

SQL

Saturday, November 30, 2024 12:38 PM

Database – Collection of information stored in tables with Rows [Record full detail] and columns [Header Particular detail]
SQL – Language to communicate with DB
Database Management System [DBMS] - It's a software where we execute our queries [MySQL, oracle, SQL lite etc.]
MYSQL – Open source DBMS software

Describe command – To view the schema and constraints[Validations, default values]of the table

The screenshot shows the MySQL Workbench interface. In the top tab bar, 'SQL Queries' is selected. Below the tabs are various icons for database management. The main area contains the following SQL code:

```
6
7  #Create Table string - varchar number - integer
8 • create table EmployeeInfo(name varchar(20),id int,location varchar(20),age int);
9
10 #To view the table in structured way[Schema] use describe TABLE_NAME command
11 • describe EmployeeInfo;
12
```

Below the code, the 'Result Grid' tab is active. It displays the schema of the 'EmployeeInfo' table:

Field	Type	Null	Key	Default	Extra
name	varchar(20)	YES		NULL	
id	int	YES		NULL	
location	varchar(20)	YES		NULL	
age	int	YES		NULL	

If we did any changes in preferences we need to restart the server
[Query>>Restart server] to see the changes

Basic Queries

Create DB – create database DBNAME
Point to DB – use DBNAME
Create table – create table TABLE_NAME values(name datatype[length]);
Describe command – describe TABLE_NAME To view the schema and constraints[Validations, default values]of the table
Insert command – To insert data into the table
Insert into TABLE_NAME values()
Retrieve values from table – select * from TABLE_NAME or select values from TABLE_NAME
Alter table – mainly used for column changes like adding modifying dropping and updating
Alter table to add column – alter table TABLE_NAME add column name
Alter table to modify column – alter table TABLE_NAME modify column name
Update set and where – To update the table mention the column name using set and mention the record using where
Update TABLE_NAME set column name = value where column name= value
Delete from TABLE_NAME where column name= value
Unique from TABLE_NAME - select distinct column name from TABLE_NAME;
AND operator - select distinct name from EmployeeInfo where location='barcelona' and age>20;
AND n OR operator – Braces for and operator select distinct name,age,location from EmployeeInfo where (location='barclerona' and age>20) or age>=22
In operator - #Get the name with specific location - in operator [chooses between set of specific values]
select name from EmployeeInfo where location in('chelsea','barcelona','spurs');
#High range using between operator
select name from EmployeeInfo where age between 22 and 25;
#High range using between operator and not operator
select name, age from EmployeeInfo where age not between 24 and 25;
#Regular expressions % for Many random characters and _ for single random character -
Keyword like
select countrycode from city where CountryCode like 'I%';
select Name from city where Name like '_N%';
select countrycode from city where CountryCode like '_%H';
#Sorting Order by desc and ascending
select District, id from city order by ID;
select District, id from city order by ID DESC;

[Playwright](#)

Wednesday, January 4, 2023 9:18 AM

Playwright was created specifically to accommodate the needs of end-to-end testing. Playwright supports all modern rendering engines including Chromium, WebKit, and Firefox. Test on Windows, Linux, and macOS, locally or on CI, headless or headed with native mobile emulation.

[Supported Languages:](#)

- Java
- Python
- JavaScript
- TypeScript
- .NET

[Supported Browsers:](#)

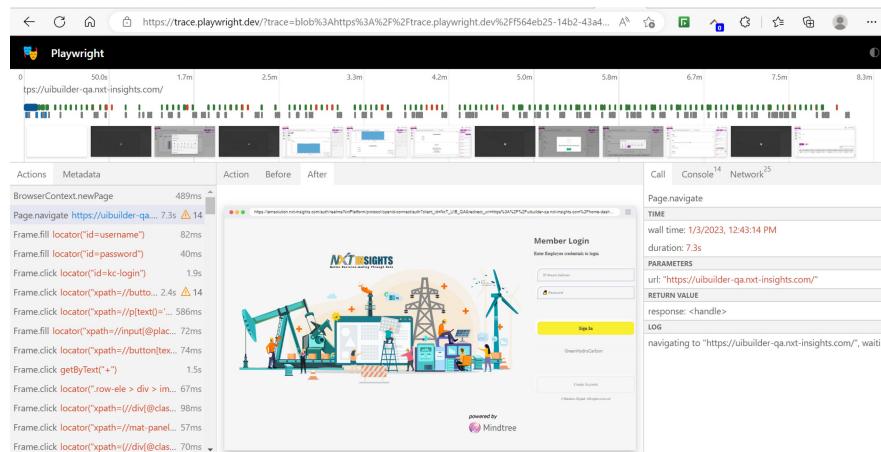
- Chromium- Chrome, Edge, Brave
- WebKit
- Firefox

[Available Locators:](#)

- [Locate by role](#)
- [Locate by label](#)
- [Locate by placeholder](#)
- [Locate by text](#)
- [Locate by alt text](#)
- [Locate by title](#)
- [Locate by test id](#)
- [Locate by CSS or XPath](#)
- [Chaining selectors](#)
- [N-th element locator](#)
- [Parent element locator](#)
- [React locator](#)
- [Vue locator](#)
- [Label to form control retargeting](#)
- [Legacy text locator](#)
- [id, data-testid, data-test-id, data-test-selectors](#)

[Playwright Features](#)

1. **Auto-wait:** Wait until element to be visible
2. **Custom-wait:** Custom wait is available
3. **Web-first Assertions:** Playwright has an in-built library to auto verify when interacting with the web element
4. **Tracing:** Tracing can be useful for debugging issues in your web application and for analysing the performance of your application.



4. Can able to Record **video** and take **Screenshots**.
5. **Locators:** various locators are available to identify & interact with the elements.
6. **Codegen:** It is useful to get locators of the particular element.



```
import com.microsoft.playwright.*;
import com.microsoft.playwright.options.*;
import static com.microsoft.playwright.assertions.PlaywrightAssertions.assertThat;
import java.util.*;

public class Example {
    public static void main(String[] args) {
        try (Playwright playwright = Playwright.create()) {
            Browser browser = playwright.chromium().launch(new BrowserType.LaunchOptions()
                .setHeadless(false));
            BrowserContext context = browser.newContext();
            page.navigate("https://iamsolution.nxt-insights.com/auth/realm/NxtPlatform/protocol/openid-connect/auth?client_id=Nxt_UIB_DEV&redirect_uri=https%3A%2F%2F");
        }
    }
}
```

7. It supports various frameworks like **TestNG**, **Jest**, **Mocha**, **Jasmine**.
 8. It supports third party lib to generate **HTML reports**.
 9. Ability to upload and **download** files.
 10. Supports the execution of parallel testing through **Browser Context**
 11. Debugging options include **Playwright Inspector**, VSCode Debugger, Browser Developer Tools, and **Trace Viewers Console Logs**.

Other Playwright Features

- a. It supports API Testing
 - b. It supports Full Page screenshot, Element screenshot
 - c. It supports Page Object Model Design pattern
 - d. It supports integration with Docker, Selenium Grid and CI

Cons of choosing Playwright

- Playwright doesn't support Native Mobile Apps
 - No Support for IE11
 - Since Playwright is fairly new, the support from the community is limited.

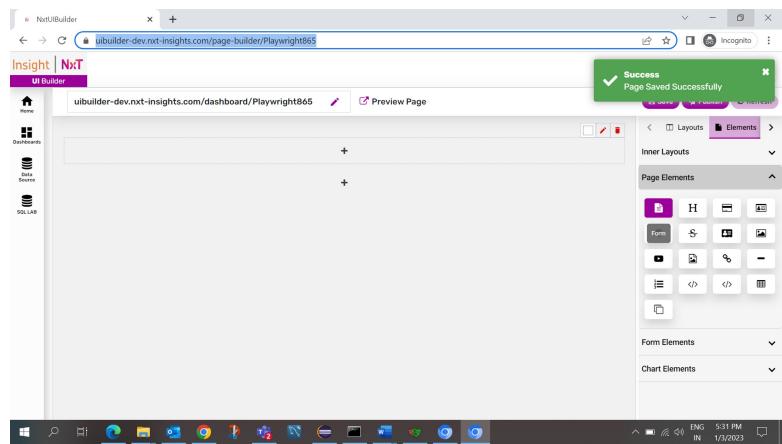
UI Builder Script - Playwright

Elements added in automation script using Playwright Java

<u>Chart Elements</u>	<u>Page Elements</u>	<u>Form Elements</u>
1. Bar Chart	1. List Element	1. Added all Form Elements
2. Big Number	2. Address Element	
3. Area Chart	3. Image Element	

Errors Faced in Dev Environment

1. Inserting Bar chart issue as it just hovers on the right side of the Page Element Form



2. Edit Element issue as sometimes it can't interact
3. Date Element issue as sometimes it can't interact in Form

Cypress

Wednesday, January 4, 2023 2:11 PM

Cypress is an open-source, full-featured, and easy-to-use [end-to-end testing](#) framework for web application testing. Cypress supports most of the modern applications built on React, Angular and so on. It supports various browser versions of Google Chrome, Mozilla Firefox, Microsoft Edge(Chromium-based) and Electron.

Supported Languages:

- JavaScript
- TypeScript

Supported Browsers:

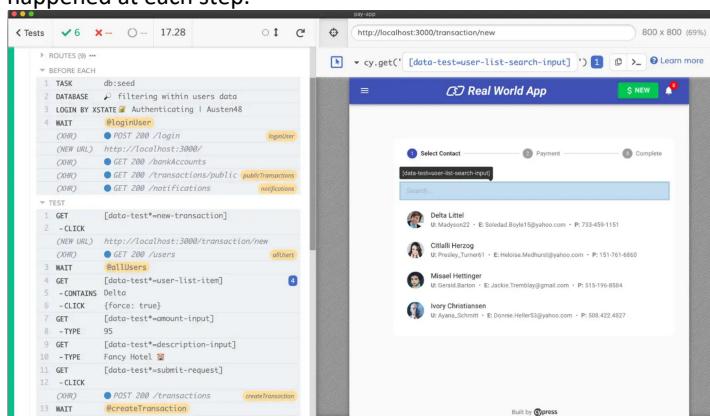
- Chromium- Chrome, Edge
- Electron(Default Browser)
- Firefox

Available Locators:

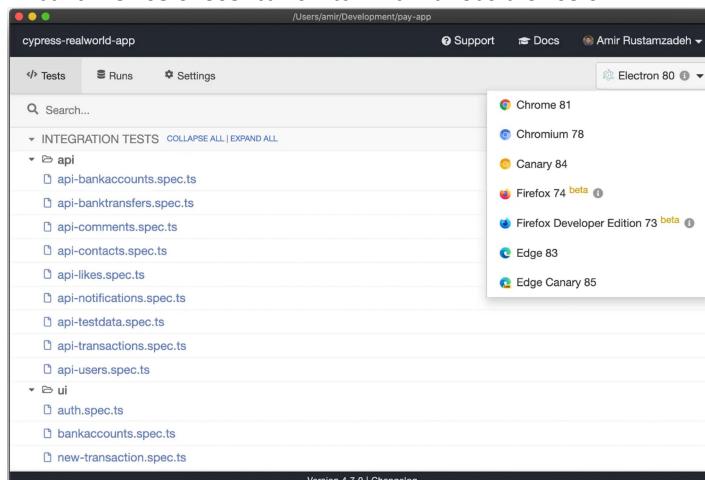
- CSS Selector(Default Selector)
- Xpath (Plugin needed)

Cypress Features

- Auto-wait:** Wait until element to be visible
- Custom-wait:** Custom wait is available Implicit & Explicit
- Web-first Assertions:** Cypress has an in-built library to auto verify when interacting with the web element
- It has a user-friendly **dashboard** that shows you all your test runs. Also, Cypress tests run in the same process as the application, which makes debugging and testing faster.
- Time travel:** Cypress takes snapshots as your tests run. Simply hover over commands in the [Command Log](#) to see exactly what happened at each step.



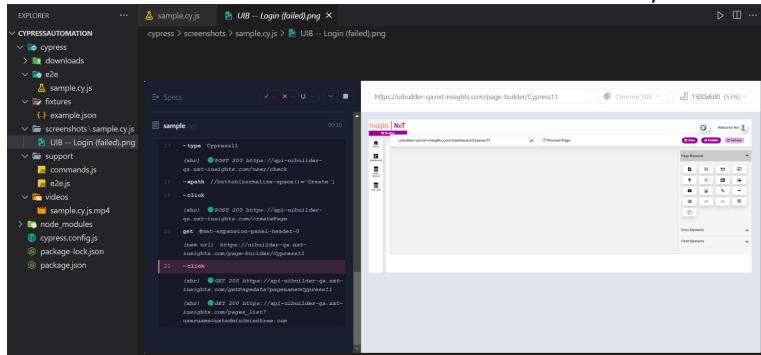
- In-built Browsers:** User can switch with various browsers



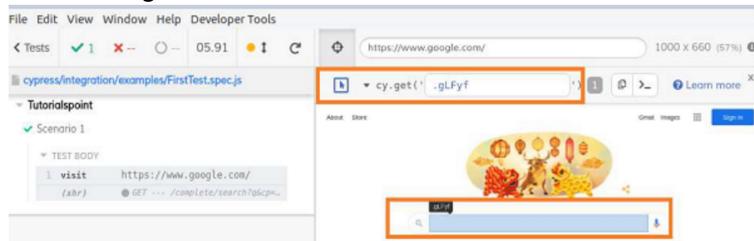
- Organize results:** Get quick access to results of your latest CI test runs recorded to Cypress Cloud

The screenshot shows the Cypress Realworld App interface. At the top, there's a navigation bar with tabs for 'Tests', 'Runs', and 'Settings'. The 'Runs' tab is selected, showing a list of recent test runs. Each run entry includes a small icon, the run ID, a brief description, the duration, the browser used (Debian - 10.3), and the number of browsers tested (2). The runs are ordered by their last update time.

7. Screenshots and videos: View screenshots taken automatically on failure, or videos of your entire test suite.



8. CSS Selector generator:



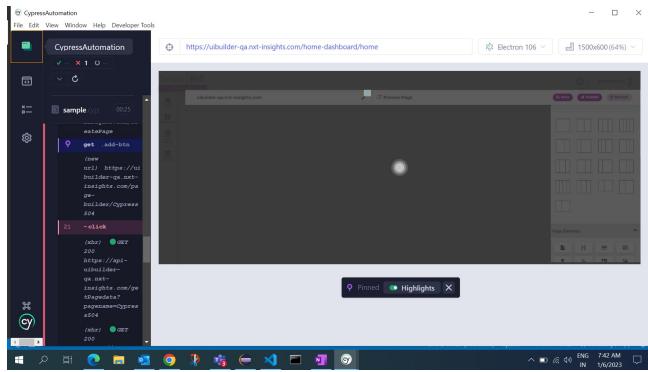
9. It supports Mocha framework.

Cons of choosing Cypress

- One cannot use Cypress to drive two browsers at the same time
- No support for multi-tabs

Errors Faced in Dev Environment

1. Cant able to interact with the plus icon as nav bar element is fixed above the plus icon



10	QA	AM-2719	SSV-Left side pane restructure and More color options for table formatting - Done	Harish
11	QA	AM-3116	UIBuilder-Material NxT-US 2729-Custom styles in particular column/row-For icon selected one column but changes happened in 2 columns - Done	Harish
12	QA	AM-3114	UIBuilder-MaterialNxt-AM2735-Toggle button issues - Need to clear doubts	Harish
13	QA	AM-3100	UIBuilder_QA_Table Element not displaying any data and throwing error - Done	Harish
14	QA	AM-3015	UIBuilder-ESG-Bulkupload-Append is working but Replace is not working - Need to test	Harish

<mailto:Nxttrail@123>

Playwright vs Cypress Comparison

Friday, January 6, 2023 10:10 AM

Playwright vs Cypress Comparison Table

Criteria	Playwright	Cypress
Installation & Configuration	There are no folder structures defined, and you can use any Test runner you like	Easy to install and configure and has a pre-defined folder structure. It's a complete package that includes its test runner.
Language	Supports multiple languages such as JavaScript, Java, Python, and .NET	Supports JavaScript
Test Runner Frameworks Supported	Mocha, Jest, Jasmine	Mocha
Operating Systems Supported	Windows, Linux, and macOS	Windows, Linux, and macOS 10.9 and above
Architecture	Headless browser with event-driven architecture	Directly carries out test cases inside the browser
Browsers Support	Chromium, Firefox, WebKit, Chrome, Edge	Chromium, Chrome, Firefox, Electron, Edge
iFrames Support	YES	Limited (need to set ChromeWebSecurity = false), and not all cases work
Community Support	It has less community support because it is a more recent application	Strong community support from international professionals
Windows/Tabs Support	YES	Limited, but some workarounds are available
Parallel Run	YES	Paid dashboards or utilizing workarounds and free plugins
Real Devices Support	It does not support real devices for Mobile Testing. It supports emulators.	Supports real device clouds and remote servers
Mobile Testing Support	Can emulate mobile dimensions	Can only set browser dimensions
API call support	YES	YES
	<ul style="list-style-type: none"> -Stable and reliable. -Has broader cross-browser support -Allows setting multiple user contexts -It can be used to test native applications on macOS and Windows -It does not generate any files -Supports multi-page and third-party implementations -Allows you to select a test runner 	<ul style="list-style-type: none"> -Documentation is not as comprehensive as Cypress' documentation.
Cypress	<ul style="list-style-type: none"> -Has better documentation -Stronger community support -Easier to understand for people new to testing -Only one framework you need to learn because it covers everything -It can be used to test web apps 	<ul style="list-style-type: none"> -It doesn't support multi-page and third-party implementations -Create numerous test directories and files -It does not have as good cross-browser support as Playwright -Need to write separate tests to simulate different user scenarios

UniqueId	Id	Course Name	Expertise	Academy
DO_015	2374	Kubernetes for Beginners	101	DEVOPS
DO_031	2615	Certified Kubernetes Application Developer (CKAD) Program	201	DEVOPS
DO_032	2616	Certified Kubernetes Administrator (CKA)	201	DEVOPS

		Program		
DO_046	2974	IBM Cloud: Deploying Microservices with Kubernetes	201	DEVOPS
DO_067	3389	Scalable Microservices with Kubernetes	101	DEVOPS
DO_096	4099	Kubernetes on AWS	301	DEVOPS
DI_1425	1923	Getting Started with Google Kubernetes Engine	201	DEVOPS
DO_027	2563	Kubernetes Container management 201	201	DEVOPS
DI_2121	3629	Kubernetes in Google Cloud platform	201	DEVOPS
DO_050	3054	Fundamentals of Kubernetes on Microsoft Azure	101	DEVOPS
DI_1914	2956	Introduction to Microservices, Docker, and Kubernetes	101	Digital
DI_2117	3623	Architecting with Google Kubernetes Engine: Foundations	201	DEVOPS
DI_2118	3624	Architecting with Google Kubernetes Engine: Workloads	201	DEVOPS
DI_2232	3942	GCP Kubernetes Basics	101	DEVOPS
DI_2233	3943	AWS Kubernetes Basics	101	DEVOPS
DI_2234	3944	Kubernetes Basics	101	DEVOPS
DI_2235	3946	Modernize Applications with Azure and Kubernetes (AKS)	101	DEVOPS
DO_103	4220	Hands on Course - Kubernetes Administrator	201	DEVOPS
DO_104	4225	Azure Kubernetes Service(AKS)	201	DEVOPS
DO_105	4226	Hands on Course – Kubernetes Application Developer	201	DEVOPS
DI_2119	3625	Architecting with Google Kubernetes Engine: Production	201	DEVOPS
DO_074	3705	Architecting with Google Kubernetes Engine Specialization 301	301	DEVOPS
DI_1665	2282	Learn Kubernetes from a DevOps guru	101	DEVOPS
DO_013	2364	Kubernetes 201	201	DEVOPS
ET_196	4610	Certified Kubernetes Security Specialist (CKS)	201	Emerging Technologies
Cisco_AC1 1	3272	Kubernetes for Beginners (Kubernetes + Docker + DevOps)	101	

Chart Requirements

Wednesday, January 18, 2023 11:17 AM

Chart Requirements - Spreadsheet

Chart Name	Requirement 1	Requirement 2	Comments
Bar Chart	After selecting the table user should not be allowed to Save without filling out all Mandatory fields.	X - Axis, Y - Axis & Select Metrics should be a Mandatory field	Referred SSV
Horizontal Bar Chart	After selecting the table user should not be allowed to Save without filling out all Mandatory fields.	X - Axis, Y - Axis & Select Metrics should be a Mandatory field	
Line Chart	After selecting the table user should not be allowed to Save without filling out all Mandatory fields.	X - Axis, Y - Axis & Select Metrics should be a Mandatory field	
Line Bar Chart	After selecting the table user should not be allowed to Save without filling out all Mandatory fields.	X - Axis, Bar Chart Y-Axis, Line Chart Y-Axis & Select Metrics should be a Mandatory field	
Spline Chart	After selecting the table user should not be allowed to Save without filling out all Mandatory fields.	X - Axis, Y - Axis & Select Metrics should be a Mandatory field	
Area Chart	After selecting the table user should not be allowed to Save without filling out all Mandatory fields.	X - Axis, Y - Axis & Select Metrics should be a Mandatory field	
Pie Chart	After selecting the table user should not be allowed to Save without filling out all Mandatory fields.	Select Column, Select Metrics & Group By should be a Mandatory field	
Donut Pie Chart	After selecting the table user should not be allowed to Save without filling out all Mandatory fields.	Select Column, Select Metrics & Group By should be a Mandatory field	
Gauge Chart	After selecting the table user should not be allowed to Save without filling out all Mandatory fields.	Select Column, Select Metrics & Group By should be a Mandatory field	
Sankey Axis Chart	After selecting the table user should not be allowed to Save without filling out all Mandatory fields.	Source,Target,Metric Column & Select Metrics should be a Mandatory field	
Tree Map Chart	After selecting the table user should not be allowed to Save without filling out all Mandatory fields.	Select Column, Select Metrics & Group By should be a Mandatory field	
Heat Map Chart	After selecting the table user should not be allowed to Save without filling out all Mandatory fields.	X - Axis, Y - Axis, Select Column & Select Metrics should be a Mandatory field	
Big Number Chart	After selecting the table user should not be allowed to Save without filling out all Mandatory fields.	Select Column & Select Metrics should be a Mandatory field	
Scatter Graph Chart	After selecting the table user should not be allowed to Save without filling out all Mandatory fields.	X - Axis, Y - Axis & Select Metrics should be a Mandatory field	
Scatter Plot with Regression Line Chart	After selecting the table user should not be allowed to Save without filling out all Mandatory fields.	X - Axis, Y - Axis & Select Metrics should be a Mandatory field	
Histogram Chart	After selecting the table user should not be allowed to Save without filling out all Mandatory fields.	Select Column should be a Mandatory field	
Time Series Chart	After selecting the table user should not be allowed to Save without filling out all Mandatory fields.	Time Column, Time Grain, Line Chart Axis, Line Metric, Bar Chart Axis, Bar Metric should be a Mandatory field	
Waterfall Bar Chart	After selecting the table user should not be allowed to Save without filling out all Mandatory fields.	X - Axis, Y - Axis & Select Metrics should be a Mandatory field	
World Map Chart	After selecting the table user should not be allowed to Save without filling out all Mandatory fields.	Select Latitude & Select Longitude should be a Mandatory field	

REST Assured

Thursday, February 2, 2023 10:36 AM

What is API n where it is used.

Interface between client[front end] and Server [backend-DB]

Ex: frontend written in Angular and backend in Java both diff language cant interact & Hotels.com using marriott hotels for checking rooms available
Here API acts as interface to communicate in JSON/XML Format

End point: Address where API is hosted on the Server.

HTTP methods which are commonly used to communicate with Rest API's are

GET, POST, PUT, and DELETE - CRUD

GET- The GET method is used to extract information from the given server using a given URI. While using GET request, it should only extract data and should have no other effect on the data. No Payload/Body required-**RETRIEVE**

How to send input data in GET?

Ans: Using Query Parameters

OPERATION	SQL	HTTP
Create	INSERT	PUT/POST
Read	SELECT	GET
Update	UPDATE	PUT/PATCH
Delete	DELETE	DELETE

POST- A POST request is used to send data to the server, for example, customer information, file upload, etc. using HTML forms - **CREATE**

How to send input data in POST?

Ans: Using Form Parameters /Body Payload

PUT- Replaces all current representations of the target resource with the uploaded content - **UPDATE**

DELETE- Removes all current representations of the target resource given by a URI - **DELETE**

Resources:

Resources represent API/Collection which can be accessed from the Server

Google.com/maps

google.com/search

google.com/images

Path Parameters:

Path parameters are variable parts of a URL path. They are typically used to point to a specific resource within a collection, such as a user identified by ID

<https://www.google.com/images/1123343>

<https://www.google.com/docs/1123343>

<https://amazon.com/orders/112>

Query Parameters:

Query Parameter is used to sort/filter the resources.

Query Parameters are identified with?"

https://amazon.com/orders?sort_by=2/20/2020

<https://www.google.com/search?q=newyork&oq=newyork&aqs=chrome..69i57j0l7.2501j0l7&sourceid=chrome&ie=UTF-8>

Headers/Cookies:

Headers represent the meta-data associated with the API request and response. In layman terms, we were sending Additional details to API to process our request.

Example : Authorization details

End Point Request URL can be constructed as below

Base URL/resource/(Query/Path)Parameters

MLOPS

Sunday, May 14, 2023 10:27 AM

Life Cycle of ML project

1. Requirement gathering
2. Explorarty data analysis
3. Feature engineering
4. Feature selection
5. Model Creation
6. Model Hyperparameter tuning
7. Model Deployment
8. Retraining model
Ex: If model needs some change,
when size or type of smart phone changes

Above points comes under pipeline [CI/CD]

1. Learn python using scripts. [YouTube]
 - a. Learn basic ML lib/frameworks like kera, tensorflow in jupyter notebook
 - b. [Python Essentials for MLOps | Coursera](#)
2. Learn Linux commands. [YouTube]
 - a. Learn about CPU GPU Memory Consumption
3. Learn docker in coursera
[Introduction to Containers w/ Docker, Kubernetes & OpenShift - Containers and Containerization](#)
4. Learn Kubernetes in Udemy
From <<https://www.udemy.com/course/learn-kubernetes/>>
5. Learn YAML Syntax
6. Learn cloud need certificate.
7. Learn devOps workflow. [CI/CD Github actions, Jenkins]
8. REST API - fastapi

Sunday, June 18, 2023 11:11 PM

GIT Commands

Monday, May 22, 2023 11:57 AM

Git

Ls list all files

Mkdir to create new file

Touch name.txt to create a new file

Cd to change directory

Git init to initialize git the specific repo

Ls -a list all files + hidden files

Git status to see the changes/which files are committed n untracked

Git add . To add the specific file or every file in directory

Cat file name to show what is inside the file

Git log to see the history

Git restore

Rm -rf file name to remove the specified file

Git reset commit hash id to get back into the stage we needed, it also removes the other commits

Git remote add origin git url to connect git with github local to remote

Git remote - v to get all urls linked

Git push origin master/branch to move the code to github repo

Git clone url to get the copy of code [Fork it in github and copy ur url n clone it if u don't have permission

Git remote add upstream url to get the source where we actually fetched it

Git branch name to create a branch

Git checkout name to point changes should be pushed to branch not master/main

Git pull upstream main to retrieve the updated source code

Git clone

1. Git clone <https://github.com/Blitzer0007/Amazon.git>

Git add .

2. Git init

Git commit

3. Git remote -v to check which repo we r connected to push or

Git push

pull

4. Git remote add origin

<https://github.com/Blitzer0007/Amazon.git>

5. Now check the repos using step 3
6. Create new branch using git branch branch name
7. Then switch the branch using git checkout branch name
8. Then push it using git push -u origin branch name
9. In gui create a pull request

1. To get the updated code from repo
 - a. First ensure we r in our branch
 - b. Then git pull origin master
 - c. And push in branch using git push
 - d. We can see updated code in local

Linux Commands

Monday, May 29, 2023 3:17 PM

Man[Manual] ls - list out all commands in linux
Pwd [Print working directory] - displays the current directory
Ctrl +c to exit from the process
Ls [list] - it prints the list
Ls -l or ll - to display the contents in detailed manner
Ls -lh - human readable for size
Ls -a - to display all files including hidden folders/files
Ls -lrt - to view the contents with read/write
Lsof - to view the list of opened files by all users
Lsof -u user/root - to view the list of opened files by specific user
Cd - change directory
Cd .. - to go back in the directory
Touch filename - to create a new file
Cat filename - to view the contents of the file
Cat > filename - to update the contents in the specified file [press ctrl + d] to save
Mkdir name - to create a folder
Rmdir name - to remove the folder
Cp filename/source folder/destination - to copy the file to folder
Cp -r foldername/source folder/destination - to copy the folder to folder
Mv filename/source folder/destination - to move the file to folder or folder to folder
Mv filename renamedfile - to rename the file
Rm filename - to delete the file
Rm -r foldername - to delete the folder
Cat filename | grep word - to find a word in the file
History - to view the commands used
History | grep command - to find the specific command used
ssh-keygen -t rsa - to generate a public or private key using rsa algorithm
Ip address - to view the list of ip address associated with networks
Ip links - to view the list of links associated with networks
Netstat -a - It gives an overview of network activities and displays which ports are open or have established connections.

Whoami - to find the user
Sudo bash - to authenticate root user
Su user - to switch the user
Sudo useradd username- to add the user with username
Sudo passwd username - to set the password for the specified username
Sudo userdel username - to delete the user
Sudo groupadd groupname - to add group with groupname
Sudo groupdel groupname - to delete group with groupname
Sort filename - to sort the contents in alphabetical order.
Chown user file/folder - to change the permissions
Chmod 777 filename - to give permissions to all root/user/other user to read, write, & execute
Id - to view the list of user/root ids
Id -u user/root - to view the list of specific user id
tar -cvf myarchive.tar file1.txt file2.txt - to zip the files
tar -xvf myarchive.tar - to unzip the tar file
Sed 's/text/replacedtext/' filename - to find and replace the content which we mention
Uniq filename - to filter out the repeated lines.
Eval args - to execute the linux command stored in a variable to execute
Dd if = directory of = directory - to copy the physical harddisk data as input file if and output file of as options and directory as value

Docker

Wednesday, June 7, 2023 9:24 AM

Containerization

App1 App2 App3
Lib lib lib
Container Engine
Host OS

Docker command	Purpose	Example
build	Creates container images from a Dockerfile	docker build -t my-app:v1
images	Lists all images, repositories, tags, and sizes	docker images
run	Creates a container from an image	docker run -p 8080:80 nginx
push	Stores images in a configured registry	docker push my-app:v1
pull	Retrieves images from a configured registry	docker pull nginx

Docker Objects

Dockerfiles	Networks - helps to isolate communication between containers
Images	Storage volumes
Container	Plugins

Docker container is an runnable instance of an image

FROM - defines base image [node js, python] docker file must start using FROM
 ENV - define environment variables mostly preferred in compose file
 RUN - executes arbitrary command/Linux commands mentioned in docker file
 CMD - defines default command for container execution [node app.js]

Image Naming - hostname/repository:tag
 docker.io/reponame:versions
 docker hub

Docker Architecture

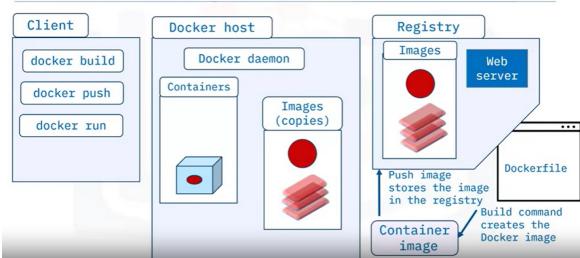
1. Docker CLI or REST API - docker client sends instruction or cmd to docker host server.
2. Docker host server known as host includes docker daemon - dockerd
3. Daemon listens to the api request or cmd and process the output
4. Docker stores the images in registry

Docker host

The Docker host also includes and manages:



Docker architecture



Ctrl + c - to exit from the process

Docker run -d imageName - To start new container with command

Docker stop container id

Docker start container id

Docker rm container id

Docker ps -a - list all running n exited containers

Docker run -dp pn:container p no imageName

Docker run -dp pn:container pno --name helloName imageName

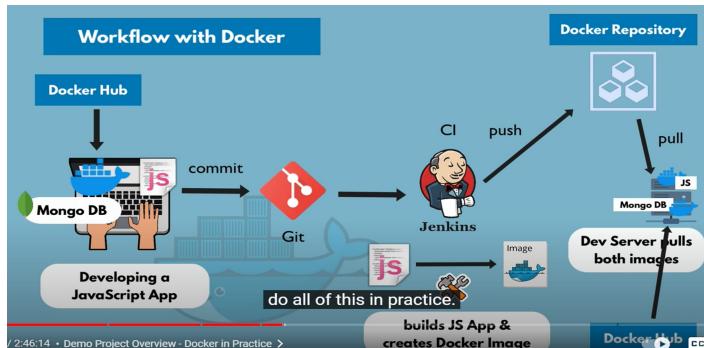
Docker logs container id/container name

docker exec -it 60cef3dc5f31 /bin/bash or bin/sh for debugging

Alpine a popular choice for containers where size and resource usage are important considerations.

[FROM - Base like python alpine]

Kernel is a core component of an operating system that acts as a bridge between software applications and the computer hardware. It provides low-level services to manage and allocate system resources such as CPU, memory, and external devices



Creating a docker network to connect two containers and establish connection

docker network ls - list out all the networks created

Docker network create mongo-network

```
docker run -dp 27017:27017 -e MONGO_INITDB_ROOT_USERNAME=admin -e MONGO_INITDB_ROOT_PASSWORD=password --name mongodb --net mongo-network mongo
```

```
docker run -dp 8081:8081 -e ME_CONFIG_MONGODB_ADMINUSERNAME=admin -e ME_CONFIG_MONGODB_ADMINPASSWORD=password --name mongo-express --net mongo-network -e ME_CONFIG_MONGODB_SERVER=mongodb mongo-express
```

[Nana Janashia / techworld-js-docker-demo-app · GitLab](#)

Docker compose to reduce the time to run command manually and it is useful when we need run 10+ containers

Docker-compose -f filename up	Docker-compose -f filename down
It creates own network by default	It removes network by default

Image Environment Blueprint	DOCKERFILE
install node	FROM node
set MONGO_DB_USERNAME=admin	ENV MONGO_DB_USERNAME=admin \
set MONGO_DB_PWD=password	MONGO_DB_PWD=password
create /home/app folder	RUN mkdir -p /home/app
copy current folder files to /home/app	COPY . /home/app
start the app with: "node server.js"	CMD ["node", "server.js"]

YAML

Sunday, June 18, 2023 11:12 PM



Kubernetes

Monday, June 26, 2023 11:05 AM

Docker Orchestration

The platform needs to orchestrate the **connectivity** between the **containers[DB, Frontend]** and automatically **scale** up or down based on the load. This whole process of automatically deploying and **managing containers** is known as Container Orchestration

Node

Node is a machine physical or virtual in which Kubernetes is installed

Nodes(Minions)



Cluster - It is a group of nodes

Cluster



Master node is the one who orchestrates each and every worker nodes in the cluster like if one node is down it will manage with other worker node and load balancing.

Kubectl run container - It runs the container by creating a pod

Master vs Worker Nodes



Prep

Friday, July 14, 2023 1:49 PM

Java / Python - Language [Need to focus on basics]

SQL - Query Language [Need to learn basics]

Selenium, Playwright - Automation Tools [Selenium revision needed]

Collections generics thread

Manual questions

Generics To mention datatype explicitly

TestNG, Cucumber [BDD] - Libraries [TestNG revision needed, Cucumber] - Java
Robot, Behave

Rest Assured [Java] - API testing [Automation] [Rest Assured]

Karate Framework - API testing

Postman - API testing [Manual]

Collection - Interface

Collections - Class

Jmeter / Load Runner - Load tester tool [Need to learn]

DB Testing - Backend testing [Banking Domain] [Need to learn, choose correct course]

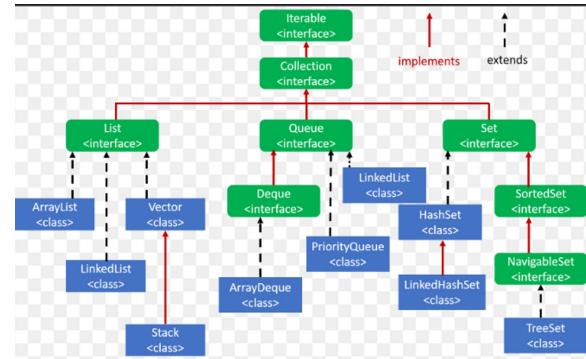
CI\CD

Jenkins - CI tool [Need to learn][From Github implementation]

GIT - Version control system [Need to implement in project]

Docker - Containerization tool [Need to implement in project]

Cypress only JavaScript supported



Cloud - AWS/Azure/GCP

Kubernetes, DevOps flow

Python - Language [Need to explore n learn]

Java

Primitive built in datatypes - int, byte, char

Non primitive user created datatypes - string, list, set, arrays

Private access modifier is specified only to be used in that class

Static variable stores the value in class level i++

```
For(i=0;true;i++){  
}
```

LinkedList - Double linked list [Fast as it is based on node, when adding elements in between it will point with previous P and Next N node]

ArrayList - Dynamic array [slow as when adding elements in between big O time consuming]

Black box testing is a software testing method that focuses on the external behavior of a system without knowing its internal workings or code structure. The tester doesn't have access to the internal source code. Instead, the tester validates the functionality of the software based on the provided specifications or requirements.

White box testing is a software testing technique that involves testing the internal structure and workings of a software application. The tester has access to the source code and uses this knowledge to design test cases that can verify the correctness of the software at the code level.

AWS

Wednesday, August 2, 2023 12:48 PM

1. First create **VPC** Virtual Private Cloud to launch EC2 instance
Go to actions create default VPC
2. Subnets will be created automatically depending on VPC.
3. Create EC2 Instance, Choose free tier which has java in the instance AMI
4. Choose an instance type which has 4 GB and 2 CPU [Minimal Amount]
5. Create Rule for security with source IP Anywhere
6. Create a new key pair and download the pem file
7. Open cmd and change path to downloaded pem file
8. Change the access of pem file to read only using chmod 400
9. Ssh -l pemfilename .pem ec2user@private ip address
10. Update instance using sudo yum update
11. To remove old java sudo yum remove java -y
12. To install desired version we need sudo yum install java version
13. Ensure docker, docker-compose and git is there to perform all actions to run tests
14. After creating instance, create the AMI
15. Create docker compose file in terminal [Copy from official GitHub]
16. From compose file we can use selenium hub with various browsers
17. To see the selenium grid console, enter the **public** ip address created in instance with port number **4444** which was the **default** port by Grid
18. We can scale up the browsers by **docker-compose scale**
browserName = 5



```
# To execute this docker-compose yml file use `docker-compose -f docker-compose-v3.yml up`  
# Add the '-d' flag at the end for detached execution  
# To stop the execution, hit Ctrl+C, and then `docker-compose -f docker-compose-v3.yml down`  
version: "3"  
services:  
  chrome:  
    image: selenium/node-chrome:4.11.0-20230801  
    shm_size: 2gb  
    depends_on:  
      - selenium-hub  
    environment:  
      - SE_EVENT_BUS_HOST=selenium-hub  
      - SE_EVENT_BUS_PUBLISH_PORT=4442  
      - SE_EVENT_BUS_SUBSCRIBE_PORT=4443  
  
  edge:  
    image: selenium/node-edge:4.11.0-20230801  
    shm_size: 2gb  
    depends_on:  
      - selenium-hub  
    environment:  
      - SE_EVENT_BUS_HOST=selenium-hub  
      - SE_EVENT_BUS_PUBLISH_PORT=4442  
      - SE_EVENT_BUS_SUBSCRIBE_PORT=4443  
  
  firefox:  
    image: selenium/node-firefox:4.11.0-20230801  
    shm_size: 2gb  
    depends_on:  
      - selenium-hub  
    environment:  
      - SE_EVENT_BUS_HOST=selenium-hub  
      - SE_EVENT_BUS_PUBLISH_PORT=4442  
      - SE_EVENT_BUS_SUBSCRIBE_PORT=4443  
  
  selenium-hub:  
    image: selenium/hub:4.11.0-20230801  
    container_name: selenium-hub  
    ports:  
      - "4442:4442"  
      - "4443:4443"  
      - "4444:4444"
```

JMeter

Wednesday, September 6, 2023 12:25 PM

Thread group - users

Ramp up period -

If 10 threads are used, and the ramp-up period is 100 seconds, then JMeter will take 100 seconds to get all 10 threads up and running. Each thread will start 10 (100/10) seconds after the previous thread was begun.

Loop count - to define the number of times it should run

Listeners - Reports

View table Report

Latency - Time get to first byte

CI

Friday, September 22, 2023 11:53 AM

Job Setup

The screenshot shows the 'Configuration' tab of a CI job setup. Under the 'General' section, the 'Discard old builds' checkbox is checked. The 'Strategy' dropdown is set to 'Log Rotation'. The 'Days to keep builds' field contains '10'. The 'Max # of builds to keep' field also contains '10'. There is an 'Advanced' button and a 'GitHub project' checkbox, which is unchecked. At the bottom are 'Save' and 'Apply' buttons.

The screenshot shows the 'Source code' configuration tab. Under the 'General' section, the 'Source Code Management' checkbox is checked. The 'Git' radio button is selected. Under 'Repositories', the 'Repository URL' is set to 'https://github.com/Blitzer0007/CI.git' and the 'Credentials' are 'Blitzer0007/*****'. There is an '+ Add' button and an 'Advanced' dropdown. At the bottom are 'Save' and 'Apply' buttons.

-----Date Set 1 Validation Starts here -----

--Environmental HMI Tag Checking for Alerts

-- 0 records for Dataset 1

```
select row_number() over() + (select max(r_no) from public_old.enb_event_details) as r_no,
'A'|| E.severity || cast(row_number() over() + (select max(r_no) from public_old.enb_event_details) as
varchar(100)) as id,
'Brownsville' as station,
'Unit 1' as unit,
start_datetime as dt,
E.severity as severity,

'Environment HMI' as type,
'Alarm' as tag_type,
split_part(tagname, '.', 2) as alaram ,
E.description as descr,
E.hmitagname as hmi_tag_name,
1 flow_number,
'Real' as status,
EXTRACT(EPOCH FROM (end_datetime-start_datetime))/60 as duration
from
(
select tagname, start_datetime, end_datetime from
(
select tagname,curr_date,next_date,curr_value,next_value,
case when curr_value = 0 then start_datetime else null end as start_datetime,
case when curr_value = 0 then lead(end_datetime) over(order by curr_date,next_date) else null end as
end_datetime from
(
select *,
case when curr_value = 0 then next_date else null end as start_datetime,
case when curr_value = 1 then next_date else null end as end_datetime
from
(
select * from
(
select
tagname,
datetime as curr_date,
lead(datetime) over(partition by tagname order by datetime)as next_date,
value as curr_value,
lead(value) over(partition by tagname order by datetime,tagname)as next_value
from public_old.uat_check_data ud
where tagname in ('CS_BROW_CP_Historize_
1T.ExhCOCatalystDownTempFail_CA','CS_BROW_CP_Historize_
```

```

1T.ExhCOCatalystDownTempH','CS_BROW_CP_Historize_
1T.ExhCOCatalystDownTempHH','CS_BROW_CP_Historize_
1T.ExhCOCatalystDPFail','CS_BROW_CP_Historize_
1T.ExhCOCatalystDPFail_CA','CS_BROW_CP_Historize_1T.ExhCOCatalystDPH','CS_BROW_CP_Historize_
1T.ExhCOCatalystDPHH','CS_BROW_CP_Historize_
1T.ExhCOCatalystUpTempFail','CS_BROW_CP_Historize_
1T.ExhCOCatalystUpTempFail_CA','CS_BROW_CP_Historize_
1T.ExhCOCatalystUpTempH','CS_BROW_CP_Historize_
1T.ExhCOCatalystUpTempHH','CS_BROW_CP_SolNotActOnLoad_CR_
1T.HiAlarm','CS_BROW_CP_LongestStartup_CR_1T.HiAlarm','CS_BROW_CP_LongestSD_CR_
1T.HiAlarm','CS_BROW_CP_UpTempOps_CR_1T.HiAlarm','CS_BROW_CP_UpTempOps_CR_
1T.HiHiAlarm','CS_BROW_CP_DownTempOps_CR_1T.HiAlarm','CS_BROW_CP_DownTempOps_CR_
1T.HiHiAlarm','CS_BROW_CP_DPOps_CR_1T.HiAlarm','CS_BROW_CP_DPOps_CR_1T.HiHiAlarm')
)A
where curr_value <> next_value
)B
)C
)C
where start_datetime is not null and end_datetime is not null
)D left join public_old.hmi_tags_data E on D.tagname = E.hmitagname

```

---Data Threshold Validity Checking

-- 4 Records for Dataset 1

```

select row_number() over() + (select max(r_no) from public_old.enb_event_details) as r_no,
'A'|| severity || cast(row_number() over() + (select max(r_no) from public_old.enb_event_details) as
varchar(100)) as id,
'Brownsville' as station,
'Unit 1' as unit,
severity,
datetime as dt      ,
'Data Validity' as type,
tag_type,
alarm ,
descr,
hmi_tag_name,
1 flow_number,
'Real' as status,
value,
min_value,
max_value
from
(
select distinct
E.severity as severity,
tag_type as tag_type,
split_part(tagname, '.', 2) as alarm ,
E.description as descr,
E.hmitagname as hmi_tag_name,
value,
cast(case when E.data_validity_min = "" then null else E.data_validity_min end as float) as min_value,
cast(case when E.data_validity_max = "" then null else E.data_validity_max end as float) as max_value,

```

```
--max(datetime) as datetime
datetime
from public_old.uat_check_data A left outer join public_old.hmi_tags_data E on A.tagname =
E.hmitagname
where value is not null
--and (A.value > cast(case when E.data_validity_max = "" then null else E.data_validity_max end as float)
or A.value < 0)
and (A.value not between cast(case when E.data_validity_min = "" then null else E.data_validity_min end
as float) and cast(case when E.data_validity_max = "" then null else E.data_validity_max end as float))
--group by 1,2,3,4,5,6,7,8
)A
```

---Data Threshold Validity Checking on Load

```
with on_load_time as
(
select distinct tagname, start_1 as start_dt, case when end_1 is null then next_date else end_1 end as
end_dt from
(
select *, case when start_datetime is null then lag(start_datetime) over() else start_datetime end as
start_1,
case when end_datetime is null then lead(end_datetime) over() else end_datetime end as end_1
from
(
select *,
case when curr_value = 0 then next_date else null end as start_datetime,
case when curr_value = 1 then next_date else null end as end_datetime
from
(
select * from
(
select
tagname,
datetime as curr_date,
lead(datetime) over(partition by tagname order by datetime) as next_date,
case when value is null then 0 else value end as curr_value,
lead(case when value is null then 0 else value end) over(partition by tagname order by
datetime, tagname) as next_value
from public_old.uat_check_data
where tagname in ('CS_BROW_1T.OnLoad')
)A
where curr_value <> next_value
)B
)C
)D
)
select * from on_load_time
```

--7 records

```
select row_number() over() + (select max(r_no) from public_old.enb_event_details) as r_no,
'A' || severity || cast(row_number() over() + (select max(r_no) from public_old.enb_event_details) as
varchar(100)) as id,
```

```
'Brownsville' as station,
'Unit 1' as unit,
severity,
datetime as dt      ,
'Data Validity' as type,
tag_type,
split_part(tagname, '.', 2) as alaram ,
description as descr,
hmitagname as hmi_tag_name,
1 flow_number,
'Real' as status,
value,
cast(case when E.on_load_min = " then null else E.on_load_min end as float) as min_value,
cast(case when E.on_load_max = " then null else E.on_load_max end as float) as max_value
from (select distinct * FROM public_old.uat_check_data
where datetime between cast('2023-07-05 20:03:00.000' as timestamp) and cast('2023-07-07
22:34:00.000' as timestamp)) A
left outer join public_old.hmi_tags_data E on A.tagname = E.hmitagname and E.unitnr = 'T1'
where (A.value not between cast(case when E.on_load_min = " then null else E.on_load_min end as
float) and cast(case when E.on_load_max = " then null else E.on_load_max end as float))
--group by 1,2,3,4
order by datetime
```