INTERNSHIP PROGRESS REPORT-2

Submitted in the partial fulfilment for the award of the degree of

BACHELOR OF ENGINEERING

IN

Computer Science and Business System

Submitted by:

Rishabh Anand

19BCS4525

AT

HighRadius

Under the Supervision of:

HighRadius Supervisors

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

APEX INSTIUE OF TECHNOLOGY

CHANDIGARH UNIVERSITY, GHARUAN,

MOHALI - 140413, PUNJAB

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MONTHLY INTERNSHIP REPORT

A. Internship Contact Information

Student Name	Rishabh Anand
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Internship Supervisor	
Internship Supervisor Phone	
Internship Supervisor Email	
Report period (start date)	21th Feb 2022
Report period (end date)	24th march 2022

B. Distribution of hours:

Orientation -**3 Hr**

Observing -**1 Hr**

Meetings (e.g. staffing, working with the team, etc) -**NA**

Lectures, Seminars, Conferences-**1 Hr daily**

Assessment**- 30 min** (Every time when a particular topic completed)

Planning (activity analysis, goals and objectives, etc)- **30 min Daily**

Studying/Researching-**One and a half hour daily**

C. Implementation (in *hours* which so ever is applicable. Otherwise mention Not Applicable):

a. Leadership-**NA**

b. Counselling-**NA**

c. Supervision- **30 min Daily**

d. Evaluation-**NA**

e. Documentation-**NA**

f. Discharge/Transition Plans-**NA**

g. Other (Please specify)-**NA**

Total clock hours during this report period-**50 Hr**

About the Company

HighRadius is a Fintech enterprise Software-as-a-Service (SaaS) company that leverages Artificial Intelligence-based Autonomous Systems to help companies automate Accounts Receivable and Treasury processes. The HighRadius® Integrated Receivables platform reduces cycle times in your order-to-cash process by automating receivables and payments processes across credit, electronic billing and payment processing, cash application, deductions, and collections.

Autonomous Software is data-driven software that continuously morphs its behavior to the ever-changing underlying domain transactional data. It brings modern digital transformation capabilities like Artificial Intelligence, Robotic Process Automation, Natural Language Processing and Connected Workspaces as out-of-the-box features for the finance & accounting domain.

Finance business stakeholders have been led to believe that they have only two choices: pick an application software vendor that digitizes a paper or Excel-based process to an electronic system of record, or, choose a middleware platform for AI or RPA to build and maintain in-house, domain-specific capabilities. In contrast, HighRadius Autonomous Software combines the best of both worlds to deliver measurable business outcomes such as DSO reduction, working capital optimization, bad-debt reduction, reduce month close timelines and improve productivity in under six months.

Their Customers

Our products provide value to a wide range of customers and are especially relevant to industries like consumer products, manufacturing, distribution, energy, and others that sell products or provide a service to other businesses.

Our customers range from some of the largest global corporations including more than 200+ Global 2000 companies as well as mid-size enterprises that don't have the IT resources to consolidate on an ERP platform but still want to automate and streamline their receivables and treasury processes.

Their Values-

Efficiency and productivity enhancements are central to the value HighRadius provides to our customers.Regardless of what ERP, Accounts Receivable or Treasury Management system you are using, our products automate manually-intensive tasks, streamline communication, and allow standardization of processes to drive best practices into your receivables and treasury processes.

We empower our customers to be able to work more accurately and efficiently, forecast and manage cash, get paid faster, and improve key metrics like Days Sales Outstanding (DSO) and improve working capital availability.

Introduction

The second phase of Internship started at 21th February and will be ending at 13th April

The whole internship will be in virtual mode only.

We have five main parts to be covered during this internship.

They are

1.Machine Learning

2. Java

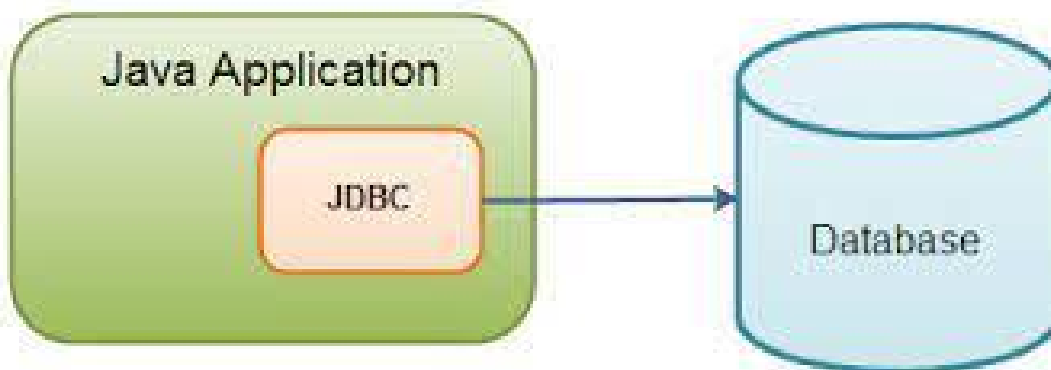## 3. HTML and CSS

4. Java Script and React JS
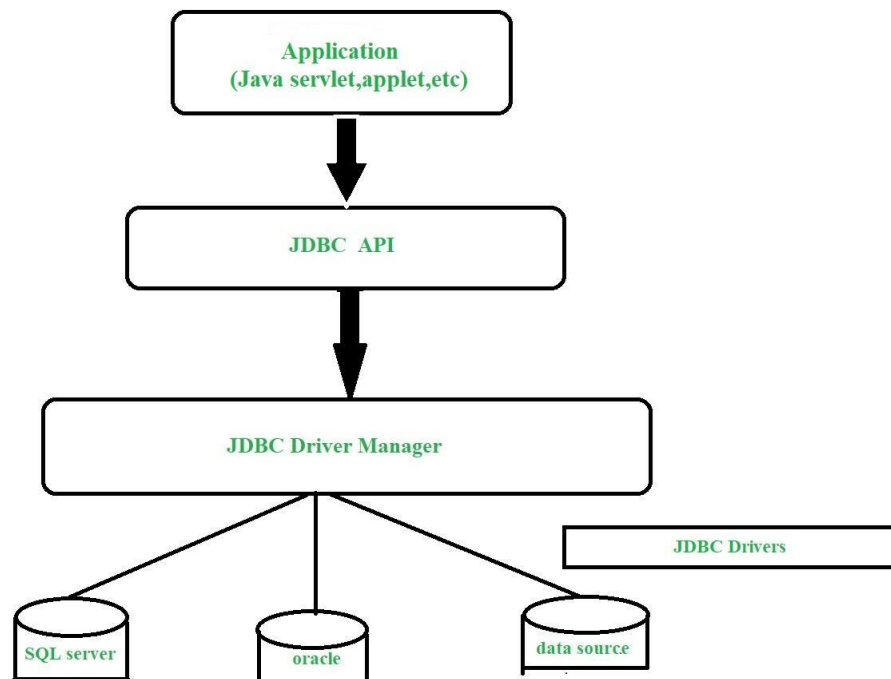

5. Web App Project

Accomplishments

After the machine learning part we have learnt the following concepts java, SQL, JDBC, servlets, html, CSS, java script

Introduction to java programming

1. Able to perform basic coding required for JDBC in java.
2. Able to perform java coding required for servlets using JDBC process in web development
3. Learned about SQL language and how to create databases with help of SQL log tool and performed our query's.
4. Learned how to do connect the database to server and learnt how store the data in the database
5. Learnt how to map the servlets to the web server using eclipse ide
6. By all the above concepts I was able to complete the second part of the project

Work Performed


```
        Application
   (Java servlet,applet,etc)
              |
              v
          JDBC  API
              |
              v
       JDBC Driver Manager
                                    JDBC Drivers

   SQL server      oracle       data source
```

Summary of activities

Our activities were like preparing for the frontend part of the project and create the UI for the website using react.js for this first we have learnt the JDBC(java database connectivity process) and then we learnt how to connect SQL database to the java server and how to store the data in database from the server using servlet process

I'll brief some of the important process in the activity till now.

1. Basic and Intermediate understanding of java

When we consider a Java program, it can be defined as a collection of objects that communicate via invoking each other's methods. Let us now briefly look into what do class, object, methods, and instance variables mean.

- **Object** − Objects have states and behaviors. Example: A dog has states - color, name, breed as well as behavior such as wagging their tail, barking, eating. An object is an instance of a class.

- **Class** − A class can be defined as a template/blueprint that describes the behavior/state that the object of its type supports.

- **Methods** − A method is basically a behavior. A class can contain many methods. It is in methods where the logics are written, data is manipulated and all the actions are executed.

- **Instance Variables** − Each object has its unique set of instance variables. An object's state is created by the values assigned to these instance variables.

Java is an Object-Oriented Language. As a language that has the Object-Oriented feature, Java supports the following fundamental concepts −

Polymorphism

Inheritance

Encapsulation

Abstraction

Classes

Objects

Instance

Method

Message Passing

In this chapter, we will look into the concepts - Classes and Objects

Object − Objects have states and behaviors. Example: A dog has states - colour, name, breed as well as behaviors – wagging the tail, barking, eating. An object is an instance of a class.

Class − A class can be defined as a template/blueprint that describes the behavior/state that the object of its type support.

Features of Java

2. **Clear understanding of java basics, need to be familiar with arrays, functions, clear understanding of java parameters and SQL , knowledge of how to create the databases and tables etc.**

Java Arrays

Normally, an array is a collection of similar type of elements which has contiguous memory location.

Java array is an object which contains elements of a similar data type. Additionally, The elements of an array are stored in a contiguous memory location. It is a data structure where we store similar elements. We can store only a fixed set of elements in a Java array.
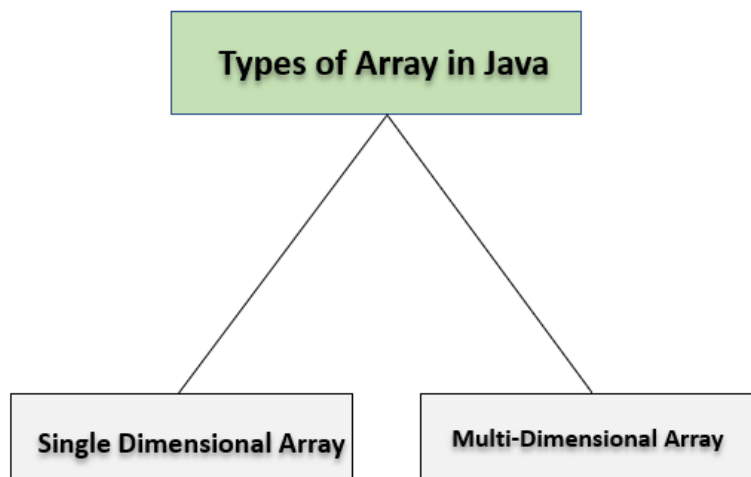
Array in Java is index-based, the first element of the array is stored at the 0th index, 2nd element is stored on 1st index and so on.

Types of Array in java

There are two types of array.

Single Dimensional Array

Multidimensional Array

www.educba.com

3.Eclipse and work setup and learned how to create the java web development project using eclipse IDE

5 Steps to Install Eclipse

1.Download the Eclipse Installer

2. Start the Eclipse Installer executable

3. Select the package to install

4. Select your installation folder

5. Launch Eclipse

1.

Understanding JDBC

JDBC stands for Java Database Connectivity. JDBC is a Java API to connect and execute the query with the database. It is a part of Java SE (Java Standard Edition). JDBC API uses JDBC drivers to connect with the database. There are four types of JDBC drivers:

- o JDBC-ODBC Bridge Driver,

- o Native Driver,

- o Network Protocol Driver, and

- o Thin Driver

We can use JDBC API to access tabular data stored in any relational database. By the help of JDBC API, we can save, update, delete and fetch data from the database. It is like Open Database Connectivity (ODBC) provided by Microsoft.

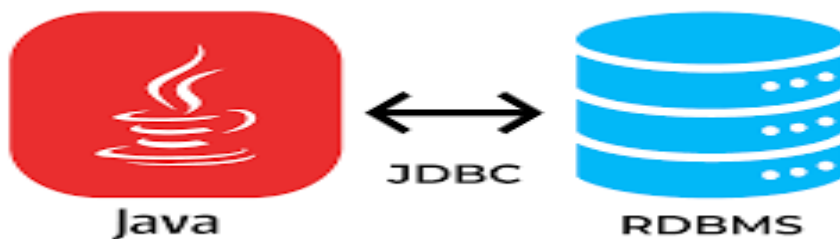list of popular *interfaces* of JDBC API are given below

- o Driver interface

- o Connection interface

- o Statement interface

- o Prepared Statement interface

- o Callable Statement interface

- o Result Set interface

- o Result Set Meta Data interface

- o Data base Meta Data interface

- o Row Set interface

Before JDBC, ODBC API was the database API to connect and execute the query with the database. But, ODBC API uses ODBC driver which is written in C language (i.e. platform dependent and unsecured). That is why Java has defined its own API (JDBC API) that uses JDBC drivers (written in Java language).

We can use JDBC API to handle database using Java program and can perform the following activities:

1. Connect to the database

2. Execute queries and update statements to the database

3. Retrieve the result received from the database.

4. Learnt how to use of SQLYOG tool for SQL and learnt the basics of SQL databases

Getting Started:

Download SQL yog from Download Page. Execute it and follow the steps to install the program. The installation and registration are possible with a silent installation.

Once you start SQL yog, you will get a figure as shown below. The connection window allows you to connect to the MySQL server

1. SQL can execute queries against a database

2. SQL can retrieve data from a database

3. SQL can insert records in a database

4. SQL can update records in a database

5. SQL can delete records from a database

6.SQL can create new databases

7.SQL can create new tables in a database

8.SQL can create stored procedures in a database

9.SQL can create views in a database

10.SQL can set permissions on tables, procedures, and views

RDBMS

RDBMS stands for Relational Database Management System .RDBMS is the basis for SQL, and for all modern database systems such as MS SQL Server, IBM DB2, Oracle, MySQL, and Microsoft Access. The data in RDBMS is stored in database objects called tables. A table is a collection of related data entries and it consists of columns and rows.
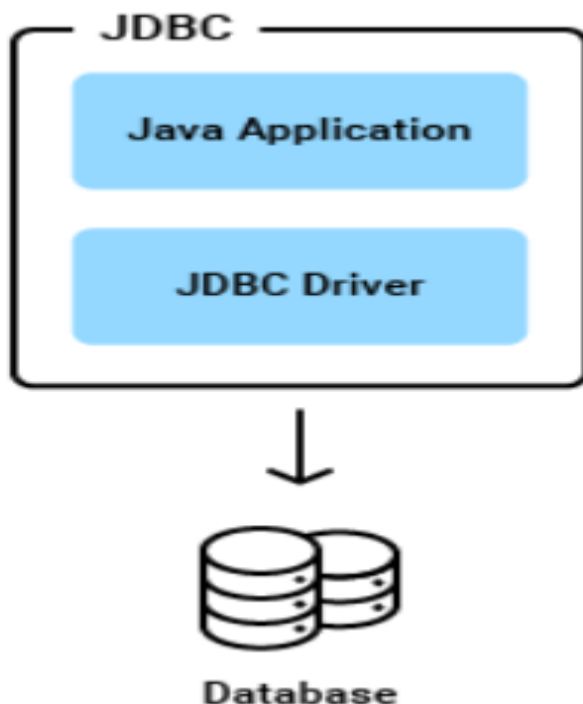
5. JDBC WORKING

JDBC makes it possible to do establish a connection with a data source, send queries and update statements, and process the results.

Simply, JDBC makes it possible to do the following things within a Java application:

- Establish a connection with a data source
- Send queries and update statements to the data source
- Process the results

The following figure shows the components of the JDBC model.

The Java application calls JDBC classes and interfaces to submit SQL statements and retrieve results.

The JDBC API is implemented through the JDBC driver. The JDBC Driver is a set of classes that implement the JDBC interfaces to process JDBC calls and return result sets to a Java application. The database (or data store) stores the data retrieved by the application using the JDBC Driver.

The main objects of the JDBC API include:

A Data Source object is used to establish connections. Although the Driver Manager can also be used to establish a connection, connecting through a Data Source object is the preferred method.

A Connection object controls the connection to the database. An application can alter the behavior of a connection by invoking the methods associated with this object. An application uses the connection object to create statements.

Statement, Prepared Statement, and Callable Statement objects are used for executing SQL statements. A Prepared Statement object is used when an application plans to reuse a statement multiple times. The application prepares the SQL it plans to use. Once prepared, the application can specify values for parameters in the prepared SQL statement. The statement can be executed multiple times with different parameter values specified for each execution. A Callable Statement is used to call stored procedures that return values. The Callable Statement has methods for retrieving the return values of the stored procedure.

A Result Set object contains the results of a query. A Result Set is returned to an application when a SQL query is executed by a statement object. The Result Set object provides methods for iterating through the results of the query.

We came up with a series of tutorials to help you get started with our JDBC Drivers:

1. Connecting to a data source using a JDBC driver

2. Extracting metadata of a data source via JDBC driver

6. Servlets

Servlets are Java classes which service HTTP requests and implement the **javax.servlet.Servlet** interface. Web application developers typically write servlets that extend javax.servlet.http.HttpServlet, an abstract class that implements the Servlet interface and is specially designed to handle HTTP requests.

SAMPLE SOURCE CODE FOR SERVLETS

```java
// Import required java libraries
import java.io.*;
import javax.servlet.*;
import javax.servlet.http.*;

// Extend HttpServlet class
public class HelloWorld extends HttpServlet {

   private String message;

   public void init() throws ServletException {
      // Do required initialization
      message = "Hello World";
   }

   public void doGet(HttpServletRequest request, HttpServletResponse response)
      throws ServletException, IOException {

      // Set response content type
      response.setContentType("text/html");

      // Actual logic goes here.
      PrintWriter out = response.getWriter();
      out.println("<h1>" + message + "</h1>");
   }

   public void destroy() {
      // do nothing.
   }
}
```

Servlet Deployment

By default, a servlet application is located at the path
<Tomcat-installationdirectory>/webapps/ROOT and the class file would reside in
<Tomcat-installationdirectory>/webapps/ROOT/WEB-INF/classes.

If you have a fully qualified class name of com.myorg.MyServlet, then this servlet class must be located in WEB-INF/classes/com/myorg/MyServlet.class.

For now, let us copy HelloWorld.class into

<Tomcat-installationdirectory>/webapps/ROOT/WEB-INF/classes and create following entries in

web.xml file located in <Tomcat-installation-directory>/webapps/ROOT/WEB-INF/

7.JSP AND WHY JSP OVER SERVLETS

JSP technology is used to create web application just like Servlet technology. It can be thought of as an extension to Servlet because it provides more functionality than servlet such as expression language, JSTL, etc.

A JSP page consists of HTML tags and JSP tags. The JSP pages are easier to maintain than Servlet

because we can separate designing and development. It provides some additional features such as

Expression Language, Custom Tags, etc

Advantages of JSP over Servlet

There are many advantages of JSP over the Servlet. They are as follows:
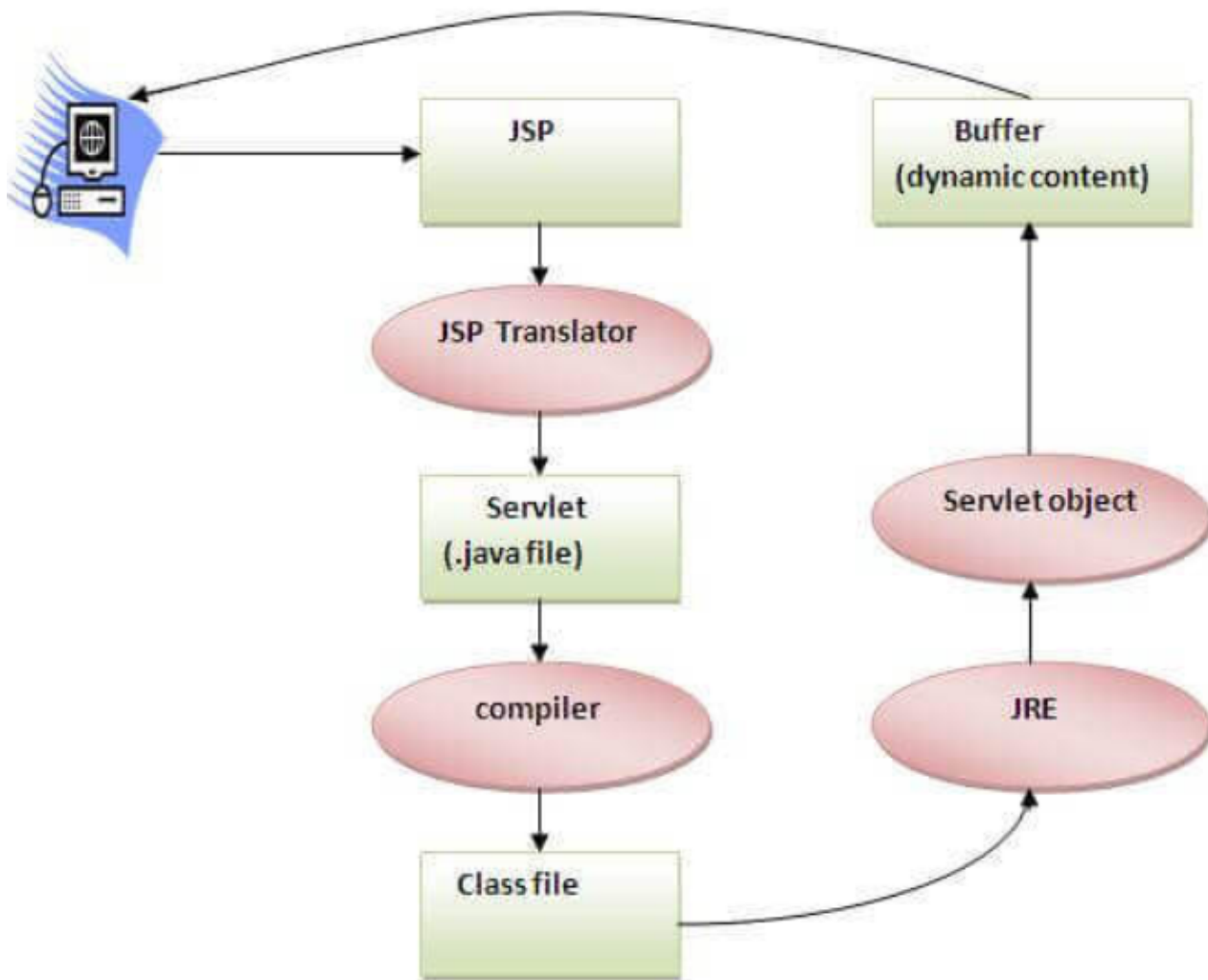
1)Extension to Servlet

JSP technology is the extension to Servlet technology. We can use all the features of the Servlet in JSP. In addition to, we can use implicit objects, predefined tags, expression language and Custom tags in JSP, that makes JSP development easy.

2) Easy to maintain

JSP can be easily managed because we can easily separate our business logic with presentation logic. In Servlet technology, we mix our business logic with the presentation logic.
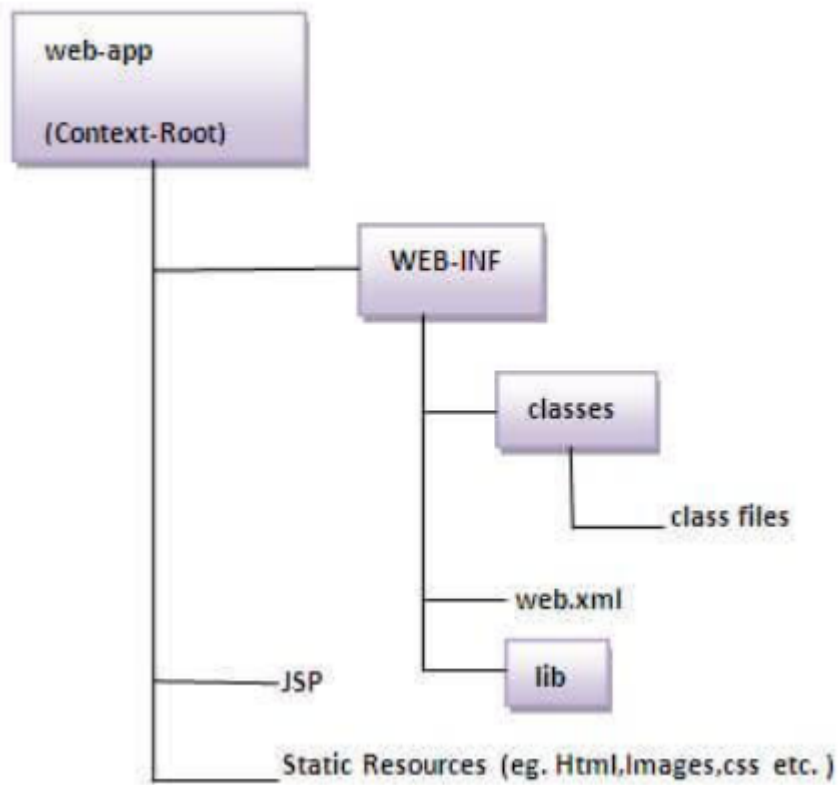
3) Fast Development: No need to recompile and redeploy

If JSP page is modified, we don't need to recompile and redeploy the project. The Servlet code needs to be updated and recompiled if we have to change the look and feel of the application.

Follow the following steps to execute this JSP page:

- o Start the server

- o Put the JSP file in a folder and deploy on the server

- o Visit the browser by the URL http://localhost:portno/contextRoot/jspfile

8.WE HAVE DONE ONE WEB DEVELOPMENT PROJECT EXAMPLE WITH THE SERVLETS AND SQL AND JDBC

The process to connect database to server using JDBC in the following steps

STEP 1:-

Open a Command Prompt and write this code

C:\>

C:\>cd Program Files\MySQL\bin

C:\Program Files\MySQL\bin>

STEP 2:-

Login to database

C:\Program Files\MySQL\bin>mysql -u root -p

Enter password: ********

mysql>

STEP 3:-

Create the table Employee in TEST database

mysql> use TEST;

mysql> create table Employees (

   id int not null,

   age int not null,

   first varchar (255),

   last varchar (255)

);

Query OK, 0 rows affected (0.08 sec)
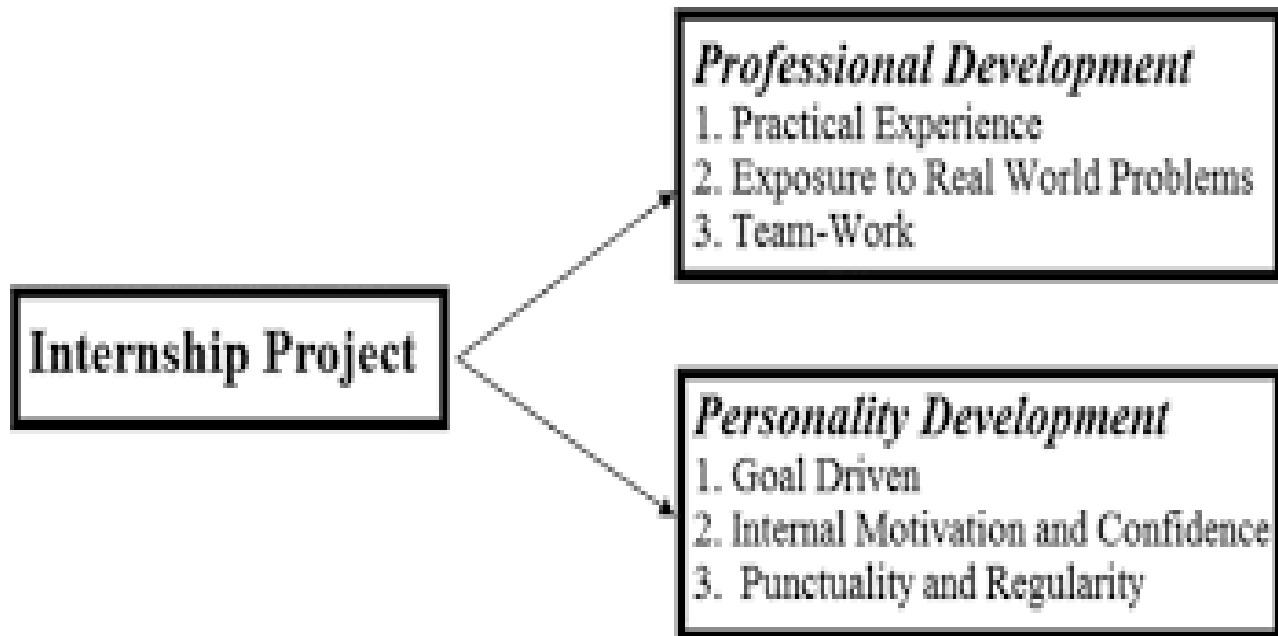
mysql>

Step 4:-

Accessing a Database

Changes in job scope over the internship

Well the competition is very high in on campus too and when I have completed the second part of the project, I am pretty sure at that time that I can get the paid internship in the java part.

Relationship to my Academic Experience

An internship during college studies can help to enhance quality of higher education and to improve skills & competencies amongst students. It helps to fill the gap between the theoretical learning at class room and practical application at work place.

An internship during college studies can help to enhance quality of higher education and to improve skills & competencies amongst students. It helps to fill the gap between the theoretical learning at class room and practical application at work place. It is also seen that the student undergoing internships while their 3 years degree course are not able to perform better in their regular exams because of time constraints. On the other hand, Internships also help them to achieve higher professional competencies and excellence in their field of interest and so that they can perform better in their future job with full potential knowledge.

Professional Development
1. Practical Experience
2. Exposure to Real World Problems
3. Team-Work

Internship Project

Personality Development
1. Goal Driven
2. Internal Motivation and Confidence
3. Punctuality and Regularity

Skills you learned in classes that will be most valuable on the job.

And some of those skills are..

- Communication skills. These include verbal, nonverbal and written communication skills.

- Problem-solving skills.

- Teamwork skills.

- Social media and computer skills.

- Learning skills.

- Personal management and organization skills.

- Interpersonal skills.

- Take a class to improve computer and social media skills.

College students probably don't realize it at the time, but the training they receive in college goes far beyond what they learn in the classroom. Interacting with professors, participating in a class project, and joining on-campus organizations are just a few of the learning opportunities gained in college that transfer to the workplace and can help you find a job.

The most difficult situation I encountered during this month of internship.

At first understanding of the java language is hard for me because I don't know anything about java. And it took time to understand the java and I felt difficulty in it because the speed of the moderators is fast .

And there some most common difficulties faced in any internship.

- Problem 1: Unnoticed Work. ...

- Problem 2: Uncooperative Mentor. ...

- Problem 3: Issues with Time Management / Self-Management. ...

- Problem 4: Allotment of trivial work. ...

- Problem 5: Inadequate Compensation. ...

- Problem 6: Hesitant to Ask Questions. ...

- Problem7: Competitive Co-interns.

The things/topics I need to learn more about in the classroom to become more effective on the job.

- Need to focus more on basics of some topic.
- How to Respond to Failure

  It could be a failed project, test, a course, or an unsuccessful interview for an internship but how you respond, analyse, learn, improve, and move forward is a crucial skill at every level of one's career. Successfully moving forward after failure shows resilience-a skill every employee needs and every employer covets.

- How to Utilize Available Resources

  Remember when you were a college freshman, and you needed to find out where the library was, how to work with your resident advisor, how to understand the role of a teacher's assistant, the best way to approach a professor (after class, during office hours, via email), or when to reach out to academic advisors or the college career services center?

- How to Step Outside Your Comfort Zone

  a person new to a job is joining a group of people they have never met before and must now collaborate with them to succeed. "Join a club made up of people you don't know, volunteer to take on a leadership role in an organization or take a course elective on a subject you know nothing about,". "True personal and professional growth begins where your comfort zone ends. Companies look for those with this courage."

- Networking skills

  Most students come to a residential college leaving their support network—family, high school friends, teammates—behind. They need to rebuild their support system with a new network of friends, professors, TAs, and community members.

- Communication Skills

  College students are constantly learning how to write professionally, says Wagner. They write emails to professors, carefully crafting them—just like they will for managers, clients, customers, prospects, and coworkers. Students participate in class discussions—like team meetings in the workplace. And they participate in group projects and are held responsible for their role and actions.

- Critical Thinking skills.

  Throughout their college career, students are continuously immersed in project work and discussions, asked to write papers, and engage in live classroom scenarios where they must analyse, use logic, and critical thinking skills to find a solution. Employers look for employees who can use logic, analytical skills, and critically think through problems to get results.

  "Being able to identify and think logically through a problem objectively is one of the more important skills a student must learn to be successful in school as well as in their career,"

14 THINGS
Every Student Needs

- self-knowledge
- inspiring models– and modeling
- learning strategies
- feedback, not judgment
- creative spaces and tools

- ideas
- an audience
- a champion
- a chance to practice
- as many chances as it takes

- to play
- self-efficacy
- to read and write
- approval that isn't always contingent on "success."

teachthought.com

- Ethics and Responsibility

  With exposure to course and institution rules, such as attendance policies or conduct policies on behaviour and plagiarism, college students learn to understand and apply ethical and professional principles of conduct.

  "A person's character and ethical behaviour can follow them, and it is something that is very important to an employer as the employee is a reflection or extension of the company,"

- Interacting With Diverse Backgrounds

  Most colleges and universities are filled with students from different countries, ethnic backgrounds, religions, and cultures. Working in group projects, being in campus organizations, and being a part of campus life with others who are similar but different, is a great learning experience that applies to being part of a diverse workforce.

- Information Literacy

  The ability to locate, evaluate, and effectively use information in the proper context and situation is critical in a world where information is easily accessible and moves very quickly. This is the essential part of being a successful student as it is the heart of how they ultimately showcase their understanding of key concepts and material through papers, discussions, or presentations, says Wagner. In the workplace, information and knowledge are used for reports, presentations, white papers, sales collateral, marketing material, and more.

- Digital Fluency

  By engaging in online classes and platforms, being exposed to different software, and through the use of various course materials (video, e-books, virtual labs, and more), college students are well trained in the digital world.

  Employers look for employees who know how to navigate and utilize technology and how to use it appropriately in the context of the situation. Every college student learns, uses, and applies technology just like every workplace requires the ability to use a wide variety of technological resources. Digital fluency is a must.

Plans for the Rest of the Semester, stating what you still plan to do and the estimated hours required during the rest of the semester.

My plans are…

- Working and Acting Like a Full-Time Employee
    - You will participate, engage, and embody the role of a full-time employee. Even if you are an intern, show your employer and fellow employees your skills and abilities through projects, leadership opportunities and activities.

- Little or No "Hand-holding"
    - It will be your responsibility to develop relationships with your peers and colleagues. They will likely provide help and advice if you seek it, but you must be proactive and polite. Don't wait for them to come to you.

- Office Etiquette
    - You should always be mindful of your actions.Internships can be thought of as an "ongoing interview," as your professionalism will be constantly evaluated by the company. You will need to understand and abide by the rules and policies of your company.

- Embracing Teamwork
    - It will be in your best interest to form good relationships with your colleagues and peers. Chances are you will be collaborating on projects and activities.

- Keep a Record of Tasks Completed
    - This will prove useful when updating your resume. Ask for feedback on your projects and note improvements when necessary.

Leaving a Good Impression

- Even if you did not enjoy your overall experience during your internship, you should still make the effort to end your time with the company on a positive note.
- If you are interested in a full-time position, let your supervisor know! Ask for advice for the best ways to pursue the opportunity.
- Send proper "goodbye" emails to all those you worked with on your last day. Be sure to provide your contact information to keep in touch and connect.
- Transition incomplete projects by documenting your process and debriefing full-time employees.
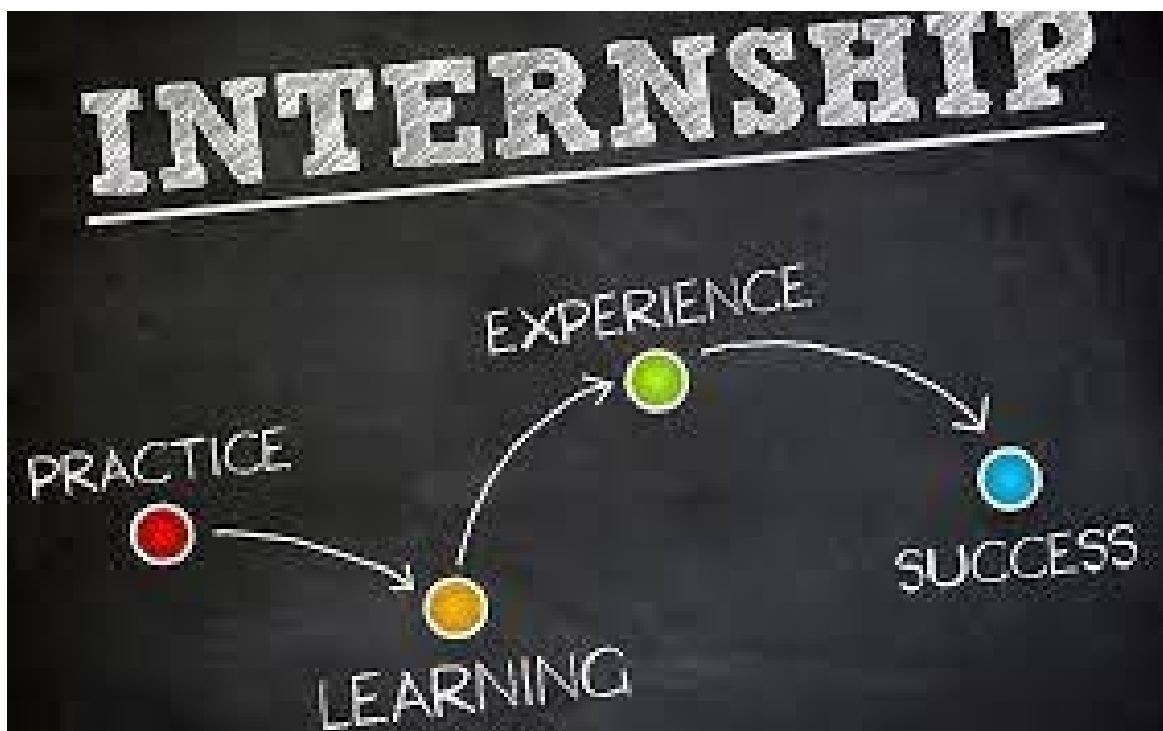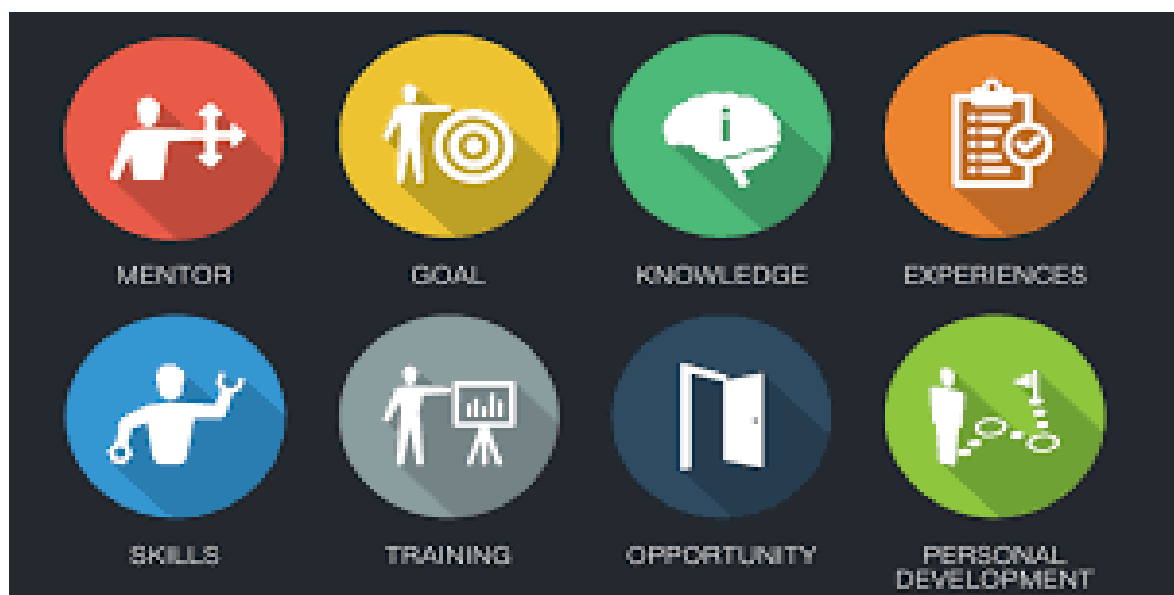
Conclusion

Value of the internship and its impact (if any) on your future career choice.

- To sum up, internships play a crucial role in shaping one's career. It not only helps undergraduates and graduates gain real exposure to working environments but also helps them develop the necessary skills required to stand out in a saturated job market.

- An internship provides the work experience that helps students put their education into practice, develop their leadership skills and give them a competitive advantage as they pursue a permanent position.

- Completing an internship allows students to gain hands-on experience in the field that interests them. This type of experience will show students whether or not the career path is a good fit. In addition, internships provide students with the opportunity to build connections with individuals in the field.

- One of the most important things you can gain from an internship is newfound knowledge. This can include knowing how to fulfil tasks that are relevant to your desired career path and sharpening the skills that you already possess.

- A great internship provides the knowledge and skills required to become successful in a specific career field. The most amazing internship experiences are those that prepare students for the work they hope to do after graduating from college.

- Strong interpersonal skills.

- Ability to multi-task.

- Taking constructive criticism well.

- Strong writing skills.

- Punctuality.

- Effective communication.

Impacts

- During your internship you can acquire new skills and abilities which can improve yourself as a young professional, and furthermore enhance your resume. The more experience you acquire, the better you position yourself for success in landing a job.

- Employers in today's labour market rely heavily on resumes that illustrate a relevant work history, whether that's from internships, volunteer work, or actual job experience.

- A practical work background carries a major significance when attempting to enter the job market. It's all about competition.

- Not only are businesses competing against each other for a competitive advantage, but people are also competing to land that coveted position in a company.

- Even your buddy who graduated with you in college has become your competition.

- An Internship Provides Real Life Experience and Exposure

If you're lucky enough to snag a beneficial internship, it can be remarkably valuable towards your career.

An internship enables you to gain first-hand exposure of working in the real world.

It also allows students to harness the skill, knowledge, and theoretical practice they learnt in university.

You can acquire endless amounts of education in your life, however, that knowledge doesn't always translate to the working life.

The great thing about internships is that it teaches young professionals about the specific industries and companies they are interested in.

- Get Connected and Develop Your Professional Network

Networking is an exchange of information between people, with the ultimate goal of establishing acquaintances and relationships to advance your professional career.

Sure, you can attend a networking event without doing an internship, but you would be limiting yourself.

Partaking in an internship allows you to establish deeper relationships than you normally would talking to a stranger one-on-one.

- Transition Into A Full-Time Position

Sometimes graduating from college and immediately jumping into a new job position has its disadvantages.

When you start out, you are the most vulnerable employee when it comes to layoffs.

If you have never worked full-time before, the change may be difficult or overwhelming. In a working environment, not every boss is tolerant of mistakes.

In an economy where you likely cannot afford to lose your job, not being able to quickly adapt can be devastating.