**Phase 5 :**

**Day 1 : 06/26/2023**

Junit Testing

Testing and Deployment using devops life cycle

Test NG Open Source framework for testing java programs.( Unit testing and Integration testing)

Selenium Testing with Test NG Framework (Automation Testing )

Introduction to AWS (EC2, S3 and EBS) etc

Git

Maven or Gradle

Docker Devops

CI and CD tool using Jenkin

Overview of Kubernetes

Phase end project

Testing : Testing is use to find the defects or error or bugs in the application.

Running the program develop in any language in directly we are testing that program.

class Operation {

public int add(int x, int y) {

int sum = x+y;

return sum;

}

}

We are testing java programs without main method also known as testing the programs.

Testing mainly divide into 2 types.

1. Black box testing :

Input ------------------🡪Process ------------------🡪Output

1. White box testing

Input ------------------🡪Process ------------------🡪Output

Unit Testing : Unit testing is a type of white box testing which help to test function functionality working or not properly. Unit is smallest code which work independently. Like in a method or function etc.

To do this type of unit testing

Java use 2 framework

jUnit : junit testing open source framework which help to do unit testing

Test NG (next generation) : Test NG is base upon Junit testing. Light weighted which help to do

Unit testing as well as integration testing.

JavaScript -🡪 Jasmine is an open source framework which help to do unit testing for JavaScript programs.

React JS 🡪 JEST is an third party framework provided by Facebook which help to do the unit testing for React JS programs.

We will do unit testing using Junit

Junit 3.x without annotation

Junit 4.x with annotation

jUnit 5.x with more than third party library and support java8 features with annotation

test case : test case is a type of class which contains more than one test function which help to test function functionality.

test suite : test suite is use to run more than one test case classes.

Junit hook :

4 hook

@Before : this function get called before each @Test function

@After : this function get called after each @Test function

@BeforeClass :this function get called only once before one or all @Test function

@AfterClass : this function get called only once after one or all @Test function

TestSuite : Test suite is use to execute more than one test case classes.

TestNG : Test NG another testing framework inspired by junit testing framework. It is an open source testing framework similar to junit test framework. In Test NG (next generation).

Test NG is combination of junit and nunit

It is designed better than Junit testing especially when we do the integration testing.

Features of Test NG framework

1. It generate report in html format (by default).
2. It provided few more annotation which were missing in jUnit.
3. It allow use to do group as well as priority base testing.
4. It support parallel testing features. jUnit do sequentially testing.

Unit testing using Test NG

Phase 3 project discussion

**Phase 5 :**

**Day 2 : 06/27/2023**

Unit : we create separate test suite which help to run more than one test case.

In Unit is it is a type of class.

But in TestNG that class replace by xml file. This file hold the details about all TestNG class.

In Test Ng all test function execute by default in alphabetical order.

In Test NG inside @Test annotation we can use priority property to run the test base upon the priority.

TestNG hook.

@BeforeSuite : it will call only once when we run through suite file. It will call only once

Inside suite we can configure more than one TestNG class. each class contains

More than one test function

Before all test function part of same TestNG class or different TestNG class

@BeforeTest hook get called only once.

@BeforeClass : it will call each class level only once.

@BeforeMethod : it will call each @Test function. This will call again and again.

**Day 3 : 06/28/2023**

Selenium : Selenium is one of the most widely used open source Web UI(user interface) automation tool.

Selenium is platform independent, language independent and browser independent Web UI tool.

Selenium support by Java, C#, Python, JavaScript etc.

Selenium can be use to automate functional test (actual business code) non function test (it will support to do the task).

It can be integrate with DevOps tool like Git, Jenkin, Docker and Kubernetes.

We can integrate Selenium with jUnit or TestNG framework.

We can do Selenium code using Java as well as Selenium provided OWN IDE which we can configure with browser or we can download to do the Testing for UI Component doesn’t matter that application develop using any language.e

We need to download the browser specific driver.

To connect mysql or oracle database we downloaded jar file manually or using maven tool.

In Selenium we need to download the browser driver in the form of .exe or other format base upon OS support.

In Web Application all contents are known as DOM. (Document Object Model).

If we want to load the tag or dom elements contents then we need to refer those tags using

Tagnaname, classname, idname etc.

First we need to refer to dom tags base up selector and Selenium provided WebElement API which help to read, write and update DOM content using Java.