

Internship Report

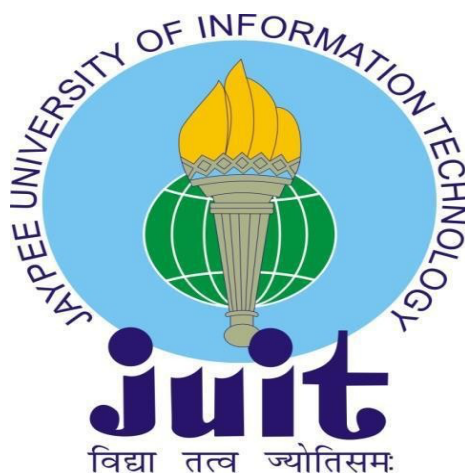
Internship report submitted in partial fulfillment of the
requirement for the degree of Bachelor of Technology

In

**Computer Science and Engineering/Information
Technology**

By

Pranjal Gangwar (171202)



Department of Computer Science & Engineering

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Waknaghat, Solan-173234, Himachal Pradesh**
An Internship Report with regard to Amazon Internship.

Acknowledgements

This is a matter of pleasure for me to acknowledge my deep sense of gratitude to Jaypee University and my college, Jaypee university of information technology for giving me an opportunity to explore my abilities via this internship program. I would like to express my sincere gratitude to our TnP officer, Mr. Pankaj Kumar and our faculty Coordinator, Dr. Nafis U Khan for this opportunity. I also wish to express my gratitude to my internship supervisor, for their valuable guidance and advice in completing this project.

I would like to record my sincere appreciation and gratitude towards all the officials and employees of Amazon, without whose kind assistance, my internship program would not have succeeded. The facts and other vital information provided by them have contributed towards making this report as comprehensive as possible. I am indeed thankful to them.

Last but not the least, I would like to express my sincere thanks to all my familymembers, friends and well-wishers for their immense support and best wishes throughout the internship duration and the preparation of this report.

I believe that this report will be a valuable asset not only for academic institution, butwill also be useful for all those who are interested to learn about internship experiences in auditing and consulting firm.

Candidate's Declaration

I hereby declare that the work presented in this report entitled “**Internship Report**” in partial fulfillment of the requirements for the award of the degree of **Bachelor of Technology** in **Computer Science and Engineering/Information Technology** submitted in the department of Computer Science & Engineering and Information Technology, Jaypee University of Information Technology Waknaghat is an authentic record of my own work carried out over a period from Feb 2021 to May 2021 under the supervision of Mr. **Saurabh Arora** (SDM at Amazon).

The matter embodied in the report has not been submitted for the award of any other degree or diploma.



Pranjal Gangwar (171202)

This is to certify that the above statement made by the candidate is true to the best of my knowledge.

Mr. Saurabh Arora
SDM at Amazon
Dated: 15/05/21

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Chapter I

Organization

Profile

1.1 Background:

After the end of 7th semester, various company visited to our college for the placement of the student, one such company was Amazon, due to my good fortune, I was selected in Amazon, after selected as SDE-Intern, I was offered an internship program by the Amazon before the full-time role and completing internship is necessary for the full-time role in the Amazon.

Amazon is the top IT company in the India, and major IT company in US. Amazon employees around 3 lakh employee and recruit around 20 thousand fresh people every year from India. Amazon also hires from different country across the globe.

Amazon offers various role in the company like develop, Designer, Tester and Manager in the company, but, before becoming the associate every person should complete the intern period and after the intern period there is one year of probation period in the company for the associate to join the company.

The internship period varies and depends on the roles, which the intern gets, like someone who got developer profile, for them internship period will be of around 4-5 months and for the quality insurance, it might vary from 5-6 month.

The domain allocation is random in the Amazon for the interns, but sometime it depends on the assimilation test also, the person who got higher marks in assimilation test, will have higher chances to get better profile or domain and it also depends on the first come first serve basis.

1.2 Mission, vision, values and objectives

Mission – Amazon mission is to train every fresh person who got selected in to the Amazon. Amazon provide internship to every person who got selected in the Amazon.

Every year Amazon train college fresh out student in bulk number before giving them the associate role. This recruit happens from all college over the india.

Amazon spends much time,effort and money in training the intern before giving them the actual work and before them to work in the real environment.

Vision - The Amazon vision is to trainer every fresh out student recruited form the college no matter from which college the persons come.

Values

The values of the organization are as follows:

- *Valuing People*

We believe that our success depends first and foremost on people. By respecting people in everything we do, we will develop and maintain high quality, mutuallybeneficial relationships with our clients, professional colleagues, referral sources,vendors, community members and each other.

- *Building Client Relationships*

We seek to earn long-term client loyalty by developing a deep understanding of each client's business and personal goals, by demonstrating unwavering reliability and integrity in our work and by acting as an independent and objective advisor toour clients.

- *Upholding Quality and Integrity*

We will maintain an environment where a commitment to quality, honesty, respect, fairness and professional ethics governs the actions and decisions ofeveryone within our firm.

Keys to Success:

- Complete the work with full honesty.
- Complete the work on time.
- Complete the assessment.
- Complete the project within schedule time.
- Try to learn as much as possible from the SME, Trainer, mentor.
- Open to learn anything taught.

Objectives:

The objectives of Amazon are:

- The overall objective is to focus the activities towards its specialized services and to become a leader in this niche in the country.
- Growth - To expand the business at a rate that is both challenging and manageable, serving the market with innovation and adaptability.

1.3. Ice breaker

Week 1:

- Corporate induction.
- Talent Manager connect.
- Amazon Agenda session on core values.
- Leaders Talk (Academy) and many more.

Week 2:

- Behavior Skills.
- Agile Workshop.
- Devops Workshop.
- Behavior session.

IceBreaker

Week 1

- Corporate Induction
- Talent Manager Connect
- Cognizant Agenda Session on Core Values
- Leader Talks (Academy) and many more...

Week 2

- Behavioral Skills
- Agile Workshop
- DevOps Workshop
- Behavioral Session

Chapter II

Internship program sequence

2.1 Stage 1 – Core Programming fundamentals

I was inducted as a team member in my cohort then, this core programming fundamentals started, this core programming fundamentals consist of the certain weeks in which we have to learn various technology and do various hands-on and assessment during this core programming sequence.

Week 1:

- Web designing with HTML and CSS.
- Javascript.
- Behavioral Skills.

In this week we all have to do is to complete udemy courses provided by the Amazon during the internship, complete the hands-ons, assessment(inmportant), and to complete the integrated capability test also.

In the is week 1 we learned the designing part from scratch with the help of the HTML5 and CSS and also Javascript.

After we completed the online udemy courses, we did the hands-ons and completing the hands- on is mandatory for every interns and then, after completing the hands-ons we use to give assessment, a small test whose marks were taken into account, for the calculation of the in the final overall performance.

The most important part of this week was covering all the basis aspects of the designing and learning html and css and javascript from scratch because learning html and css is very important in designing.

It also covered integrating of html and css with the javascript to form proper webpage.

Below is the sample HTML and CSS, and Javascript Code.

```

CSSpractice.html x style.css
1 <!DOCTYPE: html>
2 <html lang="en-US">
3   <head>
4     <link rel="stylesheet" href="css/style.css" />
5     <title>HTML Page with CSS</title>
6   </head>
7   <body>
8     <header>
9       Fake Industry Expo Announcement
10    </header>
11    <article>
12      Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do
13      velit esse cillum dolore eu fugiat nulla paria csstur. Excepte
14    </article>
15    <footer>
16      &copy; Copyright Imaginary Organization 2016
17    </footer>
18  </body>
19 </html>
20
21 body {
22   font-family: 'Segoe UI', Tahoma, Geneva, Verdana, sans-serif;
23 }
24
25 article {
26   color: #5C373C;
27   margin: 10px;
28 }
29
30 footer {
31   font-size: x-small;
32   font-style: italic;
33   background-color: #C14860;
34   padding: 10px;
35 }
36
37 header {
38   font-size: x-large;
39   font-weight: bold;
40   text-align: center;
41   background: -moz-linear-gradient(#051118, #5C373C);
42   color: #CAA893;
43   border: thin #CAA893 inset;
44   margin: 20px 30px;
45   padding: 10px 20px;
46 }

```



- Web Designing with HTML5/CSS3
- JavaScript
- Behavioral Skills

Week 2:

- Programming with Database.
- Behavioral Skills

In this week we all have to do is to complete udemy courses provided by the Amazon during the internship, complete the hands-ons, assessment(important), and to complete the integrated capability test also.

In the is week 2 we learned the database part from scratch with the help of the Mysql and Mysql queries.

After we completed the online udemy courses, we did the hands-ons and completing the hands- on is mandatory for every interns and then, after completing the hands-ons we use to give assessment, a small test whose marks were taken into account, for the calculation of the in the final overall performance.

The most important part of this week was covering all the basis aspects of the database and learning mysql and queries and database from scratch because learning mysql and queries is very important in database.

It also covered integrating of html and css with the database to form proper webpage.



- Programming with Database
- Behavioral Skills

Below is the sample Mysql code.

```
1  shell> mysql your-database-name
```

```
1  CREATE TABLE shop (  
2      article INT UNSIGNED DEFAULT '0000' NOT NULL,  
3      dealer CHAR(20)      DEFAULT ''      NOT NULL,  
4      price  DECIMAL(16,2) DEFAULT '0.00' NOT NULL,  
5      PRIMARY KEY(article, dealer));  
6  INSERT INTO shop VALUES  
7      (1, 'A', 3.45), (1, 'B', 3.99), (2, 'A', 10.99), (3, 'B', 1.45),  
8      (3, 'C', 1.69), (3, 'D', 1.25), (4, 'D', 19.95);
```

```

1  SELECT * FROM shop ORDER BY article;
2  +-----+-----+-----+
3  | article | dealer | price |
4  +-----+-----+-----+
5  |      1 | A      | 3.45 |
6  |      1 | B      | 3.99 |
7  |      2 | A      | 10.99 |
8  |      3 | B      | 1.45 |
9  |      3 | C      | 1.69 |
10 |      3 | D      | 1.25 |
11 |      4 | D      | 19.95 |
12 +-----+-----+-----+

```

Week 3,4,5:

- Programming with java with jdbc
- Behavioral skills

In this week we all have to do is to complete udemy courses provided by the Amazon during the internship, complete the hands-ons, assessment(important), and to complete the integrated capability test also.

In the is week 2 we learned the core java part from scratch with the help of the udemy courses and trainer guide queries.

After we completed the online udemy courses, we did the hands-ons and completing the hands- on is mandatory for every interns and then, after completing the hands-ons we use to give assessment, a small test whose marks were taken into account, for the calculation of the in the final overall performance.

The most important part of this week was covering all the basis aspects of

the core java and learning JDBC and database connectivity with database from scratch because learning java and JDBC is very important in application development.

It also covered integrating of Core java and JDBC with the database to form proper webpage.

This part was very long because it was 3 week long, and we started from core java to advance java part also, connecting small core java with database through database connectivity or JDBC.

This 3 weeks was very important because we learned very crucial things in this 3 weeks, the most important, that every developer should know for developing application.

We did around 30 hands-ons in this part, these hands-ons were very long and difficult in this part.



The most important thing in these 3 weeks was basics of core java. We learned core java from basics and covering all aspects of the java, its features, its uses and how to develop an application from scratch with the help of the java and connecting with database through JDBC.

JDBC was very important part in these 3 weeks because every application requires the database connectivity, and that's only possible with the help of the

database connectivity through JDBC.

We learned all aspects of the JDBC, all types of the Database connectivity and storing data in the tables in the database and also retrieving the data from the database using few lines of the codes.

Connecting to the database is very crucial in the application development and also is the major part in the application development.

Our trainer taught that 4 lines of code will we same in very code of JDBC, that 4 lines should known to very java developer who is working with the application development.

We also learned few packages which are very essential in connecting with the database and without that packages, it would we not possible to connect to the database. We also learned 4 types of database connectivity in the java application development.

Below is the sample example of few lines of the codes to store data and retrieve from the table form database.

```

import java.sql.*;

public class FirstExample {
    static final String DB_URL = "jdbc:mysql://localhost/TUTORIALSPOINT";
    static final String USER = "guest";
    static final String PASS = "guest123";
    static final String QUERY = "SELECT id, first, last, age FROM Employees";

    public static void main(String[] args) {
        // Open a connection
        try(Connection conn = DriverManager.getConnection(DB_URL, USER, PASS);
            Statement stmt = conn.createStatement();
            ResultSet rs = stmt.executeQuery(QUERY);) {
            // Extract data from result set
            while (rs.next()) {
                // Retrieve by column name
                System.out.print("ID: " + rs.getInt("id"));
                System.out.print(", Age: " + rs.getInt("age"));
                System.out.print(", First: " + rs.getString("first"));
                System.out.println(", Last: " + rs.getString("last"));
            }
        } catch (SQLException e) {
            e.printStackTrace();
        }
    }
}

```

Above is the small code of database connectivity or JDBC code.

Week-5(continuity)

Access type – 2 (Integrated capabilityTest)

After completing few technologies we had Integrated capability test, in which we combine our all knowledge what we learned in past weeks like HTML,CSS,Javascript,Code java, JDBC, and try to solve whole long coding question.

Integetrated capability test is of 4 hours, which include all the things what we had learned till now.

It consist of 1 coding question and require full knowledge of all the technologies and integrate that to solve the coding question.

It's a simple or medium size project, which we get as a question in the Integrated capability test within 4 hours.

It contains the huge waitage in the overall performamance, the overall performance is calculates as the average of the assessment, Integrated capability test, Bussiness unit score, Project score.

We get two attempts to give the integrated capability test, if we get failed in first attempt then, we get second attempt to give integrated capability test.

And the second attempt is the last attempt to Integrated capability test because failing in the second attempt can lead to the termination of the offer said by the HR in the one session.



- Solve Challenges using combination of all skills in Stage 1

2.2 Stage 2 – Deep learnings

Week 6:

- Spring core,maven

This is the second stage, deep learning the application development through the advance framework of the java. This is stage we learned Spring core and very basis of the spring framework.

Maven was the most important part in this stage and is very crucial in the application development during the project, we learned the maven basic part related to application development.

Maven and spring core both contribute a lot in developing great application with java, Maven is the most basic of the java application development and used in the real world project.

Below is the sample Maven code.

```

<project xmlns="http://maven.apache.org/POM/4.0.0"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://maven.apache.org/POM/4.0.0
http://maven.apache.org/maven-v4_0_0.xsd">

    <modelVersion>4.0.0</modelVersion>
    <groupId>com.javatpoint</groupId>
    <artifactId>CubeGenerator</artifactId>
    <packaging>jar</packaging>
    <version>1.0-SNAPSHOT</version>
    <name>CubeGenerator</name>
    <url>http://maven.apache.org</url>
    <dependencies>
        <dependency>
            <groupId>junit</groupId>
            <artifactId>junit</artifactId>
            <version>3.8.1</version>
            <scope>test</scope>
        </dependency>
    </dependencies>
</project>

```

```

package com.javatpoint;

/**
 * Hello world!
 *
 */
public class App
{
    public static void main( String[] args )
    {
        System.out.println( "Hello World!" );
    }
}

```

```
package com.javatpoint;

import junit.framework.Test;
import junit.framework.TestCase;
import junit.framework.TestSuite;

/**
 * Unit test for simple App.
 */
public class AppTest
    extends TestCase
{
    /**
     * Create the test case
     *
     * @param testName name of the test case
     */
    public AppTest( String testName )
    {
        super( testName );
    }

    /**
     * @return the suite of tests being tested
     */
}
```

```
public AppTest( String testName )
{
    super( testName );
}

/**
 * @return the suite of tests being tested
 */
public static Test suite()
{
    return new TestSuite( AppTest.class );
}

/**
 * Rigorous Test :- )
 */
public void testApp()
{
    assertTrue( true );
}
}
```

mvn clean compile



• Spring Core, Maven

Week 7,8:

- Spring core
- JUnit and Mockito
- Code quality

In this part of time we had 2 weeks consist of the spring core, JUnit and mockito and code quality.

In this we did Code testing online udemy course using the tools like JUnit and Mockito.

We also learned the code quality, means how to increase the code quality of error code when some error is there in the code.

In Spring core we learned the spring core framework of the java, how to develop the application without the use of the large length of the code, that's means how can we do application development with less amount of the code. Spring framework helps us to use injections and dependencies.

In spring framework we use constructor injection and setter injection for the access of the object or beans.

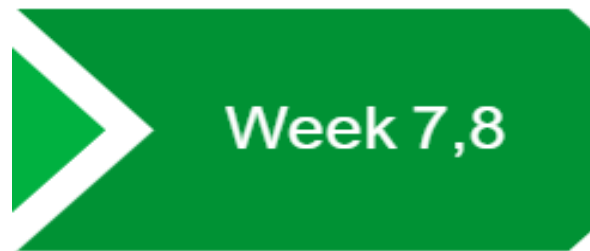
Spring framework is very flexible and widely used in the industry for the application development in the field of the java.

Next, we learned the JUnit in this part of the time which was related to the testing field , how to test the written code with junit tool.

JUnit is very and widely used testing tool, which require java code on which we can test the test cases through the junit.

In Junit , J stands for the java, which means tool for the java code testing. So, JUnit is widely used tool for the testing of the java code in real life project development and in the industry.

We did the hands-ons of the spring, junit and mockito , which little difficult to do but, we completed that with in the given time frame.



- Spring Core
- JUnit and Mockito, Code Quality

Sample Spring core code.

```
package com.javatpoint;

public class Student {
    private String name;

    public String getName() {
        return name;
    }

    public void setName(String name) {
        this.name = name;
    }

    public void displayInfo(){
        System.out.println("Hello: "+name);
    }
}
```

```

<?xml version="1.0" encoding="UTF-8"?>
<beans
  xmlns="http://www.springframework.org/schema/beans"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns:p="http://www.springframework.org/schema/p"
  xsi:schemaLocation="http://www.springframework.org/schema/beans
    http://www.springframework.org/schema/beans/spring-beans-3.0.xsd">

  <bean id="studentbean" class="com.javatpoint.Student">
    <property name="name" value="Vimal Jaiswal"></property>
  </bean>

</beans>

```

```

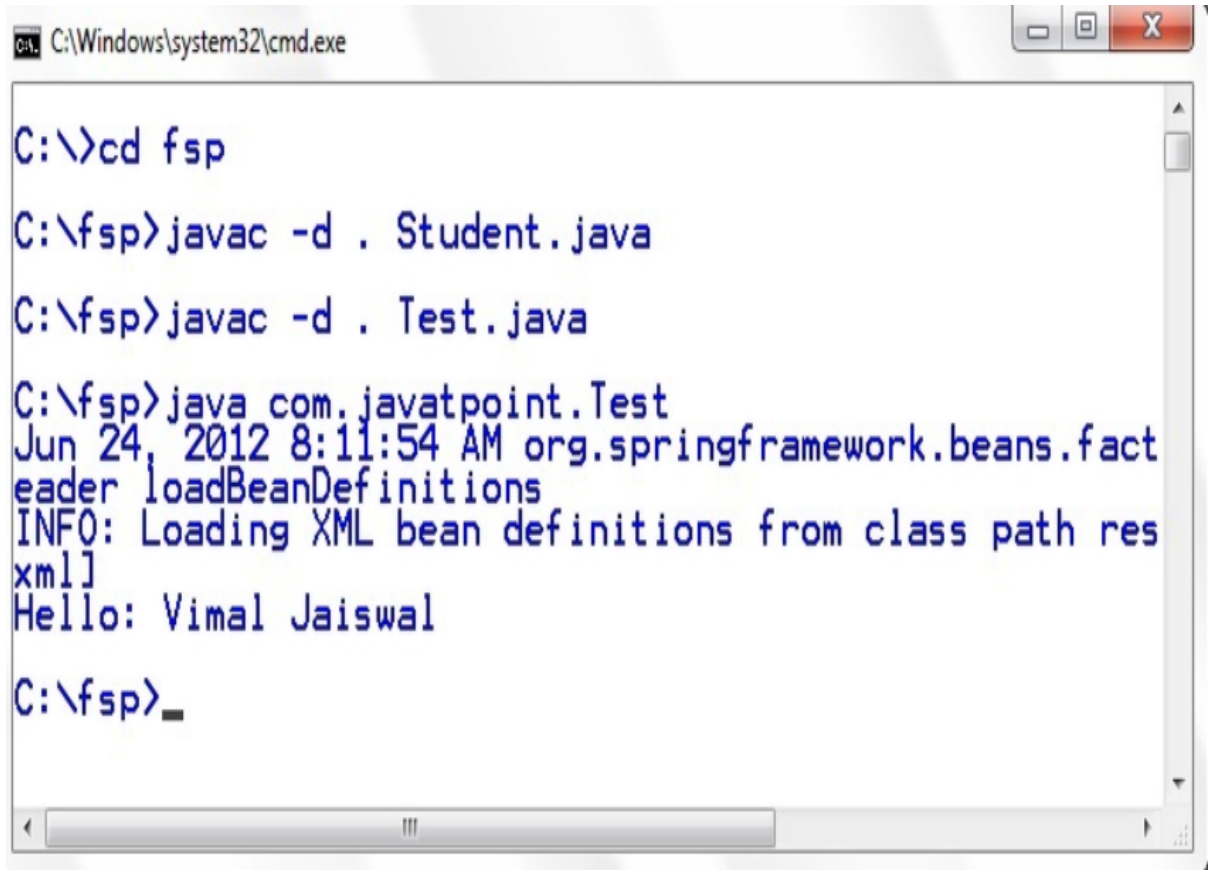
package com.javatpoint;

import org.springframework.beans.factory.BeanFactory;
import org.springframework.beans.factory.xml.XmlBeanFactory;
import org.springframework.core.io.ClassPathResource;
import org.springframework.core.io.Resource;

public class Test {
  public static void main(String[] args) {
    Resource resource=new ClassPathResource("applicationContext.xml");
    BeanFactory factory=new XmlBeanFactory(resource);

    Student student=(Student)factory.getBean("studentbean");
    student.displayInfo();
  }
}

```

```

C:\Windows\system32\cmd.exe

C:\>cd fsp

C:\fsp>javac -d . Student.java

C:\fsp>javac -d . Test.java

C:\fsp>java com.javatpoint.Test
Jun 24, 2012 8:11:54 AM org.springframework.beans.factory
loader loadBeanDefinitions
INFO: Loading XML bean definitions from class path res
xml]
Hello: Vimal Jaiswal

C:\fsp>_

```

Sample JUnit code.

```

package com.javatpoint.logic;

public class Calculation {

    //method that returns maximum number
    public static int findMax(int arr[]){
        int max=0;
        for(int i=1;i<arr.length;i++){
            if(max<arr[i])
                max=arr[i];
        }
        return max;
    }

    //method that returns cube of the given number
    public static int cube(int n){
        return n*n*n;
    }

    //method that returns reverse words
    public static String reverseWord(String str){

        StringBuilder result=new StringBuilder();
        StringTokenizer tokenizer=new StringTokenizer(str, " ");
    }
}

```

```
//method that returns cube of the given number
public static int cube(int n){
    return n*n*n;
}

//method that returns reverse words
public static String reverseWord(String str){

    StringBuilder result=new StringBuilder();
    StringTokenizer tokenizer=new StringTokenizer(str, " ");

    while(tokenizer.hasMoreTokens()){
        StringBuilder sb=new StringBuilder();
        sb.append(tokenizer.nextToken());
        sb.reverse();

        result.append(sb);
        result.append(" ");
    }
    return result.toString();
}
```

```

package com.javatpoint.testcase;

import static org.junit.Assert.assertEquals;
import org.junit.After;
import org.junit.AfterClass;
import org.junit.Before;
import org.junit.BeforeClass;
import org.junit.Test;
import com.javatpoint.logic.Calculation;

```

```

public class TestCase2 {

    @BeforeClass
    public static void setUpBeforeClass() throws Exception {
        System.out.println("before class");
    }

    @Before
    public void setUp() throws Exception {
        System.out.println("before");
    }

    @Test
    public void testFindMax(){
        System.out.println("test case find max");

```

```

        System.out.println("test case find max");
        assertEquals(4,Calculation.findMax(new int[]{1,3,4,2}));
        assertEquals(-2,Calculation.findMax(new int[]{-12,-3,-4,-2}));
    }

    @Test
    public void testCube(){
        System.out.println("test case cube");
        assertEquals(27,Calculation.cube(3));
    }

    @Test
    public void testReverseWord(){
        System.out.println("test case reverse word");
        assertEquals("ym eman si nahk",Calculation.reverseWord("my name is khan"));
    }

    @After
    public void tearDown() throws Exception {
        System.out.println("after");
    }

    @AfterClass
    public static void tearDownAfterClass() throws Exception {
        System.out.println("after class");
    }

}

```

```

Output: before class
        before
        test case find max
        after
        before
        test case cube
        after
        before
        test case reverse word
        after
        after class

```

Sample Mockito code.

```

package org.arpit.java2blog;
import static org.junit.Assert.assertEquals;
import static org.mockito.Mockito.*;

import java.util.List;

import org.junit.Rule;
import org.junit.Test;
import org.mockito.Mock;
import org.mockito.junit.MockitoJUnit;
import org.mockito.junit.MockitoRule;

public class TestWithMockitoJUnitRule {

    @Rule
    public MockitoRule rule = MockitoJUnit.rule();

    @Mock
    private List list;

    @Test
    public void testQuery() {

        //arrange
        when(list.get(anyInt())).thenReturn("Default element");

        String tenthElement=list.get(9);

        //assert
        assertEquals("Default element", tenthElement);
    }
}

```

Week 9:

- Spring MVC
- Spring boot

In this part of the time, we learned about the advance part of the spring, Spring MVC and Spring boot.

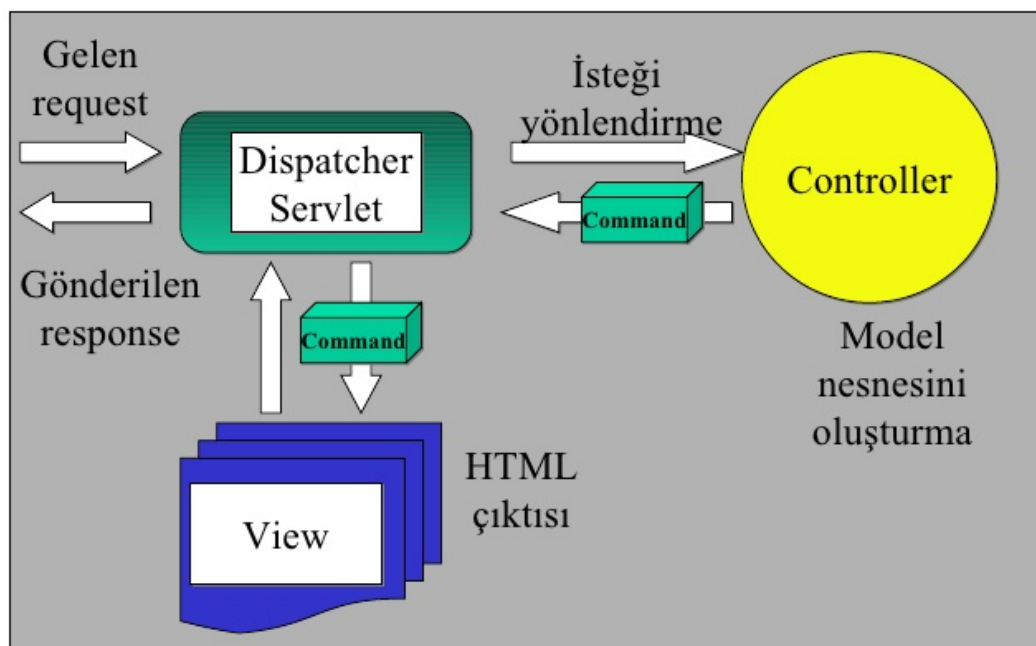
Spring MVC (model, view, control) is most used and developer favorite framework used in the real world for the application development.

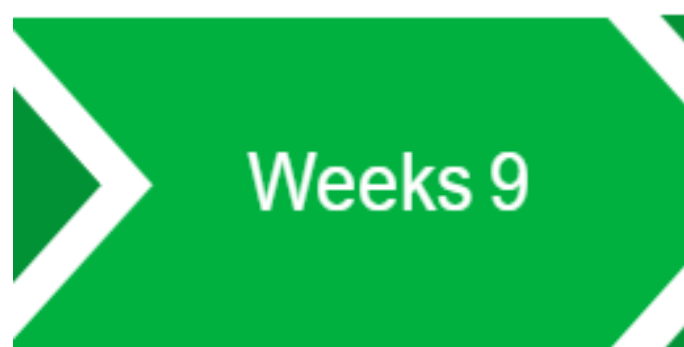
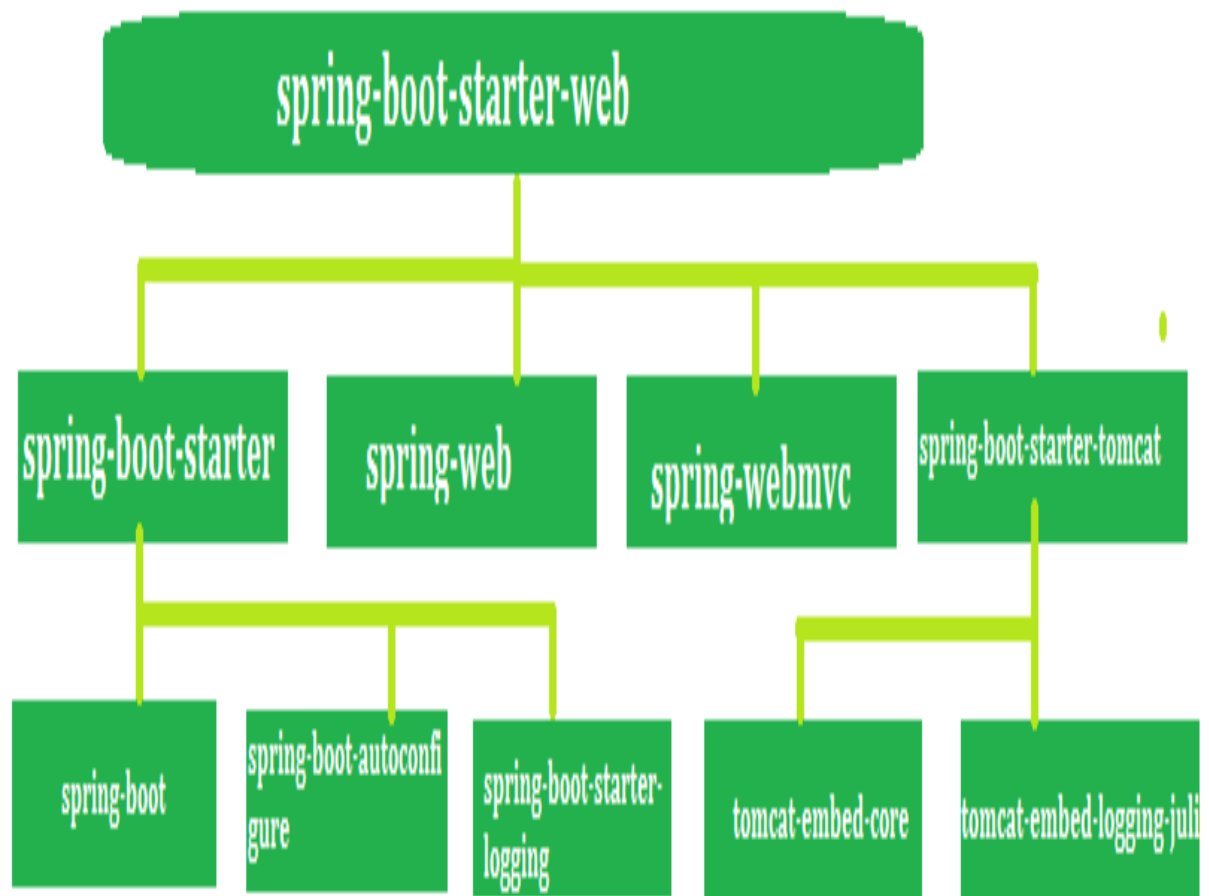
We learned the spring MVC form Udemey course provided by the Amazon during the internship.

Spring MVC comes under the advance framework of the java, now a days most of the application are being developed by the help of the spring MVC model.

Spring boot is another framework of the java comes under the advance part of the java, to work with the spring boot, we need to have some basic knowledge of the core java and spring core to work with the spring boot.

Spring MVC





Spring MVC and
Spring Boot

Week-10

Access type – 2 (Integrated capabilityTest)

After completing few technologies we had Integrated capability test, in which we combine our all knowledge what we learned in past weeks like Spring core, Maven, Junit, Mockito, Spring core, Spring boot, spring MVC and try to solve whole long coding question.

Integrated capability test is of 4 hours, which include all the things what we had learned till now.

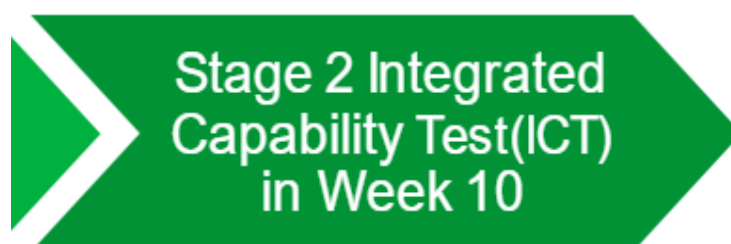
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- Solve challenges using Combination of all skills in Stage 2

2.3 Stage 3 – Deep Niche Skills

Weeks 10,11:

- Spring REST with Spring
- Boot, Git, JQuery, Bootstrap

In this part of the time we learned about some advance application development technology like Spring REST with spring. Spring Rest is very highly demanding technologies today in the market, spring Rest is another very important java framework which is used for the application development.

Spring Rest is fully based on the Spring concept and is very helpful in the application development, especially java application development. Spring REST is most advanced framework used in the industry to develop the java application.

Spring Rest uses the rest feature also, which is also very important for the application development, the Rest is mostly used in the API and application programming interface is based on the http request and http reponse.

Spring Rest Api is widely used in the Information technology market to develop the application development, we can say we must know the basics of the spring and API to get started with the Spring API.

Spring Rest Api is enhanced API tool to use the API features with the spring, if somebody is creating the application which is the more modern looking website or application then, we can create that application or website with the help of the spring and spring rest Api tool.

Spring Rest Api tool reduces most the developer time and effort and make application development more easy to the developer .

This is the most important and crucial in the application development and make developer work easy and less time consuming.

Spring Rest Api is the tool which must be used in very application development because it is widely used in the Information technology.

Week 10, 11

- Spring REST with Spring
- Boot, Git, jQuery, Bootstrap

```
package com.javatpoint;

public class Product
{
    private int id;
    private String pname;
    private String batchno;
    private double price;
    private int noofproduct;
    //default constructor
    public Product()
    {

    }

    //constructor using fields
    public Product(int id, String pname, String batchno, double price, int noofproduct)
    {
        super();
        this.id = id;
        this.pname = pname;
        this.batchno = batchno;
        this.price = price;
        this.noofproduct = noofproduct;
    }
    //getters and setters
```

```

}
//getters and setters
public int getId()
{
    return id;
}
public void setId(int id)
{
    this.id = id;
}
public String getPname()
{
    return pname;
}
public void setName(String pname)
{
    this.pname = pname;
}
public String getBatchno()
{
    return batchno;
}
public void setBatchno(String batchno)
{

```

```

{
    return batchno;
}
public void setBatchno(String batchno)
{
    this.batchno = batchno;
}
public double getPrice()
{
    return price;
}
public void setPrice(double price)
{
    this.price = price;
}
public int getNoofproduct()
{
    return noofproduct;
}
public void setNoofproduct(int noofproduct)
{
    this.noofproduct = noofproduct;
}
}

```

ProductController.java

```

package com.javatpoint;
import java.util.List;
import org.springframework.beans.factory.annotation.Autowired;
import org.springframework.web.bind.annotation.GetMapping;
import org.springframework.web.bind.annotation.RestController;

@RestController
public class ProductController
{
    @Autowired
    private IProductService productService;
    //mapping the getProduct() method to /product
    @GetMapping(value = "/product")
    public List<Product> getProduct()
    {
        //finds all the products
        List<Product> products = productService.findAll();
        //returns the product list
        return products;
    }
}

```

IProductService.java

```

package com.javatpoint;
import java.util.List;
public interface IProductService
{
    List<Product> findAll();
}

```

ProductService.java

```

package com.javatpoint;
import java.util.ArrayList;
import java.util.List;
import org.springframework.stereotype.Service;

@Service
public class ProductService implements IProductService
{
    @Override
    public List<Product> findAll()
    {
        //creating an object of ArrayList
        ArrayList<Product> products = new ArrayList<Product>();
        //adding products to the List
        products.add(new Product(100, "Mobile", "CLK98123", 9000.00, 6));
        products.add(new Product(101, "Smart TV", "LGST09167", 60000.00, 3));
        products.add(new Product(102, "Washing Machine", "38753BK9", 9000.00, 7));
        products.add(new Product(103, "Laptop", "LHP29OCP", 24000.00, 1));
        products.add(new Product(104, "Air Conditioner", "ACLG66721", 30000.00, 5));
        products.add(new Product(105, "Refrigerator", "12WP9087", 10000.00, 4));
        //returns a list of product
        return products;
    }
}

```

index.html

```
<!DOCTYPE html>
<html>
<head>
<title>Home page</title>
<meta charset="UTF-8">
<meta name="viewport" content="width=device-width, initial-scale=1.0">
</head>
<body>
<p>
<a href="product">Get all Products</a>
</p>
</body>
</html>
```

Spring boot is the modern tool for the development of the application on any platform on which we can host the application.

Spring boot also provide infrastructure support at the developer level and reduces most of the time and effort of the developer so, that developer can efficiently develop the application within specified time limit.

Git is the version control tool used for the application development by the developer. Developer can develop the application and can change the code from time to time as per the time when there is need for the modification by the customer or the by the modern time, Git is very famous tool and widely used tool not only in the student community but, also in the developer community for the enhancement of the application and better development of the application.

Jquery is another javascript library used widely by the developer in the information technology world for the development of the application for the real purpose. Jquery makes HTML page more responsive and good looking because it support many features which is not there in the previous ones. JQuery is most widely used and important and crucial tool for the development of the application which contains the HTML and CSS coding.

Bootstrap is the another library used in the development of the application which uses the HTML and CSS codes with Javascript codes. Bootstrap contains open source SVG icon library, which is the most used library now a days for the development of the application which contains the HTML and CSS code with the javascript code.

HTML Code

```
<div id="animateMe">
  Watch me be animated!
</div>
<!-- One button for each fading command -->
<input type="button" id="btnAnimate" value="Animate It">
<input type="button" id="btnAnimateBack" value="Animate It Back">
```

CSS Code

```
div#animateMe {
  left: 0;
  top: 0;
  position: relative;
  width: 300px;
  height: 100px;
  border: 1px solid black;
  background-color: teal;
}
```

CSS Code

```
div#animateMe {
  left: 0;
  top: 0;
  position: relative;
  width: 300px;
  height: 100px;
  border: 1px solid black;
  background-color: teal;
}
```

JavaScript Code

```
$('#btnAnimate').click(function() {
  $('#animateMe').animate({
    'left': '300px',
    'top': '200px',
    'border-width': '8px'
  }, 1000);
});
$('#btnAnimateBack').click(function() {
  $('#animateMe').animate({
    'left': '0',
    'top': '0',
    'border-width': '1px'
  }, 1000);
});
```

Weeks 12,13:

- Bootstrap
- Angular/React
- Microservices
- Cloud(AWS)
- Splunk



Bootstrap is the another library used in the development of the application which uses the HTML and CSS codes with Javascript codes. Bootstrap contains open source SVG icon library, which is the most used library now a days for the development of the application which contains the HTML and CSS code with the javascript code.

Angular/React are advance Javascript framework widely used top product based company like google or Microsoft for the development of the product.

```

import React from 'react';

class Person extends React.Component{
  constructor(props) {
    super(props);
    this.state = {
      age:0
    }
    this.incrementAge = this.incrementAge.bind(this)
  }

  incrementAge(){
    this.setState({
      age:this.state.age + 1;
    });
  }

  render(){
    return(
      <div>
        <label>My age is: {this.state.age}</label>
        <button onClick={this.incrementAge}>Grow me older !!</button>
      </div>
    );
  }
}

export default Person;

```

```

import React from 'react';

class App extends React.Component {
  constructor(props) {
    super(props);

    // We declare the state as shown below

    this.state = {
      x: "This is x from state",
      y: "This is y from state"
    }
  }
  render() {
    return (
      <div>
        <h1>{this.state.x}</h1>
        <h2>{this.state.y}</h2>
      </div>
    );
  }
}
export default App;

```

Class Type Components

```
class Cat extends React.Component {  
  constructor(props) {  
    super(props);  
  
    this.state = {  
      humor: 'happy'  
    }  
  }  
  render() {  
    return(  
      <div>  
        <h1>{this.props.name}</h1>  
        <p>  
          {this.props.color}  
        </p>  
      </div>  
    );  
  }  
}
```

Angular/React are open source framework of the javascript widely used for the development of the web based application.

Cloud is top trending technology in the market mostly used by the most of the Top information technology company like TCS,Amazon, Wipro and many more for the hosting of the application and websites.


```

PowerShell
1 $listOfEvents = New-Object -TypeName 'System.Collections.Generic.List[Amazon.CloudWatchLogs.Model.InputLogEvent]'
2
3 $logEntry1 = New-Object -TypeName 'Amazon.CloudWatchLogs.Model.InputLogEvent'
4 $logEntry1.Message = 'Message 1'
5 $logEntry1.Timestamp = (Get-Date).ToUniversalTime()
6 $null = $listOfEvents.Add($logEntry1)
7
8 $logEntry2 = New-Object -TypeName 'Amazon.CloudWatchLogs.Model.InputLogEvent'
9 $logEntry2.Message = 'Message 2'
10 $logEntry2.Timestamp = (Get-Date).ToUniversalTime()
11 $null = $listOfEvents.Add($logEntry2)
12
13 $splat = @{
14     LogEvent      = $listOfEvents
15     LogGroupName  = $logGroupName
16     LogStreamName = $logStreamName
17     SequenceToken = $sequenceToken
18 }
19 $sequenceToken = Write-CWLogEvent @splat

```

In cloud market in today's market we have three leading top players AWS, Azure, GCP, these all three are the cloud service providers, have almost the same services but, with the different names but, the work is the totally same.

Code Sample: Create an Amazon CloudWatch Log Stream

```

PowerShell
1 # Uses the "logs:CreateLogStream" IAM Policy.
2 $splat = @{
3     LogGroupName = 'MyLogGroup'
4     LogStreamName = 'MyLogStream'
5 }
6 New-CWLogStream @splat

```

I have done one AWS certification which is AWS certified solution architect associate in the year of the 2020.

XX?

Week 14(continuity)

MFPE

Project building

This is the last phase of the internship in the Amazon, which ends by the project making and submitting the project to the mentor for the final verification and evaluation.



Project is yet not assigned to us in the internship that's why I am making this internship report for the submission of the alternative of the project work so that our final semester result can be declare on time and we all get the result on time.

In the whole till now we learned various technologies related to the application development because my domain was the java developer so, I was trained like java developer by the Amazon.

In the internship we learned this technology:

HTML and CSS

Java

JavaScript

React

DynamoDB

Internal Frameworks

AWS

Bootstrap

Conclusion

3.1 Conclusion

I am still on the way doing my internship with the Amazon and I have learned so much from this internship offered by the internship, rally helped me in shaping my personality and equipping me with the knowledge of this technologies.

My Final internship project is still remaining with Amazon internship and I will give my best in doing the internship project.

I like to thanks in advance to the coaches, SDM, mentor and trainer of Amazon who guided me through the whole journey of my internship in Amazon and solved all my doubts during the internship. The Coaches, SDM, Mentor and trainer were all of good nature and at every moment helped me when I was doing wrong and shaped me during my whole internship.

Specially my mentor gave his more effort during the internship and passed our all query to the higher authority in the company whether it was related to the reattempt of the assessment, technical issue faced in the assessment or providing extra time to complete the work.

I would highly recommend my juniors once to prepare well for the offer in the Amazon and get the internship opportunity form the Amazon because Amazon is top fortune company in the information technology field.

I like thank you my TNP officer Mr. Pankaj Kumar and Faculty member Dr. Nafis U khan sir for their support and hard work during the whole placement process because I know how complex is the management of the placement drive.

Reference

- Amazon Hand book
- Internship experience
- Assessment
- Amazon internship curriculum

Internship Report

² Internship report submitted in partial fulfillment of the requirement for the degree of Bachelor of Technology

In

**Computer Science and Engineering/Information
Technology**

By

Pranjal Gangwar (171202)



² Department of Computer Science & Engineering

**Jaypee University of Information Technology
Waknaghat, Solan-173234, Himachal Pradesh**

An Internship Report with regard to Amazon Internship.

¹ Acknowledgements

This is a matter of pleasure for me to acknowledge my deep sense of gratitude to Jaypee University and my college, Jaypee university of information technology for giving me an opportunity to explore my abilities via this internship program. I would like to express my sincere gratitude to our TnP officer, Mr. Pankaj Kumar and our faculty Coordinator, Dr. Nafis U Khan for this opportunity. I also wish to express my gratitude to my internship supervisor, for their valuable guidance and advice in completing this project.

I would like to record my sincere appreciation and gratitude towards all the officials and employees of Amazon, without whose kind assistance, my internship program would not have succeeded. The facts and other vital information provided by them have contributed towards making this report as comprehensive as possible. I am indeed thankful to them.

¹
Last but not the least, I would like to express my sincere thanks to all my familymembers, friends and well-wishers for their immense support and best wishes throughout the internship duration and the preparation of this report.

I believe that this report will be a valuable asset not only for academic institution, butwill also be useful for all those who are interested to learn about internship experiences in auditing and consulting firm.

Chapter I

Organization

Profile

1.1 Background:

After the end of 7th semester, various company visited to our college for the placement of the student, one such company was Amazon, due to my good fortune, I was selected in Amazon, after selected as SDE-Intern, I was offered an internship program by the Amazon before the full-time role and completing internship is necessary for the full-time role in the Amazon.

Amazon is the top IT company in the India, and major IT company in US. Amazon employees around 3 lakh employee and recruit around 20 thousand fresh people every year from India. Amazon also hires from different country across the globe.

Amazon offers various role in the company like develop, Designer, Tester and Manager in the company, but, before becoming the associate every person should complete the intern period and after the intern period there is one year of probation period in the company for the associate to join the company.

The internship period varies and depends on the roles, which the intern gets, like someone who got developer profile, for them internship period will be of around 4-5 months and for the quality insurance, it might vary from 5-6 month.

The domain allocation is random in the Amazon for the interns, but sometime it depends on the assimilation test also, the person who got higher marks in assimilation test, will have higher chances to get better profile or domain and it also depends on the first come first serve basis.

4

Candidate's Declaration

I hereby declare that the work presented in this report entitled “**Internship Report**” in partial fulfillment of the requirements for the award of the degree of **Bachelor of Technology in Computer Science and Engineering/Information Technology** submitted in the department of Computer Science & Engineering and Information Technology, Jaypee University of Information Technology Waknaghat is an authentic record of my own work carried out over a period from Feb 2021 to May 2021 under the supervision of Mr. **Saurabh Arora** (SDM at Amazon).

The matter embodied in the report has not been submitted for the award of any other degree or diploma.

Pranjal Gangwar (171202)

This is to certify that the above statement made by the candidate is true to the best of my knowledge.

Mr. Saurabh Arora
SDM at Amazon
Dated: 15/05/21

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Organization

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2.3 Stage 3 – Niche skills

Chapter III

Conclusion

3.1 Conclusion

References

1.2 Mission, vision, values and objectives

Mission – Amazon mission is to train every fresh person who got selected in to the Amazon. Amazon provide intemship to every person who got selected in the Amazon.

Every year Amazon train college fresh out student in bulk number before giving them the associate role. This recruit happens from all college over the india.

Amazon spends much time,effort and money in training the intern before giving them the actual work and before them to work in the real environment.

Vision - The Amazon vision is to trainer every fresh out student recruited form the college no matter from which college the persons come.

Values

The values of the organization are as follows:

- *Valuing People*

We believe that our success depends first and foremost on people. By respecting people in everything we do, we will develop and maintain high quality, mutuallybeneficial relationships with our clients, professional colleagues, referral sources,vendors, community members and each other.

- *Building Client Relationships*

We seek to earn long-term client loyalty by developing a deep understanding of each client's business and personal goals, by demonstrating unwavering reliability and integrity in our work and by acting as an independent and objective advisor toour clients.

- *Upholding Quality and Integrity*

We will maintain an environment where a commitment to quality, honesty, respect, fairness and professional ethics governs the actions and decisions ofeveryone within our firm.

Keys to Success:

- Complete the work with full honesty.
- Complete the work on time.
- Complete the assessment.
- Complete the project within schedule time.
- Try to learn as much as possible from the SME, Trainer, mentor.
- Open to learn anything taught.

Objectives:

The objectives of Amazon are:

- The overall objective is to focus the activities towards its specialized services and to become a leader in this niche in the country.
- Growth - To expand the business at a rate that is both challenging and manageable, serving the market with innovation and adaptability.

1.3. Ice breaker

Week 1:

- Corporate induction.
- Talent Manager connect.
- Amazon Agenda session on core values.
- Leaders Talk (Academy) and many more.

Week 2:

- Behavior Skills.
- Agile Workshop.
- Devops Workshop.
- Behavior session.

IceBreaker

Week 1

- Corporate Induction
- Talent Manager Connect
- Cognizant Agenda Session on Core Values
- Leader Talks (Academy) and many more...

Week 2

- Behavioral Skills
- Agile Workshop
- DevOps Workshop
- Behavioral Session

Chapter II

Internship program sequence

2.1 Stage 1 – Core Programming fundamentals

I was inducted as a team member in my cohort then, this core programming fundamentals started, this core programming fundamentals consist of the certain weeks in which we have to learn various technology and do various hands-on and assessment during this core programming sequence.

Week 1:

- Web designing with HTML and CSS.
- Javascript.
- Behavioral Skills.

In this week we all have to do is to complete udemy courses provided by the Amazon during the internship, complete the hands-ons, assessment(inmportant), and to complete the integrated capability test also.

In the is week 1 we learned the designing part from scratch with the help of the HTML5 and CSS and also Javascript.

After we completed the online udemy courses, we did the hands-ons and completing the hands- on is mandatory for every interns and then, after completing the hands-ons we use to give assessment, a small test whose marks were taken into account, for the calculation of the in the final overall performance.

The most important part of this week was covering all the basis aspects of the designing and learning html and css and javascript from scratch because learning html and css is very important in designing.

It also covered integrating of html and css with the javascript to form proper webpage.

Below is the sample HTML and CSS, and Javascript Code.

```

CSSpractice.html x
1 <!DOCTYPE html>
2 <html lang="en-US">
3   <head>
4     <link rel="stylesheet" href="css/style.css" />
5     <title>HTML Page with CSS</title>
6   </head>
7   <body>
8     <header>
9       Fake Industry Expo Announcement
10    </header>
11    <article>
12      Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do
13      velit esse cillum dolore eu fugiat nulla pariao csstur. Excepte
14    </article>
15    <footer>
16      &copy; Copyright Imaginary Organization 2016
17    </footer>
18  </body>
19 </html>

style.css
1 body {
2   font-family: 'Segoe UI', Tahoma, Geneva, Verdana, sans-serif;
3 }
4 article {
5   color: #5C373C;
6   margin: 10px;
7 }
8 footer {
9   font-size: x-small;
10  font-style: italic;
11  background-color: #C14860;
12  padding: 10px;
13 }
14 header {
15   font-size: x-large;
16   font-weight: bold;
17   text-align: center;
18   background: -moz-linear-gradient(#051118, #5C373C);
19   color: #CAA893;
20   border: thin #CAA893 inset;
21   margin: 20px 30px;
22   padding: 10px 20px;
23 }

```



- Web Designing with HTML5/CSS3
- JavaScript
- Behavioral Skills

Week 2:

- Programming with Database.
- Behavioral Skills

In this week we all have to do is to complete udemy courses provided by the Amazon during the internship, complete the hands-ons, assessment(important), and to complete the integrated capability test also.

In the is week 2 we learned the database part from scratch with the help of the Mysql and Mysql queries.

After we completed the online udemy courses, we did the hands-ons and completing the hands- on is mandatory for every interns and then, after completing the hands-ons we use to give assessment, a small test whose marks were taken into account, for the calculation of the in the final overall performance.

The most important part of this week was covering all the basis aspects of the database and learning mysql and queries and database from scratch because learning mysql and queries is very important in database.

It also covered integrating of html and css with the database to form proper webpage.



- Programming with Database
- Behavioral Skills

Below is the sample Mysql code.

```
1  shell> mysql your-database-name
```

```
1  CREATE TABLE shop (  
2      article INT UNSIGNED DEFAULT '0000' NOT NULL,  
3      dealer CHAR(20) DEFAULT '' NOT NULL,  
4      price DECIMAL(16,2) DEFAULT '0.00' NOT NULL,  
5      PRIMARY KEY(article, dealer));  
6  INSERT INTO shop VALUES  
7      (1, 'A', 3.45), (1, 'B', 3.99), (2, 'A', 10.99), (3, 'B', 1.45),  
8      (3, 'C', 1.69), (3, 'D', 1.25), (4, 'D', 19.95);
```



```

1  SELECT * FROM shop ORDER BY article;
2  +-----+-----+-----+
3  | article | dealer | price |
4  +-----+-----+-----+
5  |      1 | A      |  3.45 |
6  |      1 | B      |  3.99 |
7  |      2 | A      | 10.99 |
8  |      3 | B      |  1.45 |
9  |      3 | C      |  1.69 |
10 |      3 | D      |  1.25 |
11 |      4 | D      | 19.95 |
12 +-----+-----+-----+

```

Week 3,4,5:

- Programming with java with jdbc
- Behavioral skills

In this week we all have to do is to complete udemy courses provided by the Amazon during the internship, complete the hands-ons, assessment(inmportant), and to complete the integrated capability test also.

In the is week 2 we learned the core java part from scratch with the help of the udemy courses and trainer guide queries.

After we completed the online udemy courses, we did the hands-ons and completing the hands- on is mandatory for every interns and then, after completing the hands-ons we use to give assessment, a small test whose marks were taken into account, for the calculation of the in the final overall performance.

The most important part of this week was covering all the basis aspects of

the core java and learning JDBC and database connectivity with database from scratch because learning java and JDBC is very important in application development.

It also covered integrating of Core java and JDBC with the database to form proper webpage.

This part was very long because it was 3 week long, and we started from core java to advance java part also, connecting small core java with database through database connectivity or JDBC.

This 3 weeks was very important because we learned very crucial things in this 3 weeks, the most important, that very developer should know for developing application.

We did around 30 hands-ons in this part, thae hands-ons were very long and difficult in this part.



- Programming in Java, JDBC
- Behavioral Skills

The most important thing in these 3 weeks was basics of core java. We learned core java from basics and covering all aspects of the java, its features, it's uses and how to develop an application from scratch with the help of the java and connecting with database through JDBC.

JDBC was very important part in these 3 weeks because very application requires the database connectivity, and that's only possible with the of the

database connectivity through JDBC.

We learned all aspects of the JDBC, all types of the Database connectivity and storing data in the tables in the database and also retrieving the data from the database using few lines of the codes.

Connecting to the database is very crucial in the application development and also is the major part in the application development.

Our trainer taught that 4 lines of code will we same in very code of JDBC, that 4 lines should known to very java developer who is working with the application development.

We also learned few packages which are very essential in connecting with the database and without that packages, it would we not possible to connect to the database. We also learned 4 types of database connectivity in the java application development.

Below is the sample example of few lines of the codes to store data and retrieve from the table form database.

```
import java.sql.*;

public class FirstExample {
    static final String DB_URL = "jdbc:mysql://localhost/TUTORIALSPOINT";
    static final String USER = "guest";
    static final String PASS = "guest123";
    static final String QUERY = "SELECT id, first, last, age FROM Employees";

    public static void main(String[] args) {
        // Open a connection
        try(Connection conn = DriverManager.getConnection(DB_URL, USER, PASS);
            Statement stmt = conn.createStatement();
            ResultSet rs = stmt.executeQuery(QUERY);) {
            // Extract data from result set
            while (rs.next()) {
                // Retrieve by column name
                System.out.print("ID: " + rs.getInt("id"));
                System.out.print(", Age: " + rs.getInt("age"));
                System.out.print(", First: " + rs.getString("first"));
                System.out.println(", Last: " + rs.getString("last"));
            }
        } catch (SQLException e) {
            e.printStackTrace();
        }
    }
}
```

Above is the small code of database connectivity or JDBC code.

Week-5(continuity)

Access type – 2 (Integrated capabilityTest)

After completing few technologies we had Integrated capability test, in which we combine our all knowledge what we learned in past weeks like HTML,CSS,Javascript,Code java, JDBC, and try to solve whole long coding question.

Integrated capability test is of 4 hours, which include all the things what we had learned till now.

It consist of 1 coding question and require full knowledge of all the technologies and integrate that to solve the coding question.

It's a simple or medium size project, which we get as a question in the Integrated capability test within 4 hours.

It contains the huge waitage in the overall performamance, the overall performance is calculates as the average of the assessment, Integrated capability test, Bussiness unit score, Project score.

We get two attempts to give the integrated capability test, if we get failed in first attempt then, we get second attempt to give integrated capability test.

And the second attempt is the last attempt to Integrated capability test because failing in the second attempt can lead to the termination of the offer said by the HR in the one session.



- Solve Challenges using combination of all skills in Stage 1

2.2 Stage 2 – Deep learnings

Week 6:

- Spring core,maven

This is the second stage, deep learning the application development through the advance framework of the java. This is stage we learned Spring core and very basis of the spring framework.

Maven was the most important part in this stage and is very crucial in the application development during the project, we learned the maven basic part related to application development.

Maven and spring core both contribute a lot in developing great application with java, Maven is the most basic of the java application development and used in the real world project.

Below is the sample Maven code.

```

<project xmlns="http://maven.apache.org/POM/4.0.0"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="http://maven.apache.org/POM/4.0.0
    http://maven.apache.org/maven-v4_0_0.xsd">

```

```

  <modelVersion>4.0.0</modelVersion>
  <groupId>com.javatpoint</groupId>
  <artifactId>CubeGenerator</artifactId>
  <packaging>jar</packaging>
  <version>1.0-SNAPSHOT</version>
  <name>CubeGenerator</name>
  <url>http://maven.apache.org</url>
  <dependencies>
    <dependency>
      <groupId>junit</groupId>
      <artifactId>junit</artifactId>
      <version>3.8.1</version>
      <scope>test</scope>
    </dependency>
  </dependencies>
</project>

```

```

package com.javatpoint;

/**
 * Hello world!
 *
 */
public class App
{
    public static void main( String[] args )
    {
        System.out.println( "Hello World!" );
    }
}

```

```
package com.javatpoint;

import junit.framework.Test;
import junit.framework.TestCase;
import junit.framework.TestSuite;

/**
 * Unit test for simple App.
 */
public class AppTest
    extends TestCase
{
    /**
     * Create the test case
     *
     * @param testName name of the test case
     */
    public AppTest( String testName )
    {
        super( testName );
    }

    /**
     * @return the suite of tests being tested
     */
}
```



```
public AppTest( String testName )
{
    super( testName );
}

/**
 * @return the suite of tests being tested
 */
public static Test suite()
{
    return new TestSuite( AppTest.class );
}

/**
 * Rigorous Test :- )
 */
public void testApp()
{
    assertTrue( true );
}
}
```

```
mvn clean compile
```



• Spring Core, Maven

Week 7,8:

- Spring core
- JUnit and Mockito
- Code quality

In this part of time we had 2 weeks consist of the spring core, JUnit and mockito and code quality.

In this we did Code testing online udemy course using the tools like JUnit and Mockito.

We also learned the code quality, means how to increase the code quality of error code when some error is there in the code.

In Spring core we learned the spring core framework of the java, how to develop the application without the use of the large length of the code, that's means how can we do application development with less amount of the code. Spring framework helps us to use injections and dependencies.

In spring framework we use constructor injection and setter injection for the access of the object or beans.

Spring framework is very flexible and widely used in the industry for the application development in the field of the java.

Next, we learned the JUnit in this part of the time which was related to the testing field , how to test the written code with junit tool.

JUnit is very and widely used testing tool, which require java code on which we can test the test cases through the junit.

In JUnit , J stands for the java, which means tool for the java code testing. So, JUnit is widely used tool for the testing of the java code in real life project development and in the industry.

We did the hands-ons of the spring, junit and mockito , which little difficult to do but, we completed that with in the given time frame.



- Spring Core
- JUnit and Mockito, Code Quality

Sample Spring core code.

```
package com.javatpoint;

public class Student {
    private String name;

    public String getName() {
        return name;
    }

    public void setName(String name) {
        this.name = name;
    }

    public void displayInfo(){
        System.out.println("Hello: "+name);
    }
}
```

```

<?xml version="1.0" encoding="UTF-8"?>
<beans
  xmlns="http://www.springframework.org/schema/beans"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns:p="http://www.springframework.org/schema/p"
  xsi:schemaLocation="http://www.springframework.org/schema/beans
    http://www.springframework.org/schema/beans/spring-beans-3.0.xsd">

  <bean id="studentbean" class="com.javatpoint.Student">
    <property name="name" value="Vimal Jaiswal"></property>
  </bean>

</beans>

```

```

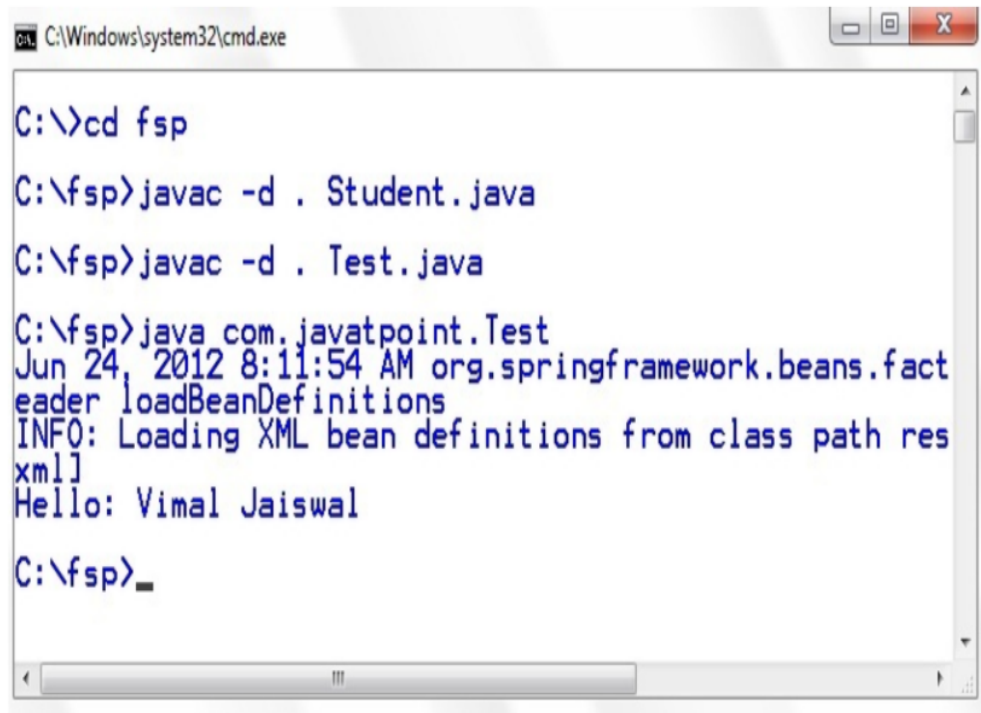
package com.javatpoint;

import org.springframework.beans.factory.BeanFactory;
import org.springframework.beans.factory.xml.XmlBeanFactory;
import org.springframework.core.io.ClassPathResource;
import org.springframework.core.io.Resource;

public class Test {
  public static void main(String[] args) {
    Resource resource=new ClassPathResource("applicationContext.xml");
    BeanFactory factory=new XmlBeanFactory(resource);

    Student student=(Student)factory.getBean("studentbean");
    student.displayInfo();
  }
}

```



```
C:\Windows\system32\cmd.exe

C:\>cd fsp
C:\fsp>javac -d . Student.java
C:\fsp>javac -d . Test.java
C:\fsp>java com.javatpoint.Test
Jun 24, 2012 8:11:54 AM org.springframework.beans.factory
oader loadBeanDefinitions
INFO: Loading XML bean definitions from class path res
xml]
Hello: Vimal Jaiswal
C:\fsp>_
```

Sample JUnit code.

```
package com.javatpoint.logic;
public class Calculation {
    //method that returns maximum number
    public static int findMax(int arr[]){
        int max=0;
        for(int i=1;i<arr.length;i++){
            if(max<arr[i])
                max=arr[i];
        }
        return max;
    }
    //method that returns cube of the given number
    public static int cube(int n){
        return n*n*n;
    }
    //method that returns reverse words
    public static String reverseWord(String str){

        StringBuilder result=new StringBuilder();
        StringTokenizer tokenizer=new StringTokenizer(str," ");
```

```
//method that returns cube of the given number
public static int cube(int n){
    return n*n*n;
}

//method that returns reverse words
public static String reverseWord(String str){

    StringBuilder result=new StringBuilder();
    StringTokenizer tokenizer=new StringTokenizer(str," ");

    while(tokenizer.hasMoreTokens()){
        StringBuilder sb=new StringBuilder();
        sb.append(tokenizer.nextToken());
        sb.reverse();

        result.append(sb);
        result.append(" ");
    }
    return result.toString();
}
```

```

package com.javatpoint.testcase;

import static org.junit.Assert.assertEquals;
import org.junit.After;
import org.junit.AfterClass;
import org.junit.Before;
import org.junit.BeforeClass;
import org.junit.Test;
import com.javatpoint.logic.Calculation;

public class TestCase2 {

    @BeforeClass
    public static void setUpBeforeClass() throws Exception {
        System.out.println("before class");
    }

    @Before
    public void setUp() throws Exception {
        System.out.println("before");
    }

    @Test
    public void testFindMax(){
        System.out.println("test case find max");

        System.out.println("test case find max");
        assertEquals(4,Calculation.findMax(new int[]{1,3,4,2}));
        assertEquals(-2,Calculation.findMax(new int[]{-12,-3,-4,-2}));
    }

    @Test
    public void testCube(){
        System.out.println("test case cube");
        assertEquals(27,Calculation.cube(3));
    }

    @Test
    public void testReverseWord(){
        System.out.println("test case reverse word");
        assertEquals("ym eman si nahk",Calculation.reverseWord("my name is khan"));
    }

    @After
    public void tearDown() throws Exception {
        System.out.println("after");
    }

    @AfterClass
    public static void tearDownAfterClass() throws Exception {
        System.out.println("after class");
    }

}

```

```

Output: before class
       before
       test case find max
       after
       before
       test case cube
       after
       before
       test case reverse word
       after
       after class

```

Sample Mockito code.

```

package org.arpit.java2blog;
import static org.junit.Assert.assertEquals;
import static org.mockito.Mockito.*;

import java.util.List;

import org.junit.Rule;
import org.junit.Test;
import org.mockito.Mock;
import org.mockito.junit.MockitoJUnit;
import org.mockito.junit.MockitoRule;

public class TestWithMockitoJUnitRule {

    @Rule
    public MockitoRule rule = MockitoJUnit.rule();

    @Mock
    private List list;

    @Test
    public void testQuery() {

        //arrange
        when(list.get(anyInt())).thenReturn("Default element");

        String tenthElement=list.get(9);

        //assert
        assertEquals("Default element", tenthElement);
    }
}

```


Week 9:

- Spring MVC
- Spring boot

In this part of the time, we learned about the advance part of the spring, Spring MVC and Spring boot.

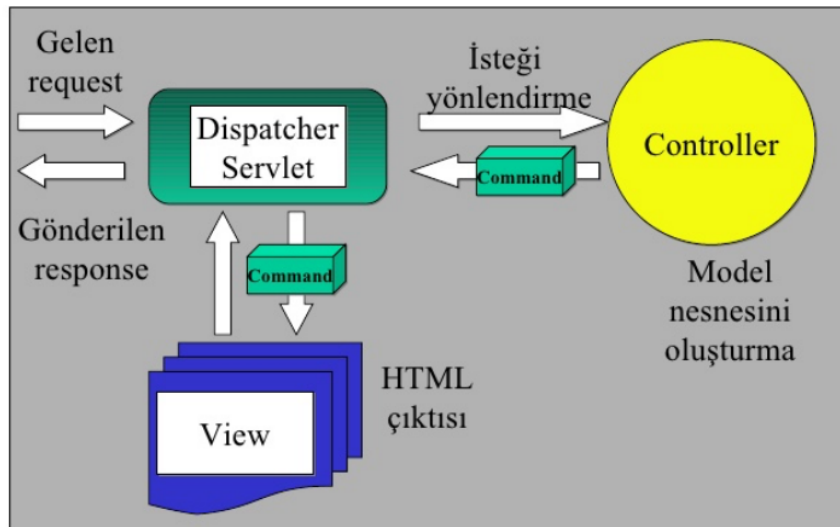
Spring MVC (model, view, control) is most used and developer favorite framework used in the real world for the application development.

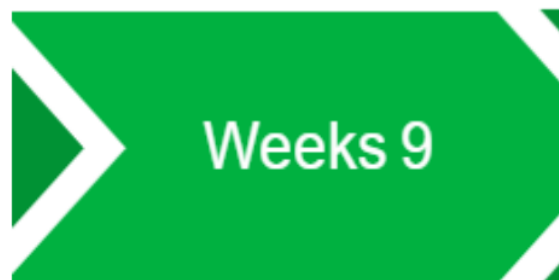
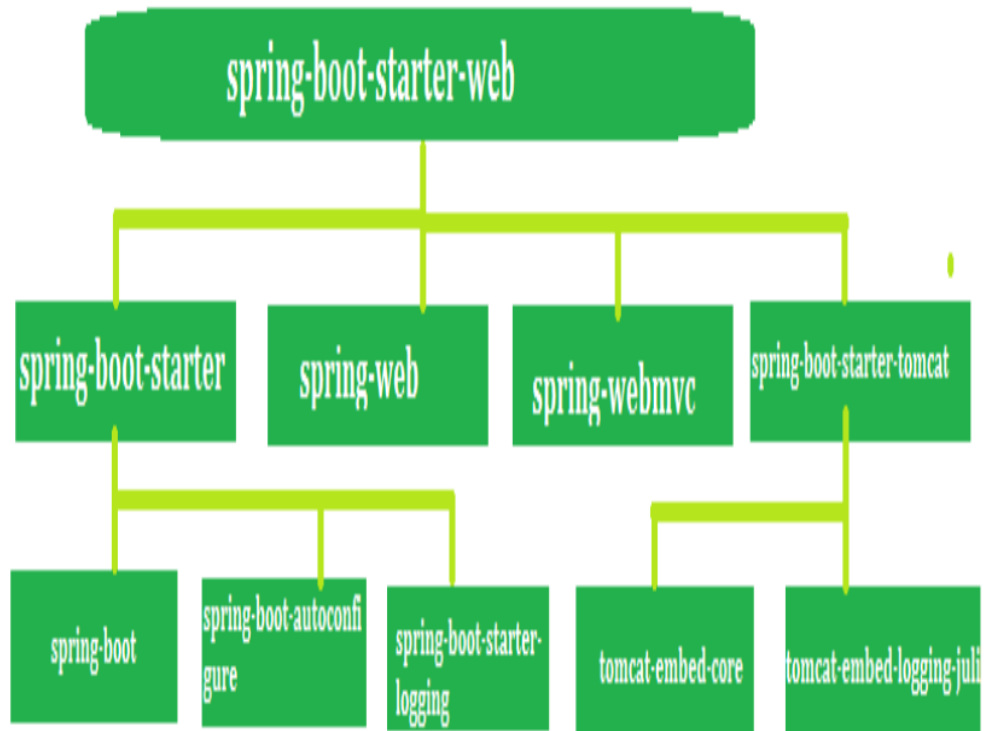
We learned the spring MVC form Udemey course provided by the Amazon during the internship.

Spring MVC comes under the advance framework of the java, now a days most of the application are being developed by the help of the spring MVC model.

Spring boot is another framework of the java comes under the advance part of the java, to work with the spring boot, we need to have some basic knowledge of the core java and spring core to work with the spring boot.

Spring MVC





Spring MVC and
Spring Boot

Week-10

Access type – 2 (Integrated capabilityTest)

After completing few technologies we had Integrated capability test, in which we combine our all knowledge what we learned in past weeks like Spring core, Maven, Junit, Mockito, Spring core, Spring boot, spring MVC and try to solve whole long coding question.

Integrated capability test is of 4 hours, which include all the things what we had learned till now.

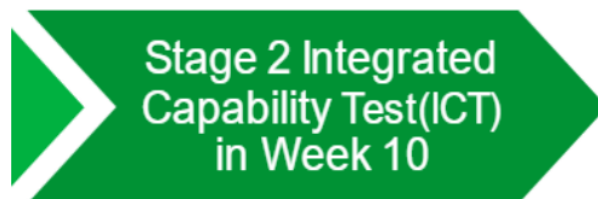
It consists of 1 coding question and require full knowledge of all the technologies and integrate that to solve the coding question.

It's a simple or medium size project, which we get as a question in the Integrated capability test within 4 hours.

It contains the huge waitage in the overall performance, the overall performance is calculates as the average of the assessment, Integrated capability test, Bussiness unit score, Project score.

We get two attempts to give the integrated capability test, if we get failed in first attempt then, we get second attempt to give integrated capability test.

And the second attempt is the last attempt to Integrated capability test because failing in the second attempt can lead to the termination of the offer said by the HR in the one session.



- Solve challenges using Combination of all skills in Stage 2

2.3 Stage 3 – Deep Niche Skills

Weeks 10,11:

- Spring REST with Spring
- Boot, Git, JQuery, Bootstrap

In this part of the time we learned about some advance application development technology like Spring REST with spring. Spring Rest is very highly demanding technologies today in the market, spring Rest is another very important java framework which is used for the application development.

Spring Rest is fully based on the Spring concept and is very helpful in the application development, especially java application development. Spring REST is most advanced framework used in the industry to develop the java application.

Spring Rest uses the rest feature also, which is also very important for the application development, the Rest is mostly used in the API and application programming interface is based on the http request and http reponse.

Spring Rest Api is widely used in the Information technology market to develop the application development, we can say we must know the basics of the spring and API to get started with the Spring API.

Spring Rest Api is enhanced API tool to use the API features with the spring, if somebody is creating the application which is the more modern looking website or application then, we can create that application or website with the help of the spring and spring rest Api tool.

Spring Rest Api tool reduces most the developer time and effort and make application development more easy to the developer .

This is the most important and crucial in the application development and make developer work easy and less time consuming.

Spring Rest Api is the tool which must be used in very application development because it is widely used in the Information technology.

Week 10, 11

- Spring REST with Spring
- Boot, Git, jQuery, Bootstrap

```
package com.javatpoint;
public class Product
{
    private int id;
    private String pname;
    private String batchno;
    private double price;
    private int noofproduct;
    //default constructor
    public Product()
    {
    }
    //constructor using fields
    public Product(int id, String pname, String batchno, double price, int noofproduct)
    {
        super();
        this.id = id;
        this.pname = pname;
        this.batchno = batchno;
        this.price = price;
        this.noofproduct = noofproduct;
    }
    //getters and setters
```

```
}  
//getters and setters  
public int getId()  
{  
    return id;  
}  
public void setId(int id)  
{  
    this.id = id;  
}  
public String getPname()  
{  
    return pname;  
}  
public void setName(String pname)  
{  
    this.pname = pname;  
}  
public String getBatchno()  
{  
    return batchno;  
}  
public void setBatchno(String batchno)  
{
```

```
{  
    return batchno;  
}  
public void setBatchno(String batchno)  
{  
    this.batchno = batchno;  
}  
public double getPrice()  
{  
    return price;  
}  
public void setPrice(double price)  
{  
    this.price = price;  
}  
public int getNoofproduct()  
{  
    return noofproduct;  
}  
public void setNoofproduct(int noofproduct)  
{  
    this.noofproduct = noofproduct;  
}  
}
```

ProductController.java

```

package com.javatpoint;
import java.util.List;
import org.springframework.beans.factory.annotation.Autowired;
import org.springframework.web.bind.annotation.GetMapping;
import org.springframework.web.bind.annotation.RestController;

@RestController
public class ProductController
{
    @Autowired
    private IProductService productService;
    //mapping the getProduct() method to /product
    @GetMapping(value = "/product")
    public List<Product> getProduct()
    {
        //finds all the products
        List<Product> products = productService.findAll();
        //returns the product list
        return products;
    }
}

```

IProductService.java

```

package com.javatpoint;
import java.util.List;
public interface IProductService
{
    List<Product> findAll();
}

```

ProductService.java

```

package com.javatpoint;
import java.util.ArrayList;
import java.util.List;
import org.springframework.stereotype.Service;

@Service
public class ProductService implements IProductService
{
    @Override
    public List<Product> findAll()
    {
        //creating an object of ArrayList
        ArrayList<Product> products = new ArrayList<Product>();
        //adding products to the List
        products.add(new Product(100, "Mobile", "CLK98123", 9000.00, 6));
        products.add(new Product(101, "Smart TV", "LGST09167", 60000.00, 3));
        products.add(new Product(102, "Washing Machine", "38753BK9", 9000.00, 7));
        products.add(new Product(103, "Laptop", "LHP29OCP", 24000.00, 1));
        products.add(new Product(104, "Air Conditioner", "ACLG66721", 30000.00, 5));
        products.add(new Product(105, "Refrigerator ", "12WP9087", 10000.00, 4));
        //returns a list of product
        return products;
    }
}

```

index.html

```
<!DOCTYPE html>
<html>
<head>
<title>Home page</title>
<meta charset="UTF-8">
<meta name="viewport" content="width=device-width, initial-scale=1.0">
</head>
<body>
<p>
<a href="product">Get all Products</a>
</p>
</body>
</html>
```

Spring boot is the modern tool for the development of the application on any platform on which we can host the application.

Spring boot also provide infrastructure support at the developer level and reduces most of the time and effort of the developer so, that developer can efficiently develop the application within specified time limit.

Git is the version control tool used for the application development by the developer. Developer can develop the application and can change the code from time to time as per the time when there is need for the modification by the customer or the by the modern time, Git is very famous tool and widely used tool not only in the student community but, also in the developer community for the enhancement of the application and better development of the application.

Jquery is another javascript library used widely by the developer in the information technology world for the development of the application for the real purpose. JQuery makes HTML page more responsive and good looking because it support many features which is not there in the previous ones. JQuery is most widely used and important and crucial tool for the development of the application which contains the HTML and CSS coding.

Bootstrap is the another library used in the development of the application which uses the HTML and CSS codes with Javascript codes. Bootstrap contains open source SVG icon library, which is the most used library now a days for the development of the application which contains the HTML and CSS code with the javascript code.

HTML Code

```
<div id="animateMe">
  Watch me be animated!
</div>
<!-- One button for each fading command -->
<input type="button" id="btnAnimate" value="Animate It">
<input type="button" id="btnAnimateBack" value="Animate It Back">
```

CSS Code

```
div#animateMe {
  left: 0;
  top: 0;
  position: relative;
  width: 300px;
  height: 100px;
  border: 1px solid black;
  background-color: teal;
}
```

CSS Code

```
div#animateMe {
  left: 0;
  top: 0;
  position: relative;
  width: 300px;
  height: 100px;
  border: 1px solid black;
  background-color: teal;
}
```

JavaScript Code

```
$('#btnAnimate').click(function() {
  $('#animateMe').animate({
    'left': '300px',
    'top': '200px',
    'border-width': '8px'
  }, 1000);
});
$('#btnAnimateBack').click(function() {
  $('#animateMe').animate({
    'left': '0',
    'top': '0',
    'border-width': '1px'
  }, 1000);
});
```

Weeks 12,13:

- Bootstrap
- Angular/React
- Microservices
- Cloud(AWS)
- Splunk



Bootstrap is the another library used in the development of the application which uses the HTML and CSS codes with Javascript codes. Bootstrap contains open source SVG icon library, which is the most used library now a days for the development of the application which contains the HTML and CSS code with the javascript code.

Angular/React are advance Javascript framework widely used top product based company like google or Microsoft for the development of the product.

```

import React from 'react';

class Person extends React.Component {
  constructor(props) {
    super(props);
    this.state = {
      age: 0
    };
    this.incrementAge = this.incrementAge.bind(this);
  }

  incrementAge() {
    this.setState({
      age: this.state.age + 1;
    });
  }

  render() {
    return (
      <div>
        <label>My age is: {this.state.age}</label>
        <button onClick={this.incrementAge}>Grow me older !!</button>
      </div>
    );
  }
}

export default Person;

```

```

import React from 'react';

class App extends React.Component {
  constructor(props) {
    super(props);

    // We declare the state as shown below

    this.state = {
      x: "This is x from state",
      y: "This is y from state"
    };
  }

  render() {
    return (
      <div>
        <h1>{this.state.x}</h1>
        <h2>{this.state.y}</h2>
      </div>
    );
  }
}

export default App;

```

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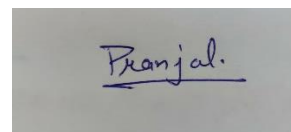
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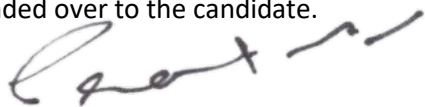


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