

"181": 10,

"182": 7,

"199": 0,

"200": 0,

"238": "0x0000000000000000",

"239": 1,

"240": 1,

"241": 40440,

"902": "0x51BD4E074E7D3852",

"903": "0x36CF3726392D4AAE",

"904": "0x748A943C44D87695",

"905": "0x12C0747C75510401",

"906": "0x0100010002000000",

"907": "0x01430207735D0000",

"908": "0x0CB40CAD49490000",

"909": "0x0000000000000000",

"ts": 1741360785000,

"pr": 0,

"latlng": "13.090645,80.168782",

"alt": 33,

"ang": 94,

"sat": 15,

"sp": 0,

"evt": 0

}

}

}  
  
**Note : Please ensure that the JSON contains the unique identification number in the key called “14”. Also the topic should be named as /youth/<Unique identification number> . So for example if the value of the key “14” is 2534974966 , then the topic should be /youth/2534974966**

Amazon RBD (Database)

Lambda function (MQTT\_to\_DB)

Publishes to MQTT Server

Publishes to MQTT Server

Publishes to MQTT Server

Teltonika Device

Teltonika Device

Teltonika Device

**Architecture diagram of the MQTT\_to\_DB function**

Now let us see the YoTuhBackend function

This function consists of API endpoints. It acts as an intermediate between the RDB database and the frontend. This uses HTTP protocol for communication.

Lambda Function  
(YotuhBackend)

Http Request

Amazon RDB

Frontend

Return response

**Architecture of YotuhBackend Function**

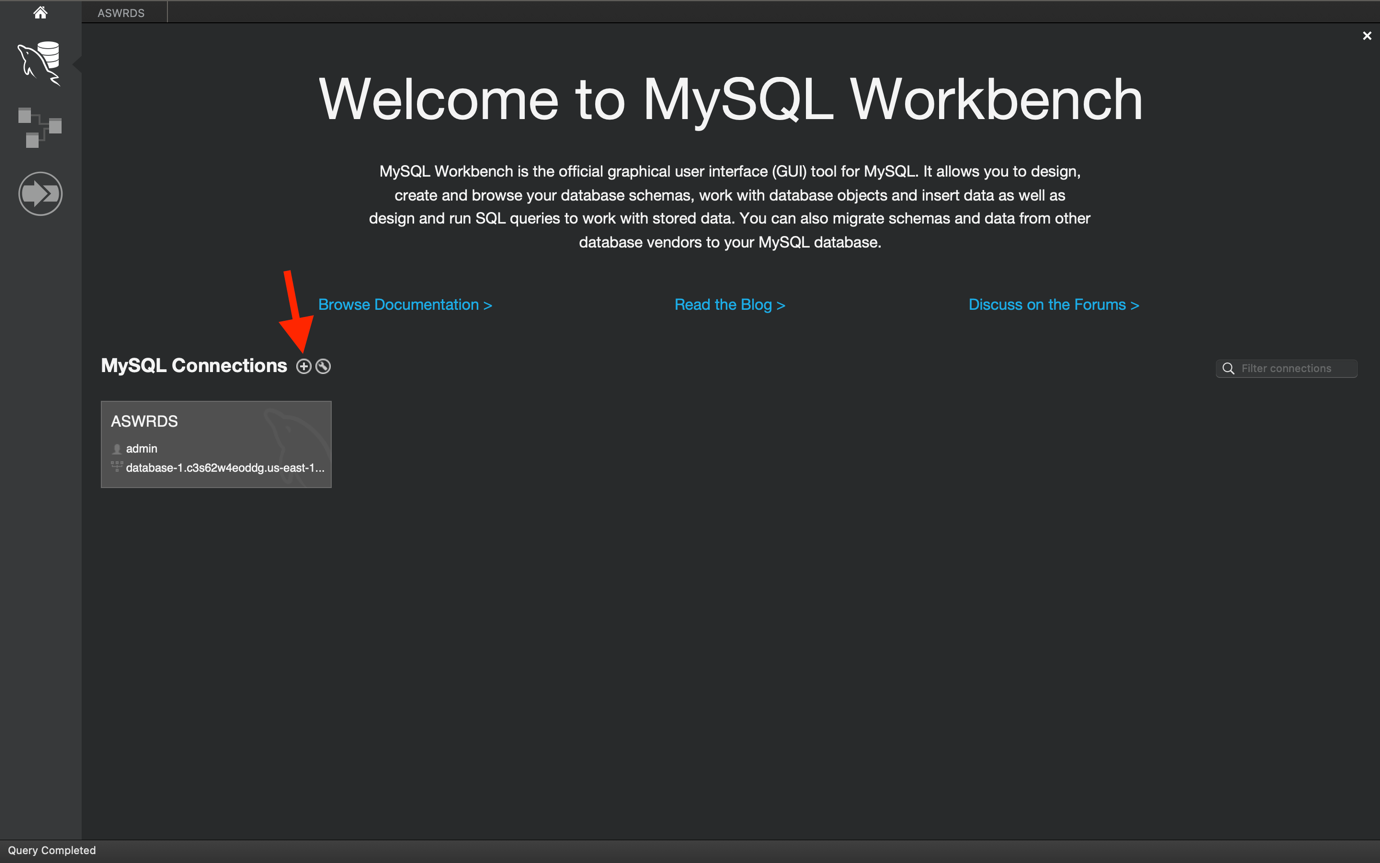
**Database**The database used is Amazon RDB , this is a **SQL based Database.** Here are the credentials for it   
  
Database URL = **database-1.c3s62w4eoddg.us-east-1.rds.amazonaws.com**  
  
Database Name = **data**  
  
Database Password = **testdbadmin**  
  
Database User = **admin**

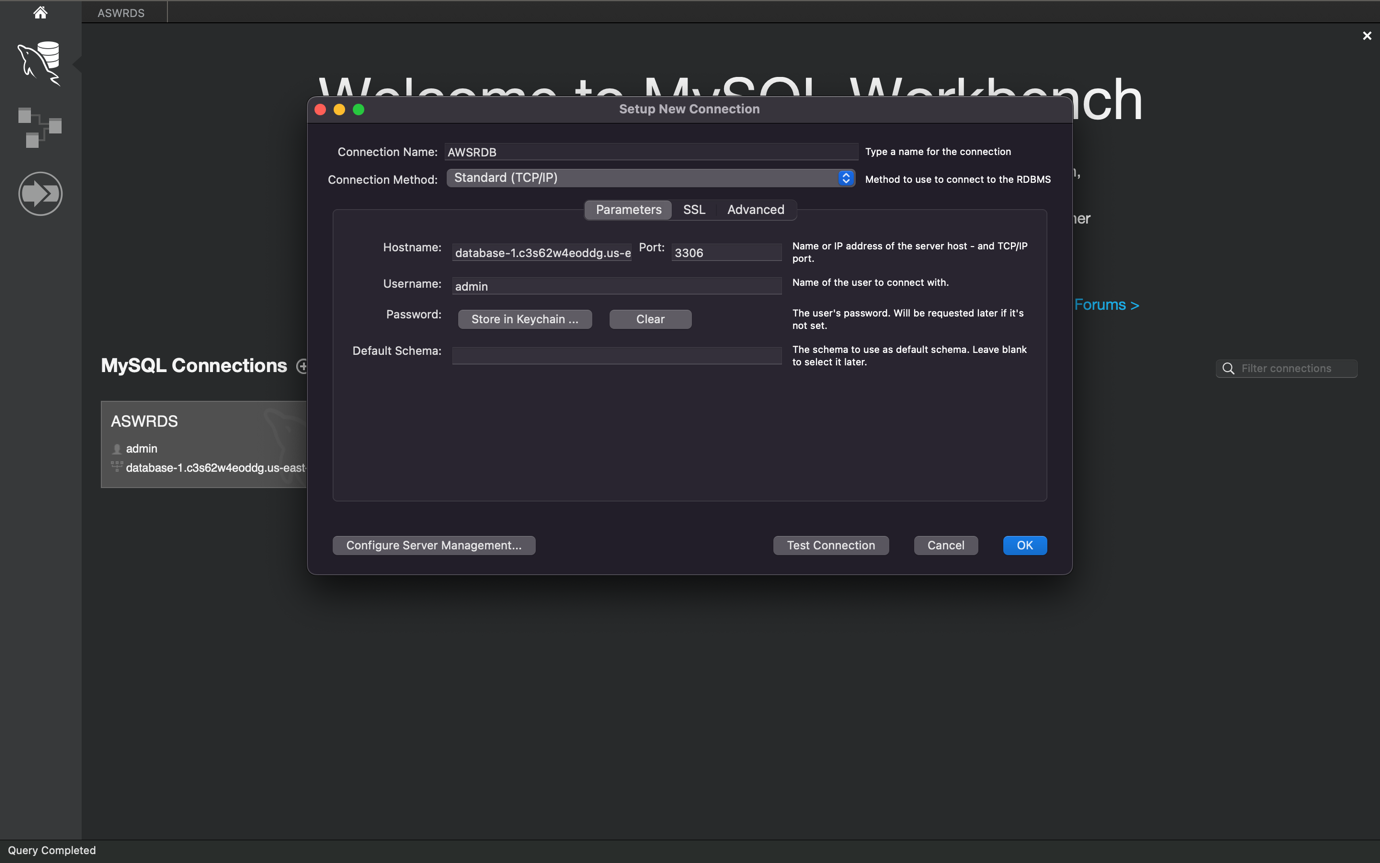
So in order to connect to the database and view the tables and other data follow these steps.   
  
1.)We need a broker or a platform to connect to the Database , so we can use   
**MySQL WorkBench**2.)Download and install MySQL Wokrbench from the below link

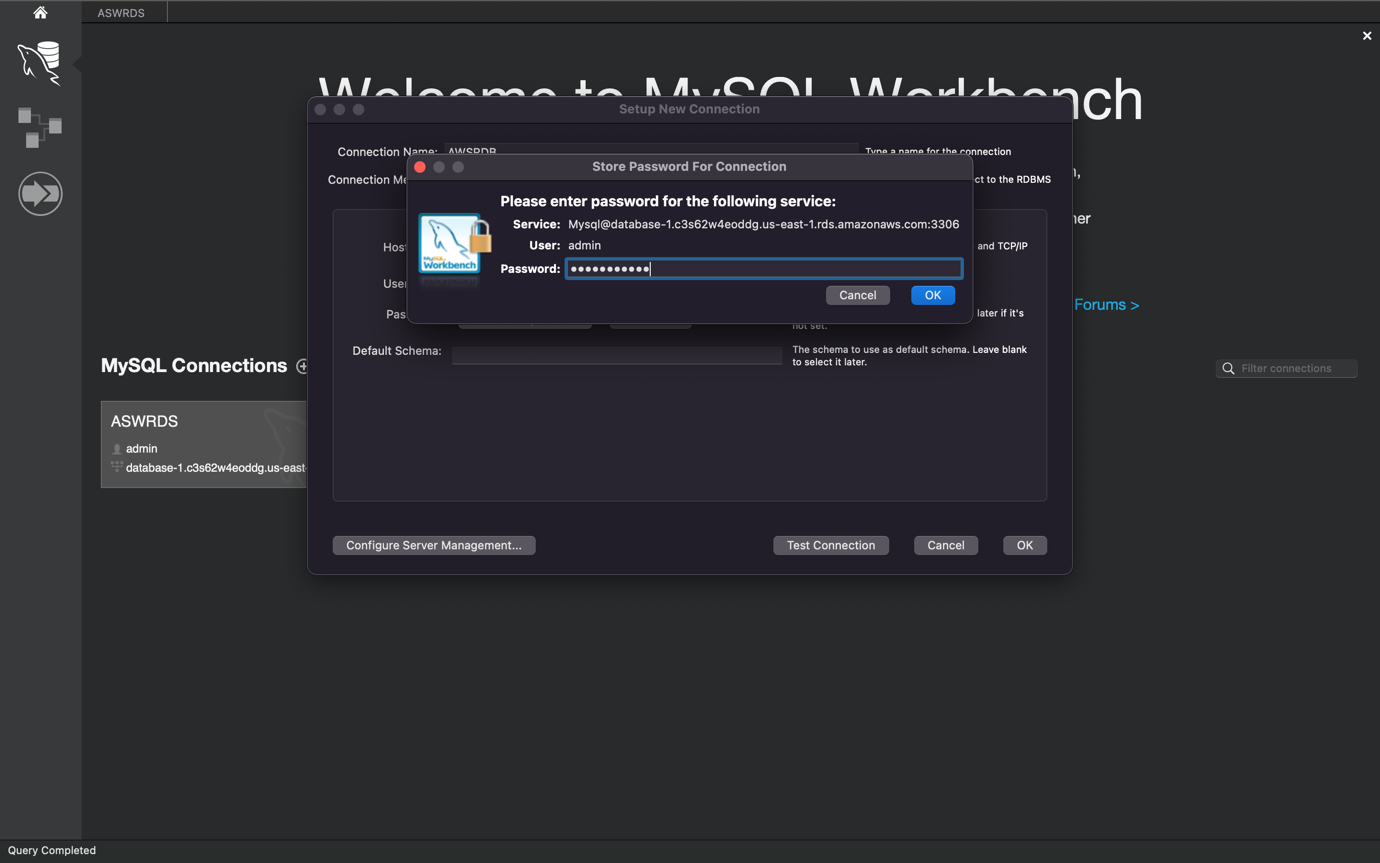
<https://www.mysql.com/products/workbench/>

3.) After installing click on the Add new connection button.

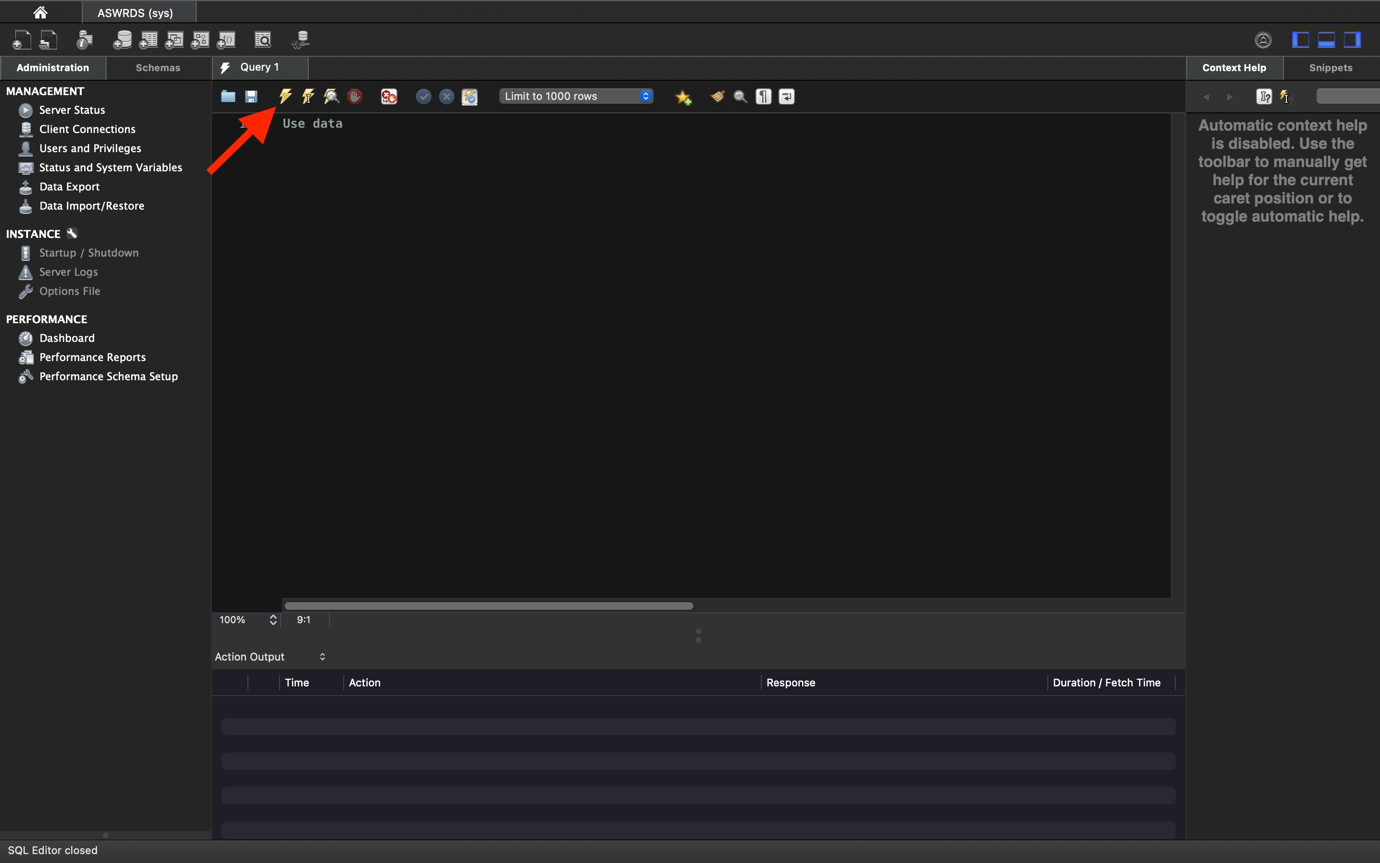
|  |
| --- |
|  |



Then fill the necessary details like the Connection Name: AWSRDB (You can give your own connection name , this is just for our own identification)  
  
  
  
Then click on the Store in Keychain and type the password as  
**testdbadmin**



Click on Ok and then click on Test Connection. If you get the message to be “Success” then it means that your connection with the database is successful. Click on OK

All the above steps are just a One time process ,after this setup click on the AWSRDB. It will open the editor.  
  
In the editor you can type your SQL commands and execute your queries. So the first step is to point to the database , so execute the below query  
  
**Use data**To execute the query click on the lightning symbol on the widgets bar to run the query  
  


To view all the tables execute this query   
  
**Show tables**

To view all the values inside a table execute this query  
 **Select \* from youth<Unique identification number> order by ts desc limit 15**

**For example :  
  
Select \* from yotuh2534975005 order by ts desc limit 15**

**Note: Limit 15 will display the recent 15 values , if you want the recent 100 or 200 or 500 values change 15 to 100 or 200 or 500**

To view all the values of the users table execute this query  
  
**Select \* from users**

These are just the basic commands , you can refer to sql documentation for further commands

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