Frontend Web Developer

EPAM

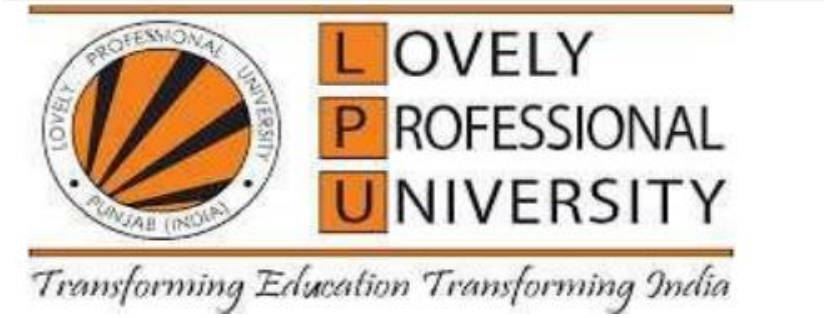
A Training Report

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

Bachelor of Technology

Computer Science and Engineering

(Machine Learning)



From 20-01- 2023 to Present

SUBMITTED BY

Name of the student: Ravi Pandey

Registration Number: 11910459

Signature of the student: Ravi Pandey

SUBMITTED TO

Name of the supervisor: Sandeep kaur

Designation:

Signature of the supervisor:

Student Declaration

To whom so ever it may concern

I, Ravi Pandey, 11910459, hereby declare that the work done by me on

"Fronted web Developer" from 20th Jan-2023 to Present, under the supervision of Sandeep kaur

Phagwara, Punjab, is a record of original work for the partial fulfilment of the requirements for the award of the degree Computer Science and Engineering.

Name Of Student(Registration Number)

Ravi Pandey 11910459

Ravi Pandey

Signature of the student Dated: 02-05-2023

Declaration by the supervisors

To whom so ever it may concern

This is to certify that Ravi Pandey 11910459 from Lovely Professional University,Phagwara, Punjab, has worked as a trainee in Epam on "Fronted Web Developer" under my supervision from 20t jan to Present. It is further stated that the work carried out by the student is a record of original work to the best of my knowledge for the partial-fulfillment of the requirements for the award of the B-TECH, Computer Science and Engineering.

Name of External Supervisor	Name of Internal Supervisor
	Sandeep Kaur
Human Resource Manager	Assistant Professor
Designation of the External Supervisor	Designation of the Internal Supervisor
Signature of the external Supervisor	Signature of the Internal Supervisor
Dated:	Dated:

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ACKNOWLEDGEMENT

I would sincerely like to thanks for the constructive criticism, support, encouragement valuable, comments, suggestions, timely helps and many innovative ideas given to me by my project supervisor Sandeep Kaur in carrying out project and the report.

I must convey my gratitude to Sandeep Kaur for giving me the constant source of Inspiration and help in preparing the project ,personally correcting my work and Providing encouragement throughout the project.

I also thanks all my faculty members for steering me through the tough as well as Easy phase of the project in result oriented manner with concern attention.

Undertaking by the student for submitting Final Certificate of six months/one year Internship/OJT

Reg No. 11910459 Student Name: Ravi Pandey

Program Name: B Tech, CSE Batch Year: 2019-2023

Course Code: P132 Mobile No: 8210506008

I understand that I have been provisionally allowed to appear for the ETP viva and I hereby declare that since I am on 6 months Internship/OJT, thus I shall submit my final certificate of 6 months Internship/OJT to university after completion of my Internship/OJT .

I am aware that in case, I am unable to submit the same till the above-mentioned date, my final evaluation of internship/OJT shall be discarded by the university, and I grade shall be awarded in the result.

Signature of Student **Signature of TPC-School** **Signature of HOS**

CHAPTER-1

INTRODUCTION OF COMPANY

1.1 About Epam

We can help you reimagine your business through a digital lens. Our software engineering heritage combined with our strategic business and innovation consulting, design thinking, and physical-digital capabilities provide real business value to our customers through human-centric innovation.

EPAM Systems Inc (EPAM Systems) is a technology company that provides software engineering services for software development and digital platforms. The company provides services in customer experience design, business consulting and technology innovation services.

EPAM Systems, Inc. is an American company that specializes in software engineering services, digital platform engineering, and digital product design, operating out of Newtown, Pennsylvania. EPAM is a founding member of the MACH Alliance.

1.2 Services

Adapt. Grow. Optimize. Disrupt.
Explore Our Client Work

Champion change through enterprise endurance.

The transformation journey means many things to many different enterprises. No matter your goals – whether it's growing and optimizing your business or disrupting the market – you need enterprise endurance on the path ahead. Partnering with you every step of the way or at any point in your journey, we help you anticipate disruption, thrive amid waves of change, reach breakthrough opportunities and drive revenue growth.

We're a global team of advisors, consultants, engineers, scientists and creatives. Our thinking lives in code, in products and in market. We don't just create blueprints, operating models and business plans – we bend the mold until we discover the best solutions for your most complex challenges.

Our Core Services

STRATEGY	ENGINEERING	CLOUD
CYBERSECURITY	DATA & ANALYTICS	CX+
ARTIFICIAL INTELLIGENCE		

1.3 Industries

Consumer

- Consumer Packaged Goods
- Travel & Hospitality
- Retail

Financial Services

- Wealth Management
- Retail & Commercial Banking

Telecom, Media & Entertainment

- Telecommunications
- Media & Entertainment
- Gaming
- Business Information & Publishing
- Sports

Software & Hi-Tec Life Sciences & Healthcare

Energy & Resources

Private Equity

Education

Leadership

EPAM's Executive Leadership and Senior Management bring decades of industry experience, a global perspective and a passion for achieving results.

Meet Our Leadership

EXECUTIVE MANAGEMENT BOARD OF DIRECTOR

Arkadiy Dobkin

Chairman of the Board, CEO & President

Jason Peterson

Chief Financial Officer, SVP & Treasurer

Balazs FejesBoris

President of EU & APAC Markets

Boris Shnayde

Co-Head of Global Business, SVP

Sergey Yezhkov

Co-Head Global Business, SVP

Elaina shekhter

Chief Marketing & Strategy Officer, SVP

Victor Dvorkin

Head of Global Delivery, SVP

Frank Burkitt

Global Head of Business & Strategy Consulting, SVP

Yuriy Goliyad

Head of Global Operations, SVP

Sam Rehman

Chief Information Security Officer, SVP

Strategy and execution. Delivered simultaneously.

We help clients set the right direction

Multidisciplinary teams in EPAM Continuum look at problems through specialty lenses – working with clients to frame the right problems to solve.

Then we deliver at speed and scale

We then support agile and iterative development teams within EPAM – ensuring ongoing improvements and enhancements along a multi-phase roadmap.

Strategize

When our teams come together, we orchestrate transformation that can outpace a rapidly evolving world. Our integrated consulting approach accelerates breakthrough ideas into meaningful impact.

HISTORY

- **1993**

  EPAM opens for business in Princeton, NJ, with three employees

- **1996**

  EPAM is chosen to help Colgate-Palmolive develop a Salesforce Automation solution and deploy it across its organizations in Europe and Latin America

- **1997**

  EPAM lands first major software product development client: SAP AG

- **2003**

  EPAM completes its first decade having built a foundation of delivering Software Products and Solutions for more than 200 independent software companies

- **2004**

  EPAM acquires Fathom Technologies, opening its first EU delivery center,beginning a multi-year journey of geographic and industry diversification

- **2012**

  EPAM is listed on the New York Stock Exchange (NYSE: EPAM)

- **2016**

  EPAM is named by Forbes as Top 25 Fastest Growing Public Tech Companies; extending its leadership position into Digital Product and Platform Engineering Services

- **2020**

  For the second year in a row, EPAM is ranked as the top IT services company on Fortune's 100 Fastest-Growing Companies list, jumping 50 positions to #21

- **2021**

  EPAM records its first billion-dollar revenue quarter and expands into over 40 countries and regions. The Company is included in the Forbes Global 2000 list and added to the S&P 500

- **2022**

  EPAM expands to more than 50 countries and EPAM Co is named a Top 20 fastest growing firm by Consulting Magazine

- **2023**

  EPAM Named as a Top IT Sourcing Vendor in the Nordics by Whitelane Researh

FEATURED

Corporate Responsibility

At EPAM, our approach to corporate responsibility is guided by three principles: operate ethically, protect the environment, and support our global and local communities.

MAKING A GLOBAL & LOCAL IMPACT

EPAM's nearly 30 year history is unique.

Engaging with our extended communities through education and innovation programs has always been a big part of our story. Everything we do starts with an EPAMer taking initiative and making their idea real by connecting with the experts in our organization. By sharing our creative talents and innovation with the communities around us, our employees are empowered to create a global network of impact, powered by local connections.

Since 1993, EPAM Systems, Inc. (NYSE: EPAM) has leveraged its advanced software engineering heritage to become the foremost global digital transformation services provider – leading the industry in digital and physical product development and digital platform engineering services. Through its innovative strategy; integrated advisory, consulting, and design capabilities; and unique "Engineering DNA," EPAM's globally deployed hybrid teams help make the future real for clients and communities around the world by powering better enterprise, education and health platforms that connect people, optimize experiences, and improve people's lives. In 2021, EPAM was added to the S&P 500 and included among the list of Forbes Global 2000 companies.

Selected by Newsweek as a 2021 and 2022 Most Loved Workplace, EPAM's global multi-disciplinary teams serve customers in more than 50 countries across six continents. As a recognized leader, EPAM is listed among the top 15 companies in Information Technology Services on the Fortune 1000 and ranked four times as the top IT services company on Fortune's 100 Fastest Growing Companies list. EPAM is also listed among Ad Age's top 25 World's Largest Agency Companies for three consecutive years, and Consulting Magazine named EPAM Continuum a top 20 Fastest Growing Firm.

CHAPTER-2

INTRODUCTION TO PROJECT

Throughout the period of the internship, we learned a lot of skills. Every skill that we learned or gained have different scopes and each skill plays a vital role in our lives. The scope of some skills that we learned are mentioned below:

- Teamwork
- Problem solving
- Co-ordination
- Interpersonal Skills
- Time Management

Training Undertaken:

Gradebook project

Grading digital book for the exam

1.Initial mocked data: An array of a list of students (array of objects). Each student (object) possesses at least the following properties (fields):

Id
Name
Ticket’s number
Ticket’s topic
Exam grade
Rating grade
Comments

2. Project structure

Header:

Information regarding exam is posted here. The title, date, professor's name, college, department, semester, group, etc. Main block:

Main block:

• Options for sorting & filtering:

  o Showing (all, passed, failed),

  o Sorting (by alphabetic order, asc & desc by final grade)

  o Filtering options (input by name) – optional.

• Table with the following data:

№	Name	Ticket's Number	Rating Grade	Exam Grade	Final Grade	Status	Details (optional)

final grade is calculated according to the formula: 0.6 exam grade + 0.4 rating grade, status is "passed" when the final grade exceeds 4, otherwise – "failed".

• Show statistics button

Statistics block:

• The number of students that received a certain grade (Example: "5" 3).

• The average / maximal / minimal grade

• The total number of students, etc.

• Hide option

Details block (optional):

The whole information regarding selected student that is given in corresponding object of array (at least ticket's topic is posted additionally).

Footer:

signature & date

3. Functional requirements

3.1. Once a user is entered the app, Header, Main block, and Footer should be shown, the Statistics block should be hidden and should be toggled by clicking the Show statistics button/ Hide button.

3.2. It should be possible to

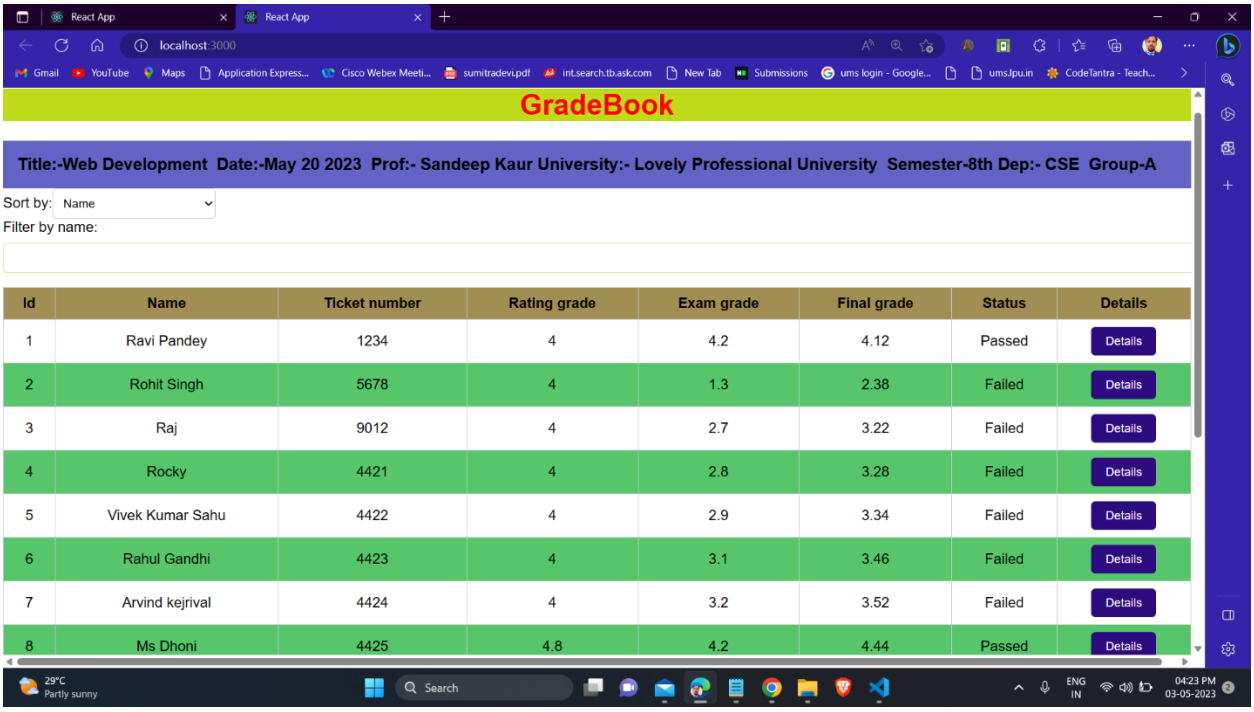
- show the whole and filtered list of students by choosing one of the options: all, passed, failed;
- sort students alphabetically and by final grade, sorting should work both in the direction of decreasing values and in the direction of increasing values;
- filter students by value that a user types in the input (optional)

3.3. By clicking on a certain row, its style changes (background color, for instance), besides name of the selected student should become uppercase.

3.4. (Optional) It should be an additional column in the table with details options for each row. By clicking on this option, a pop-up window containing Details block appears. While clicking on the details option the requirements of point 3.3. should not be obeyed (i.e., no changes in row style).

4. Technical requirements

An app should be implemented by using React or Angular frameworks. To create a necessary markup the CSS styles should be applied for every component that is in use.



CHAPTER-3

TECHNOLOGIES LEARNT

Frontend Web Developer

A front-end developer builds the front-end portion of websites and web applications—the part users see and interact with. A front-end developer creates websites and applications using web languages such as HTML, CSS, and JavaScript,React that allow users to access and interact with the site or app. The main responsibility of a Front-End Developer is the **User interface**.Simply put, create things that the user sees.

A front-end developer is a type of software developer who specializes in creating and designing the user interface (UI) and user experience (UX) of websites and web applications. The primary responsibility of a front-end developer is to ensure that the visual and interactive aspects of a website or application are user-friendly, aesthetically pleasing, and functionally efficient.

Front-end developers work with various technologies, tools, and languages, including:

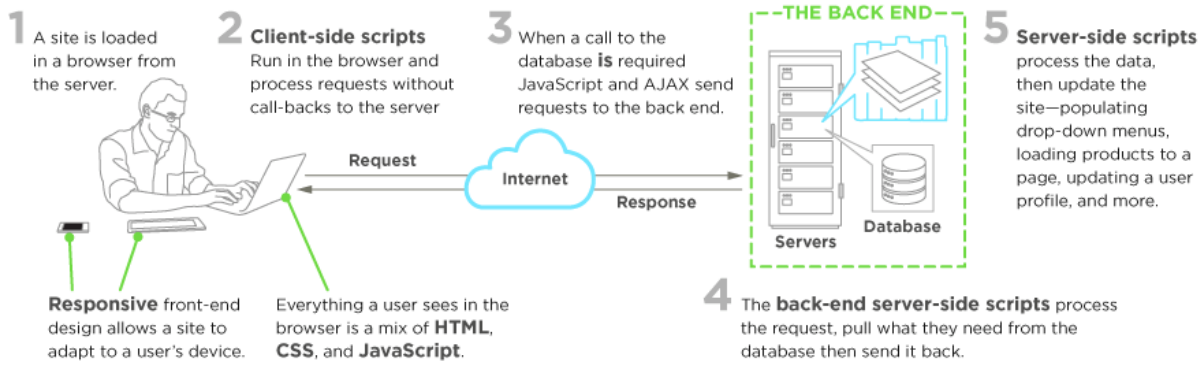
1. HTML (HyperText Markup Language): The standard markup language used to create the structure and layout of web pages.
2. CSS (Cascading Style Sheets): A stylesheet language used to control the presentation, formatting, and appearance of web pages, such as colors, fonts, and layout.
3. JavaScript: A programming language that allows developers to add interactivity, animations, and other dynamic elements to websites and web applications.

Front-end developers may also use libraries and frameworks, such as React, Angular, or Vue.js, to streamline their work and create more sophisticated and interactive UIs. Additionally, they often collaborate with back-end developers, who are responsible for the server-side logic

and data management, to ensure seamless integration between the front-end and back-end components of a web application or website.

HTML, CSS, & JavaScript:

A front-end developer architects and develops websites and applications using web technologies (i.e.,HTML,CSS, DOM, and JAVASCRIPT), which run on the Open Web Platform or act as compilation input for non-web platform environments (i.e.,React Native).



Typically, a person enters into the field of front-end development by learning to develop HTML, CSS, and JavaScript which commonly runs in a Web Browser but can also run in a Headless Browser, or as compilation input for a native runtime environment. These four run times scenarios are explained below.

Web Browsers (most common)

A web browser is software used to retrieve, present, and traverse information on the WWW. Typically, browsers run on a desktop or laptop computer, tablet, or phone, but as of late a browser can be found on just about anything (i.e, on a fridge, in cars, etc.).

The most common web browsers are (shown in order of most used first):

- Chrome
- Safari
- Microsoft Edge
- Firefox

Headless Browsers

Headless browsers are a web browser **without** a graphical user interface that can be controlled from a command line interface programmatically for the purpose of web page automation (e.g., functional testing, scraping, unit testing, etc.). Think of headless browsers as a browser that you can run from the command line that can retrieve and traverse web pages.

The most common headless browsers are:

- Headless Chromium
- Zombie
- Slimerjs

Webviews

Webviews are used by a native OS, in a native application, to run web pages. Think of a webview like an iframe or a single tab from a web browser that is embedded in a native application running on a device (e.g., ios, anroids, windows).

The most common solutions for webview development are:

- Electron (typically used for desktop apps)
- Tauri.js
- Cordova (typically for native phone/tablet apps)
- NW.js (typically used for desktop apps)

Native from Web Tech

Eventually, what is learned from web browser development can be used by front-end developers to craft code for environments that are not fueled by a browser engine. As of late, development environments are

being dreamed up that use web technologies (e.g., CSS and JavaScript), without web engines, to create native applications.

Some examples of these environments are:

- Flutter
- Reactive Native

Defining the Front-end Developer Role

Fundamentally a front-end developer, historically sometimes referred to as a client-side developer, produces the code sent from a web server to a client/front-end to establish a user interface. For example, when you load a webpage into a web browser, code is sent from a web server to the device/client requesting the page. The code sent will produce the user interface one sees in the web browser. This code is considered front-end code and is a mixture of the web technologies HTML, CSS, and Javascript.

An individual typically enters into the field of front-end development by first learning to building simple website using html and css. HTML or HyperText Markup Language is likened to the structural framing of a house, while CSS or Cascading Style Sheets can be considered the finishing touches one sees once a home is complete.

Eventually, the house (i.e., a website) will need to become automated. In other words, it will need to become interactive and respond to events orchestrated by the user or the device on which it runs (e.g., on click or on load do X). To accomplish this, front-end developers learn the javascript simple language and use this language and the Document Object Model (aka the DOM) to add dynamic and interactive aspects to HTML and CSS.

As a front-end developer progresses in their career, they will move from a simple understanding of web pages and websites to potentially a robust

grasp of Software development practice as it is done on the web platform using the JavaScript programming language

Front-End Developers Develop For.

Front-end developers develop for the web platform, and the web platform is most commonly associated with web browser run times. Open a web browser like Google Chrome, navigate to a web page like google.com, and what you are looking at was developed by a front-end developer who developed the web page using HTML, CSS, and JavaScript.

The web platform runtime is not just for web browsers. It can also be used by Webview and Progressive web app (aka PWA) techniques to create native-like applications that are installed on an operating system. This means that a front-end developer can take their knowledge of web technologies and the web platform run time associated with browsers and web development and use these skills to create native applications for popular operating systems like Windows, Mac OS X, iOS, Android, and Linux.

Loosely, think of a WebView or PWA like a single tab from a web browser without an address bar or backward and forward buttons, that is embedded into a native application. This scenario is identical to the browser, and WebViews/PWA's run from HTML, CSS, and JavaScript but instead of facilitating internet access to web pages the intention is the web platform runtime is used to access the native operating systems APIs (i.e., A single browser view of a web page(s), using web technologies, that is run like a native application that may or may not be connected to the internet that has access to native operations either via native web APIs or bridges from web technologies to native APIs).

The most common solutions for WebView development are:

- Electron
- NW.js
- Neutralino.js

Front-end developers can also find themselves developing source code using web platform technologies (e.g., CSS and JavaScript), but then the source code

created is not used by a web platform run time scenario but instead as input which gets translated to native run time code. Basically, coding environments exist where web technologies are written not to run on the web platform but written to be used as input to create real native applications using native APIs.

Some examples of these environments are:

- Flutter
- React Native (The Instagram application for iOS and Android was developed using React Native)
- Tabris.js

As you can see, Front-end developers not only develop for web browsers but also for several other run time scenarios beyond web browsers. Being a front-end developer today could mean creating webpages and web applications that are accessed via web browsers, but it can also mean creating native applications that are installed on operating systems and run offline (e.g. Visual Studio Code is built using Electron)

Required Skills

A professional front-end developer will minimally have a working knowledge of browsers, the internet and be skilled at using the following web technologies:

1. HyperText Markup Language (aka HTML)
2. Cascading Style Sheets (aka CSS)
3. Uniform Resource Locators (aka URLs)
4. Hypertext Transfer Protocol (aka HTTP)
5. JavaScript Programming Language (aka ECMAScript 262)
6. JavaScript Object Notation (aka JSON)
7. Document Object Model (aka DOM)
8. Web APIs (aka Browser APIs)
9. Web Content Accessibility Guidelines (aka WCAG) & Accessible Rich Internet Applications (aka ARIA)

Beyond being skilled at the technologies just mentioned, a front-end developer might also be skilled in one or more of the following areas:

- Content Management Systems (aka CMS)

- Node.js
- Cross-Browser Testing
- Cross-Platform Testing
- Unit Testing
- Cross-Device Testing
- Accessibility / WAI-ARIA
- Search Engine Optimization (aka SEO)
- Interaction or User Interface Design
- User Experience
- Usability
- E-commerce Systems
- Portal Systems
- Wireframing
- CSS Layout / Grids
- DOM Manipulation (e.g., jQuery)
- Mobile Web Performance
- Load Testing
- Performance Testing
- Progressive Enhancement / Graceful Degradation
- Version Control (e.g., GIT)
- MVC / MVVM / MV*
- Functional Programming
- Data Formats (e.g., JSON, XML)
- Data APIs (e.g Restful API)
- Web Font Embedding
- Scalable Vector Graphics (aka SVG)
- Regular Expressions
- Microdata / Microformats
- Task Runners, Build Tools, Process Automation Tools
- Responsive Web Design
- Object-Oriented Programming
- Application Architecture
- Modules
- Dependency Managers
- Package Managers
- JavaScript Animation
- CSS Animation

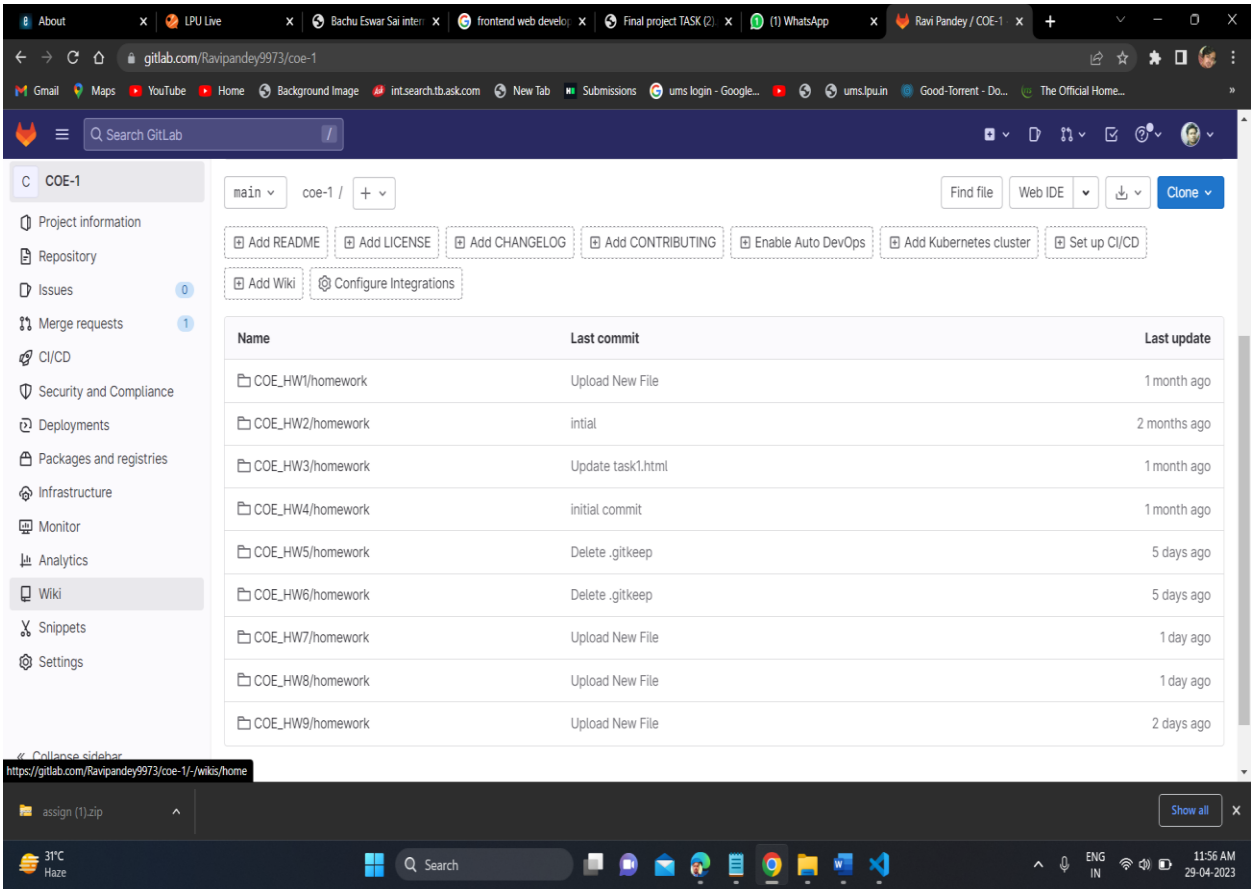
- Charts / Graphs
- UI Toolkits
- Code Quality Testing
- Code Coverage Testing
- Code Complexity Analysis
- Integration Testing
- Command Line / CLI
- Templating Strategies
- Templating Engines
- Single Page Applications
- Web/Browser Security
- Browser Developer Tools

As of late, defining the skills of a front-end developer has become complicated due to a significant divide in the front-end developer profession. A gap has arisen between those front-end developer s who focus on programming and becoming a traditional computer science-oriented JavaScript/software developer, and all this entails, and those who focus more on the UI, HTML, CSS and happen to know some JavaScript. This gap, for better or worse, was orchestrated by the fact that JavaScript infiltrated the back-end and thus back-end developers in time found themselves writing JavaScript back-ends with tools like Node.js and mongoDB. Eventually, these engineers infiltrated the front-end. The good news is this scenario resulted in a front-end and JavaScript renaissance. Pretty much, everything got better. Tools. Frameworks. Package Managers. Libraries. CSS. JavaScript. But, it especially got better for those who already had a command of the JavaScript programming language. The bad news this renaissance also diluted and complicated the skills required to do front-end development and has pulled the profession towards a more engineering-focused field of work often requiring traditional computer science training and software development know-how over UI experience. Unfortunately, for the time being, getting a front-end developer job today might come down to how much you know about computer science theories, software development, or the specifics parts of the ECMAScript specification. I say unfortunately because, in my opinion, what is more important than these matters is a robust understanding of how to construct a usable touch point between the user and the code.

Simultaneously, a trend has been occurring for several years now where websites and web applications are being built using a thick/fat client architecture (e.g., Single Page Applications or SPA's). Meaning, what was once mostly done on the server is now done in the client at runtime. In short, the application logic that runs a website or web application will today often run in the client instead of on the server. When this architecture is in use, the data that drives the website or web application is requested at runtime by the client using a data API (i.e., an interface that returns data only, typically in the form of JSON). What this means for the front-end developer profession is what was once consider back-end competencies are now becoming required competencies to do front-end development (e.g., Software Development, Web Application Development, Software Build Processes, State management), Application performance, etc).

Due to the divide mentioned above and the movement towards thick/fat applications in the client, the front-end skillset spectrum is currently being stretch by what is known as a full-stack developer. A full-stack developer can supposedly not only code a front-end application UI using HTML, CSS, and JavaScript for multiple screen sizes but can also develop the database and data API as well as the web server serving the client. It is this author's opinion that this jack of all development trades has been seen before in the form of a Webmaster and back-end framework developers. The author believes that history will repeat itself and the notion of a single do it all developer will run its course again and then eventually be wisely replaced with reasonably focused developers either working mainly on the front-end or back-end with a clear separation. I believe this will happen because the mile wide and inch deep developer is ultimately inept at properly caring for the UI and user experience. Don't get me wrong, a one in a million, unicorn, rock star developer does exist that can do it all and do it well. But modeling a profession on such an individual is impractical and dangerous.

Assignment Done During Train



Chapter-4

CONCLUSION

The main objective of this training was to first introduce me with Fronted Web Development, and the company, different products of the company, how the company works, and a lot of essential information.

All these learnings with my prior knowledge of HTML,CSS,Javascript made me suitable to work on a project .

Though not much can be disclosed about the project, but the learnings sure can, so here are the things that I can conclude from my about 4 months of internship experience:

• All the learnings till date were finally used while working on the project.

• No number of personal projects can replicate the experience of working on a live project.

• As a fresher, every day was a new learning.

• Our trainer was very supportive and always ready to help .

• With each task assigned to me, it felt like a responsibility on our shoulders that had to be carried out diligently.

• Our wonderful team never led stress to develop, and the work was being carried out in a smooth, orderly manner.

• Completing every assigned task before deadline gave me confidence to continue moving forward.

• Any hurdles faced were looked upon and the optimum way was paved for us. • Work-Life balance was always taken in consideration.

• I learnt so much about interpersonal skills, making connections, Independence, working hard no matter what you're doing, Taking constructive criticism well.

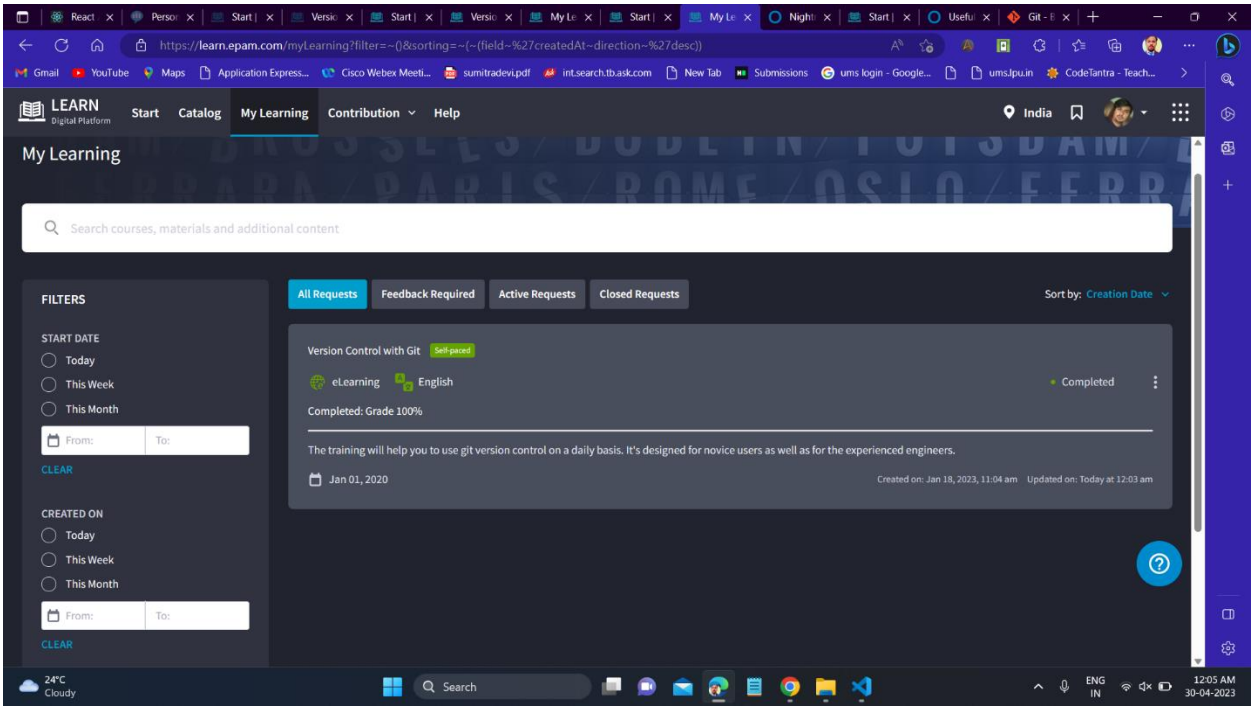
• Also, during the time of my Internship I learnt that what you learnt in college are helpful but not sufficient, so you must acquire new and

improved skills and how to apply them to solve the problems in work and in life as well.

CHAPTERS-5

ACHIEVEMENTS AND CERTIFICATES

various badges. Skills you developed while earning Trailhead badges 36 During the training, I've undergone training on Fronted web Development. As a part of it, I've learnt fronted and various other things . In fronted and other things, I have earned Achievements and Certifications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Contribution
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Feedback Required
Active Requests
Closed Requests
Sort by: Creation Date
Version Control with Git
Self-paced
eLearning
English
Completed
Completed: Grade 100%
The training will help you to use git version control on a daily basis. It's designed for novice users as well as for the experienced engineers.
Jan 01, 2020
Created on: Jan 18, 2023, 11:04 am
Updated on: Today at 12:03 am
24°C
Cloudy
Search
ENG
IN
12:05 AM
30-04-2023

This is to certify that the declaration statement made by this group of students is correct to the best of my knowledge and belief. They have completed this Project under my guidance and supervision. The present work is the result of their original investigation, effort and study. No part of the work has ever been submitted for any other degree at any University. The Project is fit for the submission and partial fulfillment of the conditions for the award of B.Tech degree in Computer Science from Lovely Professional University, Phagwara.

Signature and Name of the Mentor

Designation School of Computer Science and Engineering,

Lovely Professional University,

Phagwara, Punjab. Date :02-05-2023

References

- **https://www.epam.com/**
- **https://elearn.epam.com/**
- **https://frontendmasters.com/guides/front-end-handbook/2018/what-is-a-FD.html**