purple.com

India's #1 Beauty Destination

A report submitted in partial fulfillment of the
requirements for the award of the degree of

Bachelor of Technology in
Computer Science and Engineering

Submitted by:
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Acknowledgement

I want to express that this project has been an incredible learning opportunity for me. The satisfaction of completing any task successfully would not be complete without acknowledging the people whose continuous cooperation made it possible, and whose guidance and encouragement have been essential to our success.

I would also like to thank **Dr. Mukesh Mann, Dr. Vinay Pathak and Training and Placement (TnP) Cell IIIT Sonepat**, for guiding me in this internship and allow me this opportunity.

I would like to thank my team lead **Sara Jadhav** and my seniors/colleagues **Jyotikanta Nadi, Varun Rana, Shyam Mahato and Adnan Ahmad** along with my frontend engineering manager **Kunal Das**, as well as the entire team **@Purplle** for their extraordinary guidance and help whenever a problem arose. I will always remember the knowledge they shared with me and strongly believe that it will help me become a better developer in the future. Looking forward to work with them and learning and achieving more results and gaining more experience.

Abstract

Name of the Industry Mentor/Tech team lead: **Jyotikanta Nadi/Sara Jadhav**

Month and Year of Report Submission: **May 2024**

Need
- Gain experience about tech aspects of product-based unicorn startups.

- Learn about the different aspects of web applications, customer requirements, company requirements, optimization, and SEO aspects.

- Work on a real-world project that would contribute to the company's success.

Objectives
- Researching innovative solutions to problems.

- Developing new features according to the requirements by product managers and leads.

- Learning about the e-commerce and tech industry in general.

Planning
- We follow Agile methodology with a biweekly sprint cycle.

- We finalize a list of features to build and then implement them.

- Maintaining different environments for playground, testing and release/production and perform proper sanity and QA for all steps of development life cycle.

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Methodology

We follow and implement the Agile methodology, having scrums and sprints using JIRA tool and it's Kanban board.
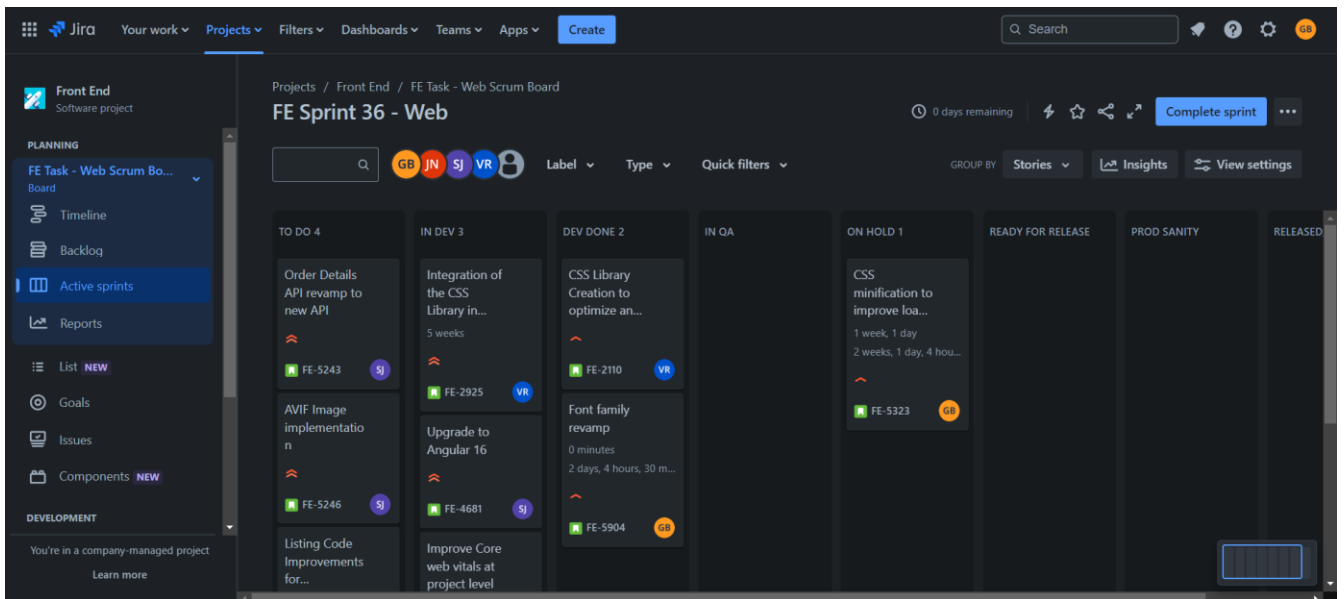
Fig. 1: JIRA Snapshot

Execution

- All features were implemented using Angular and depending on the scope of the service.

- PDS library (available on npm) was specifically designed for the UI/UX requirements.

- SSR, Redis caching, RxJs etc. were used for more deeper technical aspects which cannot be disclosed.

Assessment

- Daily scrum meetings with the tech lead for assessing the work done and the pending tasks were discussed.
- Monthly OKR meetings with the upper echelon including the CTO and engineering head for final app testing before code merge with production.

Certificate

Certificate

This is to certify that the Internship Work by **Mr. Gunjan Ashok Bhanarkar** in **Purplle** is an original work and that this work has not been submitted anywhere in any form. Indebtedness to other works/publications has been duly acknowledged at relevant places. The internship work was carried during **January 2024** to **July 2024** in **Manash Lifestyle Pvt. Ltd. (Purplle).**

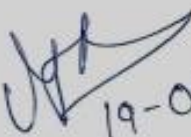|	
	Jyotikanta Nadi (signature)
Signature Internship Mentor faculty	**Signature of industry mentor/Supervisor**
Name: Dr. Mukesh Mann & Dr Vinay Pathak	Name: Jyotikanta Nadi
Designation: Assistant Professor	Designation: Senior Software Engineer, Front-end (web)
(Seal of the organization with Date)	*(Seal of the organization with Date)* (Seal: MANASH LIFESTYLE PVT. LTD. MUMBAI) 19-05-2024

Indian Institute of Information Technology, Sonepat

Internship Joining Report

Date of Joining the Internship Station 17/01/2024

Period of Internship	From	To	Total Months
	17/01/2024	17/07/2024	6 months

Student Information	Name	Roll No	Branch
	Gunjan Ashok Bhanarkar	12011014	CSE

Student's Signature with Date	*(signature)* 19-05-2024
Name and Address of the Office	10th floor, Tower C, Embassy-247, LBS Marg, Gandhi Nagar, Vikhroli West, Mumbai, 400083 Phone: 8655500222 Website: https://www.purplle.com
Location of Internship	Mumbai, Maharashtra
Name and Designation of the Industry Guide/ Industry Mentor for the Project	Jyoti Kanta Nadi, Senior Software Engineer, Front-end team (web)
	Signature of Industry Mentor *(signature)*
Industry Mentor Contact No.	+91 8270820320
Industry Mentor E-mail Address	jyotikanta.n@purplle.com

List of Abbreviations

Abbreviation	Expansion
MR	Merge Requests
LCP	Largest Contentfull Paint
API	Application Programming Interface
CI/CD	Continuous Integration/Continuous Delivery Or Continuous Deployment
KT	Knowledge Transfer
FID	First Input Delay
CLS	Cumulative Layout Shift
TS	Typescript
FCP	First Contentfull Paint
TBT	Total Blocking Time
TTFB	Time to First Byte
PDP	Product Page/s
HTML	Hypertext Markup Language
CSS	Cascading Style Sheet
URL	Uniform Resource Locator
R&D	Research and Development
UI	User Interface
UX	User Experience

Table of Contents

Chapter - 1: Brief Introduction: Purplle

A brief introduction and overview of the organization: Manash Lifestyle Pvt. Ltd. (Purplle.com):

Purplle, established in 2014 by Manish Taneja and Rahul Dash, is a leading e-commerce platform in India specializing in beauty and personal care products. With its headquarters located at Embassy-247, LBS Marg, Gandhi Nagar, Vikhroli West, Mumbai, Maharashtra.

Purplle offers a comprehensive range of cosmetics, skincare, haircare, and wellness products from various brands. The company has a strong online presence, with dedicated applications for iOS, Android, and web platforms, which is mobile as well as desktop friendly, making it convenient for customers to shop for their favorite beauty essentials anytime, anywhere.

Led by CTO Suyash Katyayni, Purplle has grown significantly over the years and now boasts a workforce of 1,000+ employees. Registered as Manash Lifestyle Pvt. Ltd., Purplle has carved a niche in the beauty industry by providing not only a vast selection of products but also valuable beauty tips, tutorials, and product reviews to help customers make informed decisions about their purchases.

Despite stiff competition from rivals like Nykaa and Tira, Purplle has emerged as a strong contender in the market, thanks to its innovative offerings and customer-centric approach.

Purplle's Official Website: https://www.purplle.com/pr/about-us

Download Purplle App for Android:
https://play.google.com/store/apps/details?id=com.manash.purplle

Download Purplle App for IOS: https://apps.apple.com/in/app/purplle-beauty-shopping-app/id1078972948

LinkedIn: https://www.linkedin.com/company/purplle-com/

Purplle in the Business Sector

Purplle.com operates within the dynamic and ever-expanding beauty and personal care e-commerce sector. This sector encompasses the online retailing of a vast array of products related to beauty, skincare, haircare, cosmetics, fragrances, and grooming. With the rise of digitalization and e-commerce platforms, consumers have increasingly turned to online channels to fulfil their beauty and personal care needs.

The beauty and personal care e-commerce sector caters to a wide range of customers, from individuals seeking everyday essentials to beauty enthusiasts looking for niche products and brands. It offers convenience, accessibility, and a diverse selection of products, allowing consumers to explore, compare, and purchase items from the comfort of their homes.

Furthermore, the sector has witnessed significant growth fuelled by factors such as increasing internet penetration, smartphone usage, and changing consumer preferences towards online shopping. E-commerce platforms like Purplle.com have played a pivotal role in driving this growth by offering a seamless shopping experience, personalized recommendations, and innovative features like virtual try-on technology.

Overall, the beauty and personal care e-commerce sector represent a vibrant and competitive landscape, characterized by innovation, convenience, and a focus on enhancing the customer experience.

Chapter - 2: Overview of Purplle

Overview:

Purplle has solidified its position as a key player in the Indian beauty market since its inception in 2014. With a workforce ranging from 1,000 to 5,000 employees, the company operates under the registered name Manash Lifestyle Pvt. Ltd. Headquartered in Mumbai, Maharashtra.

Purplle competes with major industry players like Nykaa and Tira. Despite the competitive landscape, Purplle's success is attributed to its dedication to customer satisfaction, innovation, and product quality.

Its extensive product range includes cosmetics, skincare, haircare, and wellness items, accessible through its iOS and Android apps and web platform. Purplle's commitment to providing valuable beauty-related content further distinguishes it in the market, making it a go-to destination for beauty enthusiasts across India.

In a company like Purplle, which operates in the e-commerce sector focusing on beauty and personal care products, there would typically be several departments and teams responsible for different aspects of the business. Here is a breakdown of some possible departments and teams:

1. Technology/Engineering Team: Responsible for developing and maintaining the company's website, mobile apps, and other technological infrastructure. This team includes software engineers, UI/UX designers, and QA testers, backend developers etc.

2. Product Team: Manages the selection, sourcing, and presentation of products on the platform. This team may include product managers, merchandisers, and data analysts.

3. Supply Chain Management (SCM): Handles the procurement, inventory management, and logistics of products. This team ensures that products are sourced efficiently and delivered to customers in a timely manner.

4. Customer Relations/Customer Service: Deals with customer inquiries, feedback, and support. This team is crucial for maintaining customer satisfaction and loyalty.

5. Marketing and Sales: Responsible for promoting the company's products and brand through various channels such as digital marketing, social media, and advertising. This team includes marketers, content creators, and sales representatives.

6. Finance and Accounts: Manages financial transactions, budgeting, and financial reporting. This department ensures the company's financial health and compliance with regulations.

7. Human Resources (HR): Handles recruitment, employee relations, training, and development. This team ensures that the company has the right talent and maintains a positive work environment.

8. Management: Oversees the overall strategy, operations, and growth of the company. This includes top-level executives such as the CEO, COO, and CFO.

9. Storefront/Design Team: Responsible for the visual presentation of the website and mobile apps, including layout, design, and user experience.

10. Product testers: These generally include influencers, freelance digital marketing teams, fashion models etc. which test product helping advertising and influencing people with the company's resolution.

These departments and teams work together to ensure the smooth functioning of the e-commerce platform, from product selection and presentation to customer satisfaction and backend operations.

Chapter – 3: Plan of Internship Program

Duration of The Internship

The internship start date was the 17th of January 2024 and the 17th of July 2024 marks the end of internship. During the internship, I was assigned a wide range of tasks like of creating features, resolving bugs, help in debugging, perform application sanity and analysis of performance reports, be an integral part of team and help with brainstorming, and play crucial role in UI/UX development. I was designated as a frontend engineering intern.

My Duties

During the internship period I was assigned various duties as per the requirements. The duties I fulfilled are as follows:

- UI/UX development according to the requirements.
- PDS CSS library integration and removal of unused CSS from separate modules.
- Lean and understand the Angular.js framework, SSR implementation, caching.
- Enhance system efficiency, perform regular sanity checks.
- Optimization and minification of unused code.
- Understanding using git, GitLab and git branching strategy for efficient collaboration and CI/CD.
- Fix production bugs which I was qualified for, collaborate with UI/UX teams, QA teams for testing and Design reviews.
- Acquire proficiency in BEM methodology, modern UI practices.
- Understand core web vitals, google page speed dev insights report, chrome lighthouse reports.
- Analysis of core web vitals like LCP, FCP, INP, CLS and their effect on performance and SEO.
- Learned about implementing webview pages, debugging using dev tools and debugger, performance analysis.
- Understanding google app script used in google sheets and other office tools to automate certain tasks for business teams.
- App Testing/Debugging, performing sanity checks, collaborating with QA.
- Checking Site Reliability and security, merge conflicts on GitLab.
- Understanding SSR implementation in angular using universal, Redis caching and it's effect on UX and SEO, improving overall ranking of the site.

Notable Work

In the internship, the tasks that were assigned to develop in the project, which are as follows:

- Optimized and minified 20k+ lines of unused code, enhancing system efficiency and conducted UI sanity checks to ensure optimal user experience.
- Successfully resolved 10+ production bugs and implemented 2-3+ new features, addressed over 11-12+ JIRA bug tickets reported by QA and collaborated with UI/UX teams.
- Acquired proficiency in BEM methodology, modern UI practices.
- Understanding web vitals, demonstrated expertise in GitLab and Git branching concepts, resolving merge conflicts.
- Understanding and updating page speed dev insights report weekly to analyse performance.
- Performed CSS minification by removing 14k+ lines of redundant code and revamping with new PDS library for Purplle.
- Worked in PDS library specifically designed for Purplle and it's integration in various modules which includes Listing, Product modules using customized angular based UI components etc.
- Learned about implementing web view pages, debugging using dev tools and debugger.
- Performance analysis, affect of SSR(server-side rendering) and Redis caching.
- Created a+ content automation sheet using google appscript automating the entire a+ content creation displayed on PD pages reducing the overall work of 2 devs.

Chapter – 4: Introduction

Some Introduction:

The internship start date was the 17th of January 2024 and the 17th of July 2024 marks the end of internship. During the internship, I was assigned a wide range of tasks like of creating features, resolving bugs, help in debugging, perform application sanity and analysis of performance reports, be an integral part of team and help with brainstorming, and play crucial role in UI/UX development. I was designated as a frontend engineering intern.

As a frontend engineering intern, as the name suggest, my position was in the frontend team of Purplle in IT/Tech Department. The Frontend team consists of 3 sub-teams under one reporting/engineering manager. The 3 sub-teams were namely:

- Android Team
- IOS Team
- Web Team

Each of the above teams had their own team members/developers under one team/tech lead.

In purplle, since agile methodology was followed, we had daily internal scrums i.e. team meetings, where we reported and discuss with our leads the tasks we did and tasks we are going to do, along with discussion of blockers, dependencies and any other problem from other teams like QA or Backend or Devops etc. And after that we also used to have main scrum on daily basis of the entire frontend team where each member used to report to the manager. As Purplle is a grown unicorn startup, the organizational structure and workplace hierarchy was properly followed, the friendly work environment along with exposure to professional working experience helped develop soft skills and in-office skills, which are equally important along with your technical skills.

I have worked for 5+ months in Purplle yet and looking ahead to complete my 6 months internship along with getting placed and having a full-time offer and get promoted to Associate Software Engineer which will eventually lead to SDE-1 role and so on. In the internship period, firstly gained a lot of experience, and learned a lot of new things, which include new tech stack like Angular, using Gitlab rather than usual GitHub, understanding the large codebases, and lot more which things discussed further in the main text. Worked in a great team, part of being such an organization was overall a great journey.

Chapter - 5: Main Text: Work Done

Overview:

- Optimized and minified 20k+ lines of unused code, enhancing system efficiency and conducted UI sanity checks to ensure optimal user experience.
- Successfully resolved 10+ production bugs and implemented 2-3+ new features, addressed over 11-12+ JIRA bug tickets reported by QA and collaborated with UI/UX teams.
- Acquired proficiency in BEM methodology, modern UI practices, and web vitals, demonstrated expertise in GitLab and Git branching concepts.
- Performed CSS minification by removing 14k+ lines of redundant code and revamping with new PDS library for Purplle
- Worked in PDS library specifically designed for Purplle and it's integration in various modules which includes Listing, Product modules using customized angular based UI components etc.
- Learned about implementing web view pages, debugging using dev tools and debugger, performance analysis, effect of SSR(server-side rendering) and Redis caching.
- Created a+ content automation sheet using google appscript automating the entire a+ content creation displayed on PD pages reducing the overall work of 2 devs.

Please note that the codebase or any internal information cannot be shared because of the non-disclosure policy.

Elaboration:

We now elaborate each point in details.

1. **CSS Minification task**:
   Introduction: Purplle's main website https://www.purplle.com is developed using angular framework, and for styling plane common sass and angular material UI was used.
   Problem: Due to so much SASS/SCSS code written for every page and component, it caused a lot of code redundancy, repeated styles, non-uniform CSS, many irregularities in the UI.
   Solution: PDS Library: UI library made using angular framework, specific for purplle's UI requirements.
   Check out on npm: https://www.npmjs.com/package/@purplle/pds

   This library is primarily focused and based on the popular Bootstrap library, along with the main styles and classes used in CSS are focused on purplle's UI requirements, and custom components are used and added according to the requirement of UI/UX teams. This solves the problem of writing lots of SCSS code each time for every component and also removal/minification of unused CSS from the codebase, which will overall lead to reduce in the main-thread load and improve performance of the overall application

Implementation: My task was to implement this PDS library, and replace the used css code with PDS alternative styles, and remove any unused code. This task took 2-3 months to complete, overall 14k lines of CSS code was removed and just 5k lines of code was added instead of this.
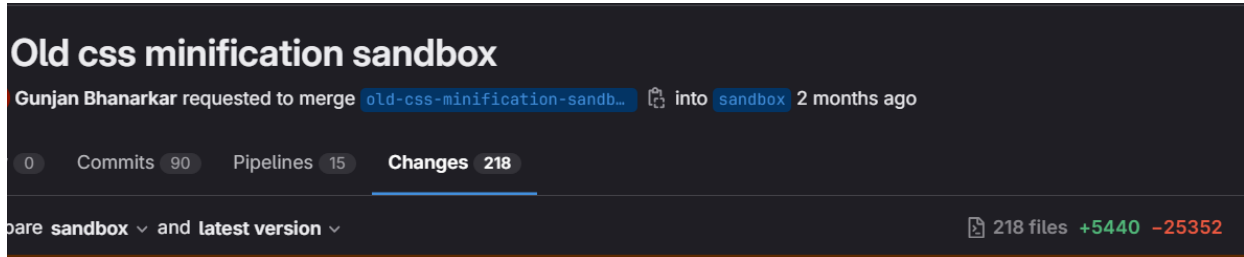

Fig. 2: CSS minification sandbox MR

Major Learning/Skill learned: In the CSS minification task, the major most skilled was to understand the entire codebase, different modules and components of the project, and also PDS library and how the CSS is used and how to have a better, cleaner, optimized code for good UI and UX.

2. JIRA Tickets:

Introduction: The SDLC in purple is based on agile methodology, JIRA Tool/software is used for task management and resource management as well. The bugs, tickets, issues, story etc. are all made on JIRA to keep a track of the overall development system.

My contribution: Throughout my internship tenure, I have worked on around 28 JIRA tickets, which include bugs, features, story and much more tasks, subtasks etc.

Major Learning/Skill learned: Understanding the agile methodology used in SDLC, also how to use the JIRA software by Atlassian which is most used by many companies and industries for tracking and as a management tool.
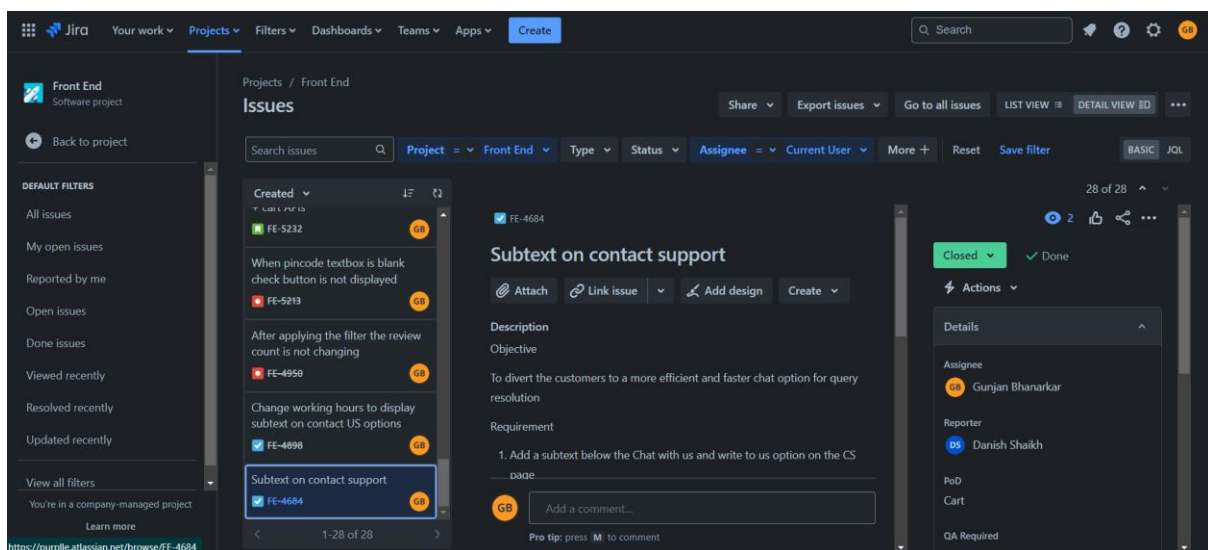

Fig. 3: JIRA Issues Snapshot

3. BEM and modern UI/UX methodology:

Introduction: The **Block, Element, Modifier** methodology (commonly referred to as <u>BEM</u>) is a popular *naming convention* for classes in HTML and CSS. <u>Developed by</u> the team at Yandex, its goal is to help developers better understand the relationship between the HTML and CSS in a given project.

In this CSS methodology a **block** is a top-level abstraction of a new component, for example a button: .btn { }. This block should be thought of as a parent. Child items, or **elements**, can be placed inside and these are denoted by two underscores following the name of the block like .btn__price { }. Finally, **modifiers** can manipulate the block so that we can theme or style that particular component without inflicting changes on a completely unrelated module. This is done by appending two hyphens to the name of the block just like btn--orange.

My contribution: My task was to firstly analyze, review and understand the methodology and implement in my overall programming patterns and development rules followed, to have a better coding practice, maintaining understandable, clean, efficient frontend UI code which will help in overall code management and past as well as future developers to get a solid understanding of the codebase due to the effective methodology used.

Major learning/Skill Learned: Understanding about the BEM methodology, modern UI/UX methodologies and techniques, and proper practices used for better performance, better code readability.

4. Git/ Gitlab and branching strategy:

Overview: Gitlab (similar as GitHub in some sense) is used for code management, branching, CI/CD, contribution, version control and the entire codebase/repository is stored in the GitLab organization of Purplle. Some features of Gitlab include maintaining different versions/branches. Unlike pull requests in GitHub, GitLab has merge requests (MR). Creating branches for different bugs or features or any task, drafting MR's, reviewing self MR or someone else's MR etc.
My contribution: Understanding the branching strategy maintained and followed in Purplle. There are 3 deployment environments, sandbox, test and production. Sandbox playground is for developer testing, test is for QA and perform final testing and sanity before releasing on production. Understanding this workflow, and process followed by the QA team for testing was an integral party of my internship journey in Purplle.

Major learning/Skill Learned: Understanding about Git version control, CI/CD and using gitlab for code management, code warehousing, containerization, pipelines, git branching concept, merge requests, code reviewing, resolving merge conflicts, and much more.
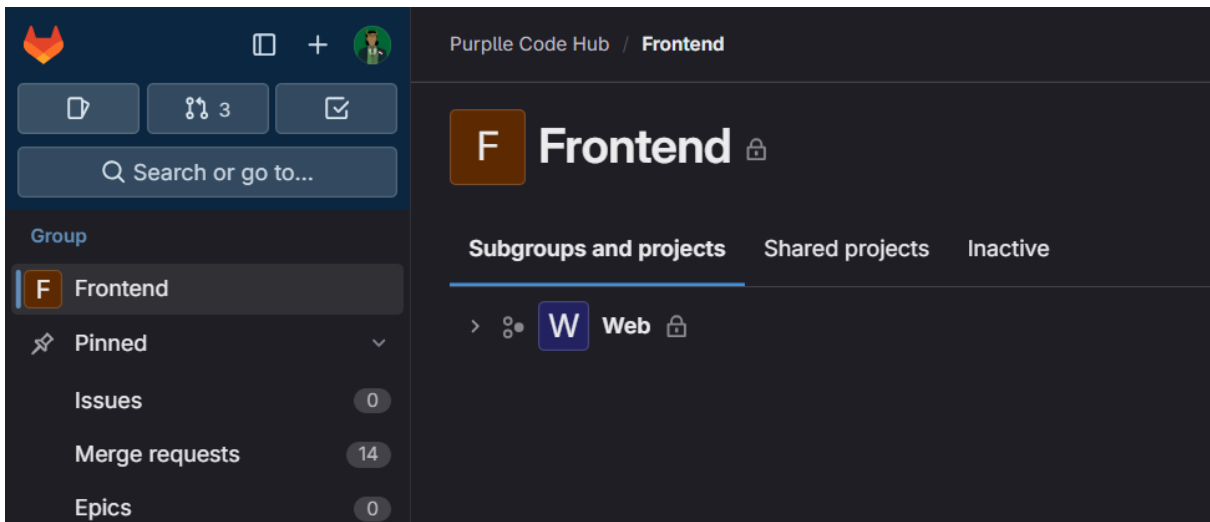
Fig. 4 Purplle Code Hub / Frontend Gitlab homepage

5. PDS Integration in different modules:

Problem: Due to so much SCSS code written for every page and component, it caused a lot of code redundancy, repeated styles, non-uniform CSS, many irregularities in the UI. Also, there was a need to reduce the dependency on 3rd party UI components or styles, and then need to override them according to requirements hence causing unnecessary writing of code.
Solution: PDS library was introduced. PDS stands for Purplle Design System. This library is available on npm as well. Link: https://www.npmjs.com/package/@purplle/pds

PDS is specifically designed and made for Purplle's UI and design, made using angular framework, provides custom angular components to develop quick UI and structure without writing much HTML or CSS, and also providing attributes and usability of custom styles. Since it is also inspired by the famous bootstrap library, it also provides a lot of classes that can be directly added to make the UI, just like using bootstrap or tailwind.
My work: Each module/page/section in the web application of purplle is different, for example Listing, Profile, Product, Support, Cart, Checkout etc., having shared components, widgets etc. My work was to remove all the CSS which can be replaced by the PDS, revamp each component in the module one by one and integrate them with the PDS library, following proper good coding practices and norms. Listing module (brands page, categories page etc.), Product module (all product pages, also called as PDP) have been integrated by PDS where I have worked upon.

Major Learning/Skill learned: Learned about the PDS library, it's uses, how it was built and the requirements, got well-versed with major CSS libraries and also understanding of the separate modules used in the web application of purplle like Product, Listing etc. and how to integrate the CSS library in them and how the library will affect the UI and the benefits of the same.

Fig. 5 PDS library in npm

6. Webview debugging and feature implementation:

Introduction: WebView pages are components of mobile applications that display web content within the app itself. They are often used to integrate web-based features, such as articles, forms, or interactive elements, into mobile apps seamlessly. WebView pages leverage the device's built-in web engine to render HTML, CSS, and JavaScript content directly within the app's interface.

My work: Some webview pages in purplle's app includes customer support (CS) page, and categories page. My few tasks include implementation of vernac support (multi-lang) support in category webview page, and other task was some feature implementation in customer support page. These tasks involved the code to be done in accordance to the parameters from app environment, as well as using build number for android or IOS app. Also, I while doing these tasks, since the webview pages work in mobile apps, these could be debugged using the debug builds provided by the app teams. Debugging webview pages seems a challenging task but it's quite simple.

Major Learning/Skill learned: Understanding about how the webview pages work, their requirement and importance, and also need of this functionality in apps. How to perform debugging for these kind of features, how they work and how to communicate between web and app for these pages.

Below as you can see, on this URL in your chrome browser: chrome://inspect/#devices
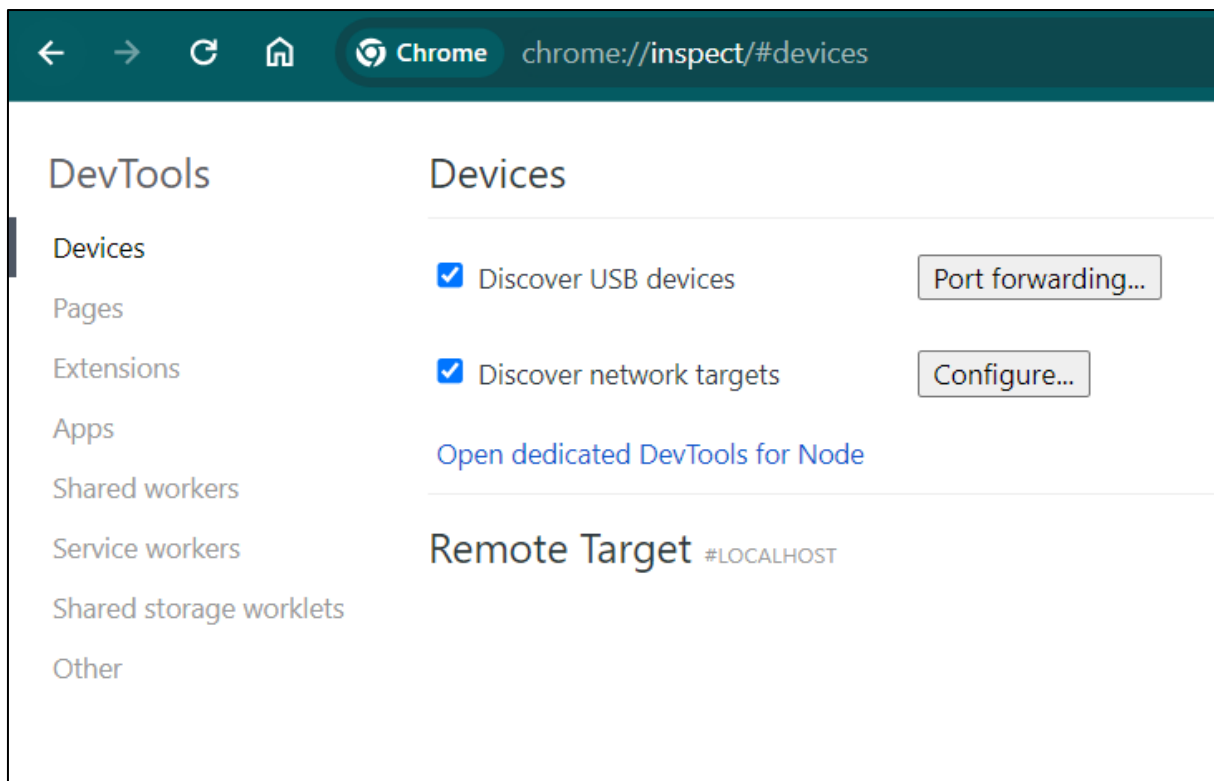
Fig. 6 Chrome inspect devices for web view debugging

One can perform web view debugging here, can connect their mobile device via USB, keeping the USB debugging on in their device. They can easily inspect any web pages open in their mobile devices/browsers, or any web view pages in use using this. It helps in better understanding, debugging any bugs/problems.

7. Understand SSR and Redis:

Introduction: SSR stands for Server-Side Rendering. Server-Side Rendering (SSR) is a technique used to render web pages on the server before sending them to the client's browser. In the context of Angular, SSR involves pre-rendering Angular application pages on the server-side, providing several benefits such as improved performance, SEO (Search Engine Optimization), and initial page load speed.

SSR in Angular involves setting up a Node.js server to run the Angular Universal package, which handles the server-side rendering process. Angular Universal executes Angular application code on the server to generate HTML responses to client requests. This HTML is then sent to the client, where it's hydrated into a fully functional Angular application.

Redis is an open-source, in-memory data structure store that can be used as a caching layer to improve the performance of Angular applications. In the context of Angular, Redis is typically used to cache frequently accessed data, such as API responses or computed results, reducing the need to retrieve data from slower data sources like databases.

Work: Since SSR and Redis are mostly implemented, my work was just to have the KT for the same and understand the implementation of SSR using angular universal and express, understanding its uses and effect, and how the Redis caching is done and how the cache key is

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generated. User seeing cache copy of the page site served from Redis instead of requesting the main server for resources. In case of any problem or any task related to the same, the KT will be useful.

Major Learning/Skill learned: Majorly learned and understood the implementation of SSR in Angular application, what does SSR means and why is it used, and how the caching is done via Redis to provide quick response from Redis cache rather than calling the response from server, and implementing the same.

8. Understand Core Web Vitals and reports analysis:

Introduction: Core Web Vitals are a set of specific factors that Google considers important in determining the user experience of a website. These factors focus on aspects such as loading performance, interactivity, and visual stability. As of 2021, the Core Web Vitals consist of the following metrics: FCP, LCP, INP, CLS, TBT, TTFB etc are some metrics. Main are described as:

- Largest Contentful Paint (LCP): Measures loading performance.
- First Input Delay (FID): Measures interactivity.
- Cumulative Layout Shift (CLS): Measures visual stability.

My work: There are 2 ways we used to measure the core web vitals and performance reports of the web application/ website weekly. This is very useful, important and crucial in understanding the performance and SEO ranking of the website. The 2 ways are:
- Chrome Dev tools lighthouse report

Inspect the website in any chromium based browser, you will see the Lighthouse option in devtools, click on it, and click on analyse page load to generate the lighthouse performance reports.
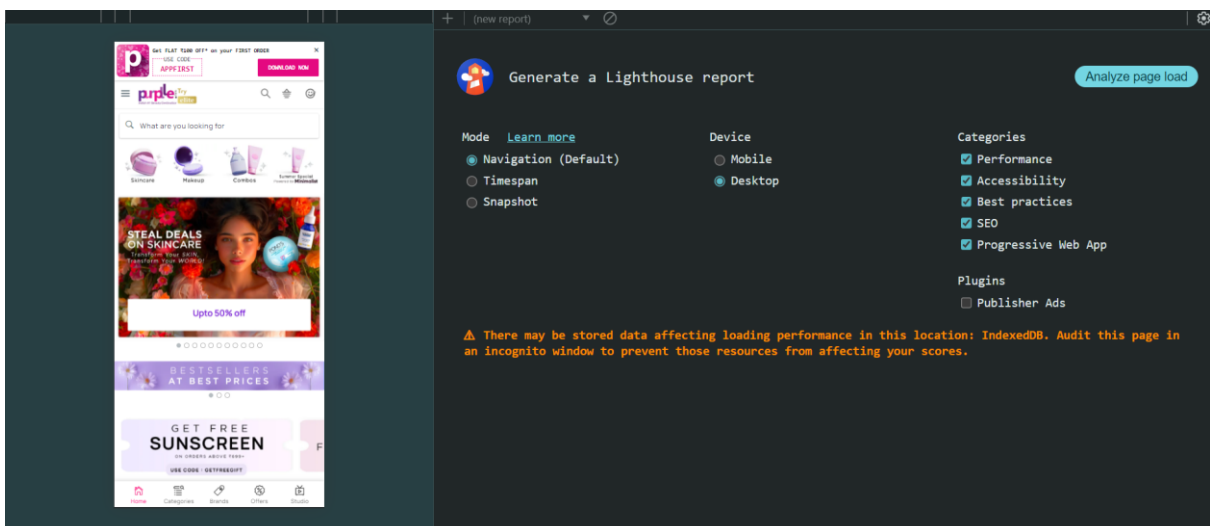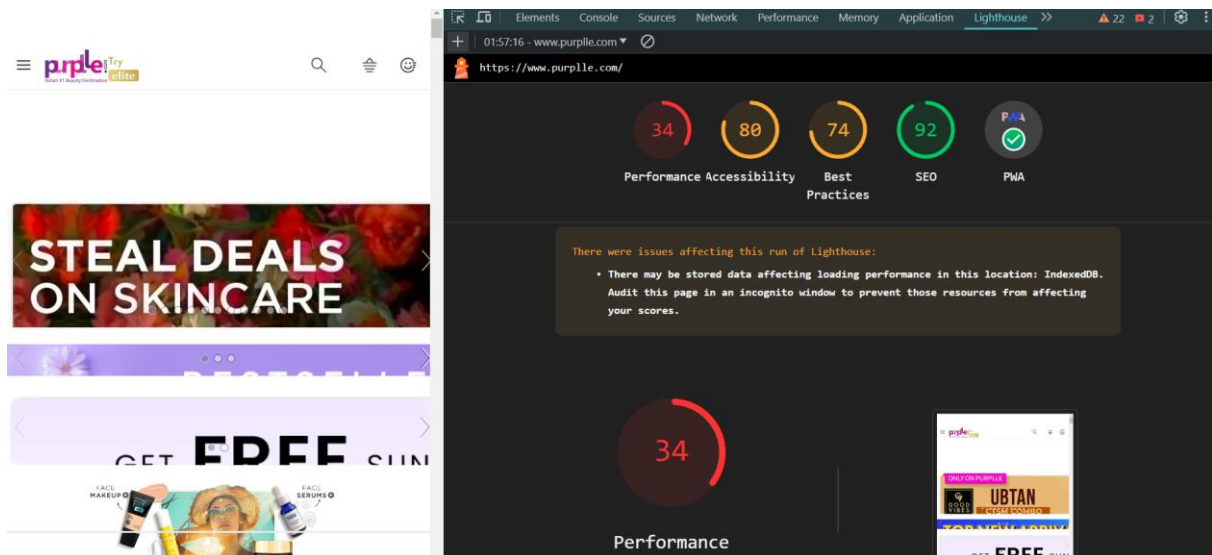

Fig. 7: Chrome dev tools lighthouse tool

Fig 8(i): Chrome Lighthouse performance reports(not accurate, sample generate)

- Google's page speed dev insights report:

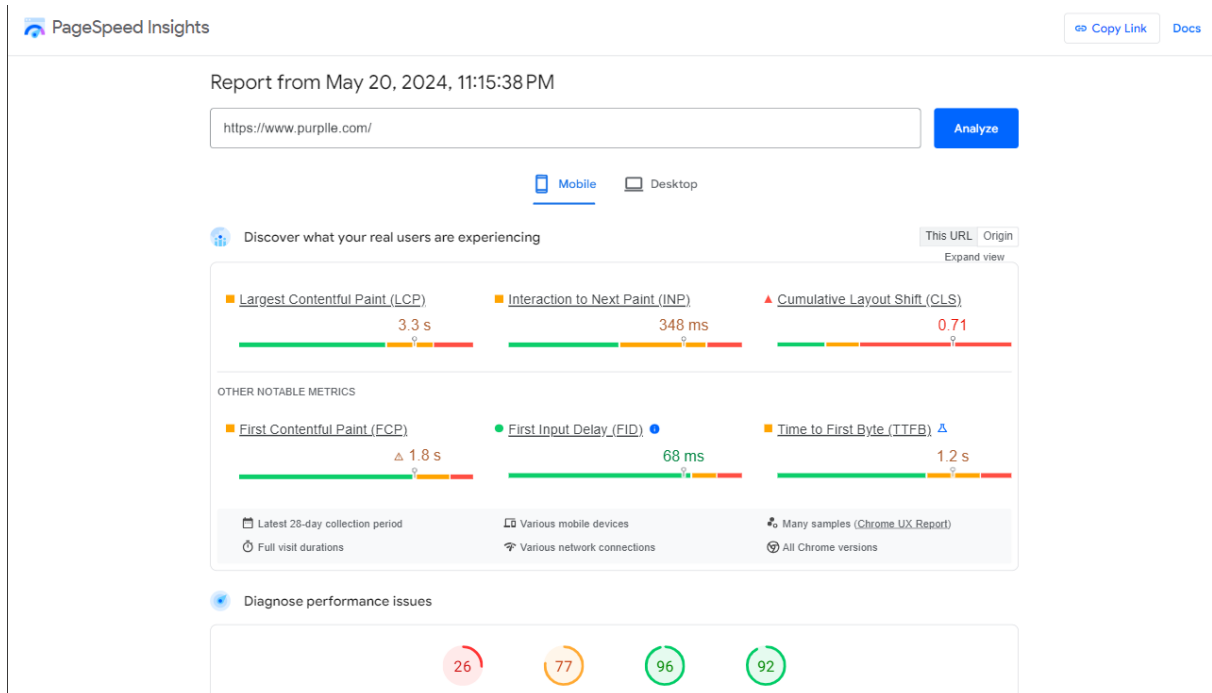Page speed dev insights report generated on this website:

https://pagespeed.web.dev/

Fig. 8(ii): Google page speed dev insights report(sample generate)

Major Learning/Skill learned: Learned about reading and understanding the lighthouse reports, and page speed dev insights report, also about core web vitals used for measuring the website performance and analysing the same. Tools to analyse these and how to improve them via chrome dev tools documentation.

9. A+ content automation tool creation:

Introduction: A+ content is the type of content used in many e-commerce websites other than Purplle like Nykaa, Myntra etc. They consist of the posters and banners which the business/marketing team makes and wants to put in each of their product description, generally they look like banner images, but in reality they are single images in some kind of HTML format displayed in the product description.

Problem: A+ content, as explained above, required a lots of images of particular product to be arranged in an HTML template and shown in the PDP. Since this task was considered to be done by the frontend team, it consumed lot of resource as one developer was continuously involved in just getting the image URLs and inserting them in the HTML template. So the requirement was to automate this task.

Solution: The idea was to create a google sheet in which the image URLs will be pasted, and then by just few clicks or something, the HTML template will be generated at ease. I created a google sheet and was tasked to do R&D. The solution was Google AppScript. This is similar to JavaScript syntax. A lot of prompting and analyzing GPT-4 solutions and some help from senior developers help achieve this automated tool by implementing the google app script code linked to the sheet, this automates the task. The team just has to paste the image URLs, select the cells and in just 2 click they will get the generated HTML. More information or screenshots cannot be shared because of privacy concerns as the sheet confidential.

Major learning/Skill learned: Learned about how powerful the google sheets tools is, how to do R&D., prompting as well as using GPT for problem solving, understanding the outputs and changing the inputs for prompts. Also learned about google app script, how useful it is for running custom code and scripts and logic within the sheet and it's vast possibilities of uses.

10. Internationalization of codebase to implement vernac support:

Introduction: Vernac support means multi-lingual support. The android and iOS apps of purplle have vernac support, the can be used in other languages like Hindi, Marathi, Telugu and default English. Since discussed above these apps also have web view pages, we had to provide vernac support for these pages.

My Task: My task was to understand fetching of the lang_code passed from the app environment in our angular application, and then using that code as query param in the API call, implement the vernac as it returns the corresponding language response. The code done for implementation cannot be shared but here is the output for the same.

Major Learning/ Skill learned: Learned about what exactly is meant by vernac support, how it is implemented, and about application internationalization and localization. Supporting different languages, various libraries and techniques to internationalize the application, configuration for the same and much more. This is still a work in progress task to this date, no screenshots available in particular of the outcome as of now.

Milestone Graph/Map/Chart:

MULTI-STAGE MILESTONE CHART
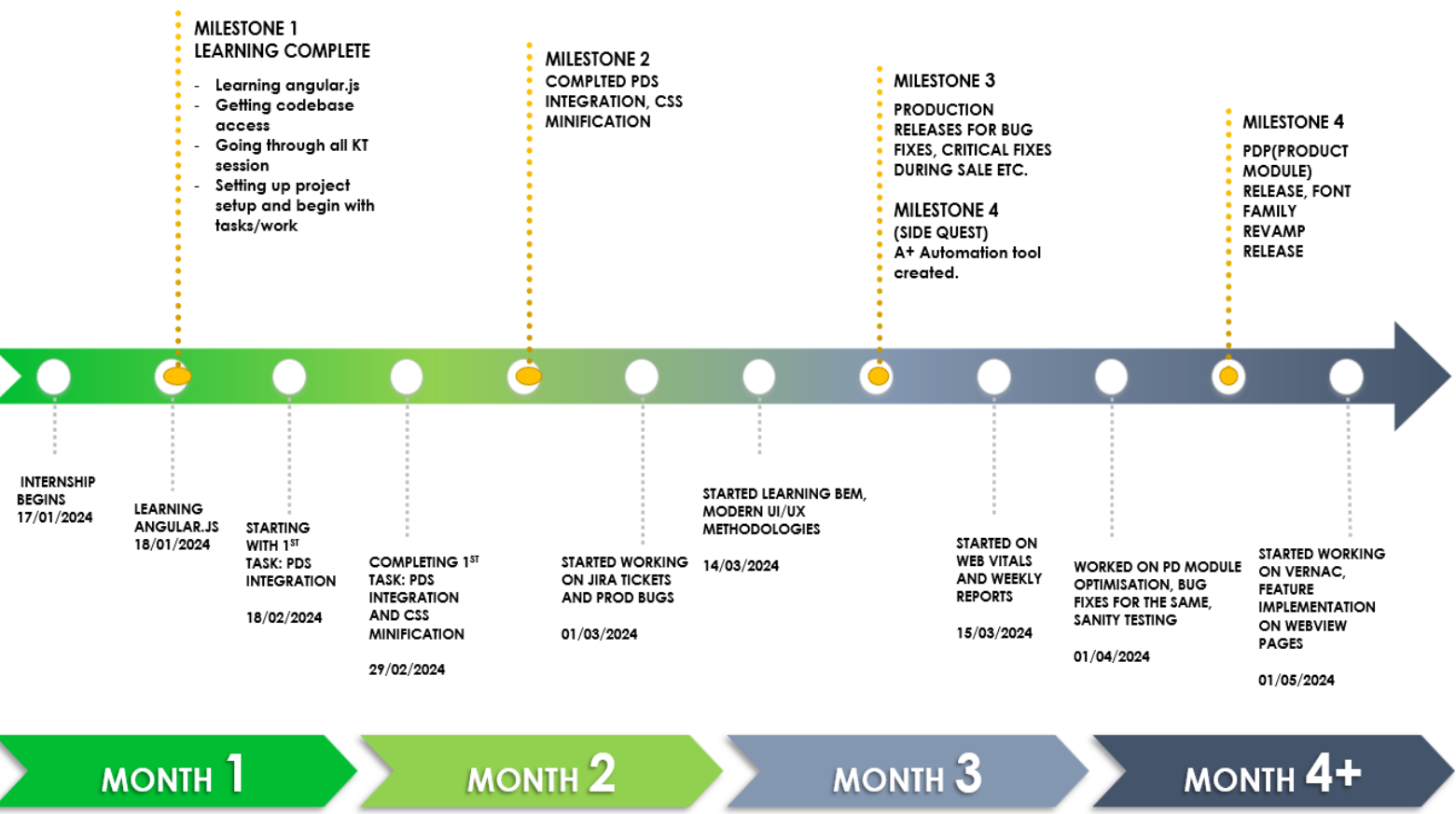
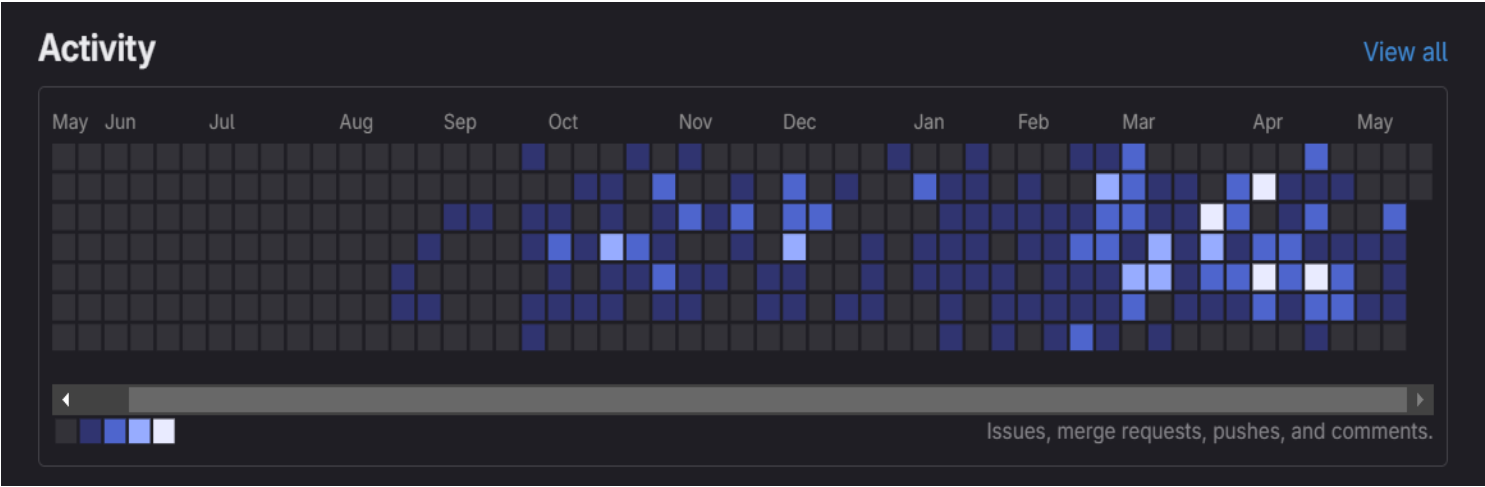**Gitlab commit graph showing commits/contribution throughout the internship period:**

Fig. 9: Gitlab commit/activity graph

Chapter - 6: Glance at the Outcomes

Some outcomes/Proof of work done:

1. https://www.purplle.com/brand/good-vibes : PDS Integration in all the listing pages which includes brands, categories, offers, explore, new launches etc pages.

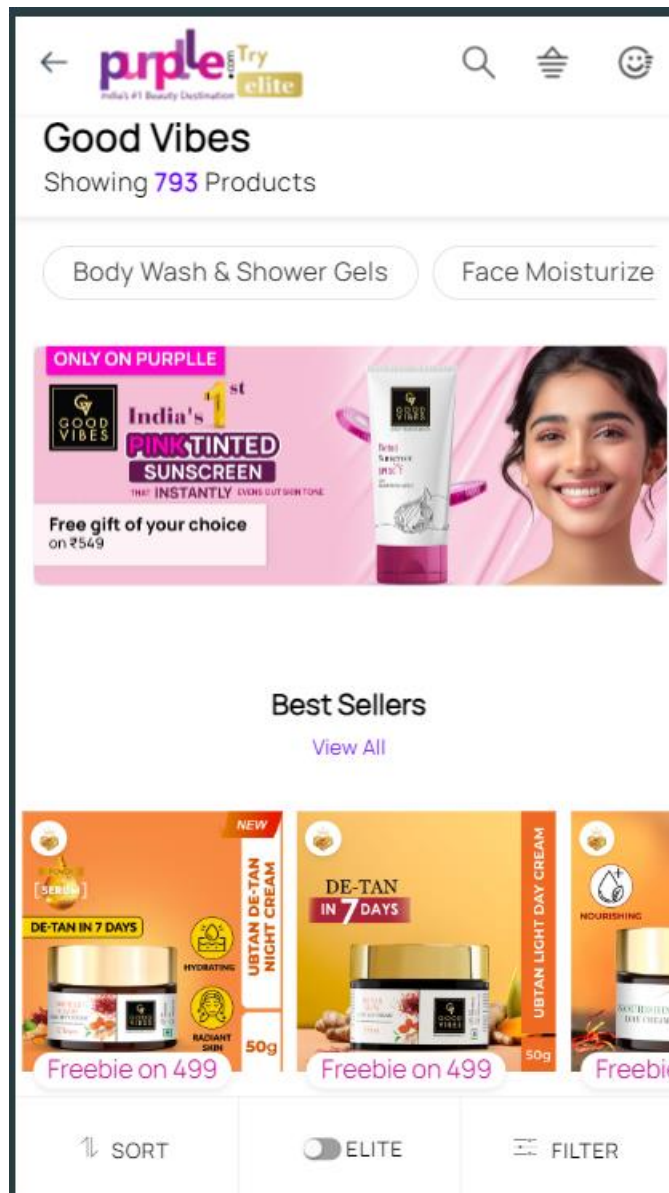*Fig. 10: Screenshot of Good Vibes brand listing page in Purplle's m-site*

2. https://www.purplle.com/wv/support/home : Implementation of some fixes for the customer support pages, which also include for IOS and Android page as this been web view page.

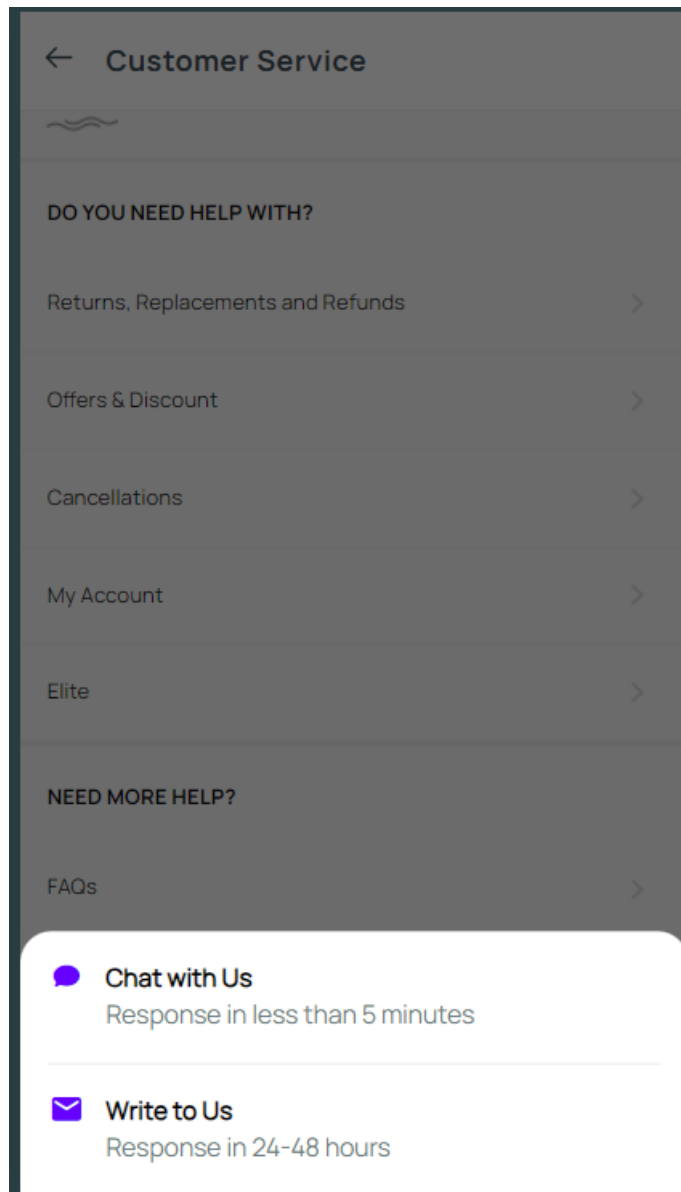*Fig. 11: Purplle's in-app/web customer support (CS) page*

3. https://www.purplle.com/product/good-vibes-serum-powered-beauty-de-tan-glow-night-cream-ubtan-50-g-17 : UI revamp of the product module, bug fixes reported by QA on JIRA, lighthouse performance analysis and CLS improvements.
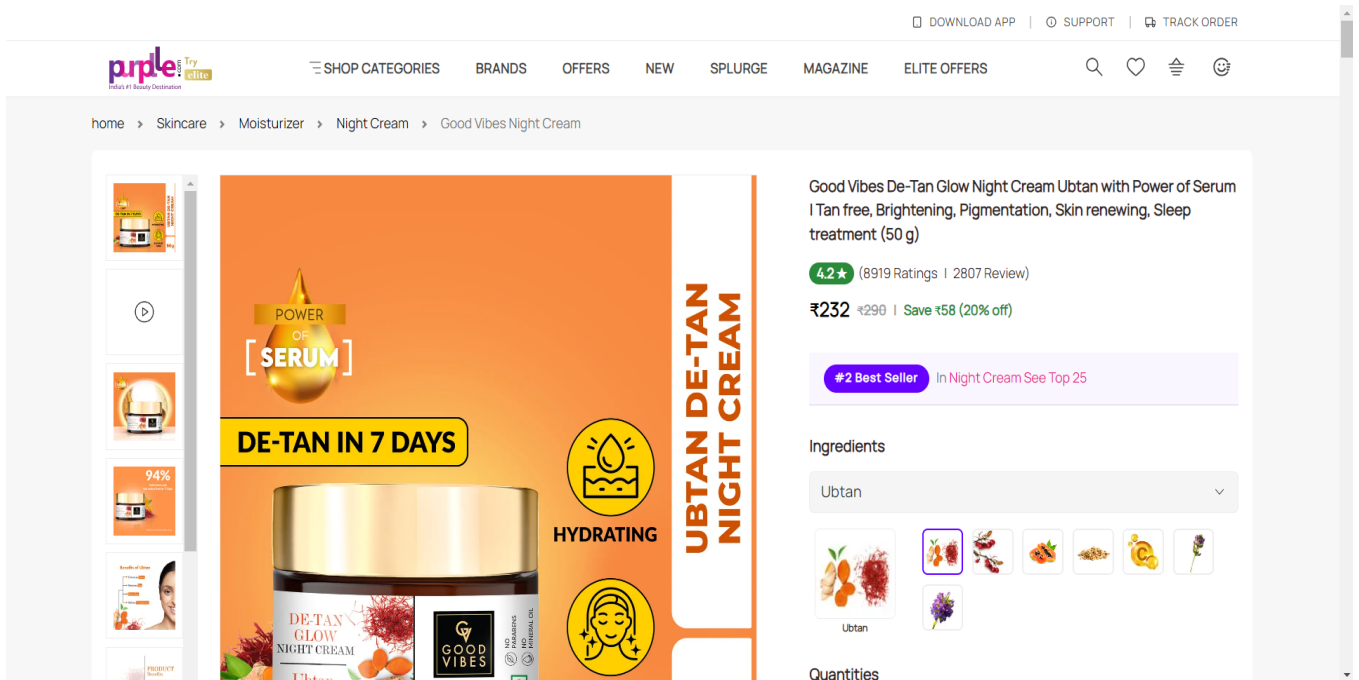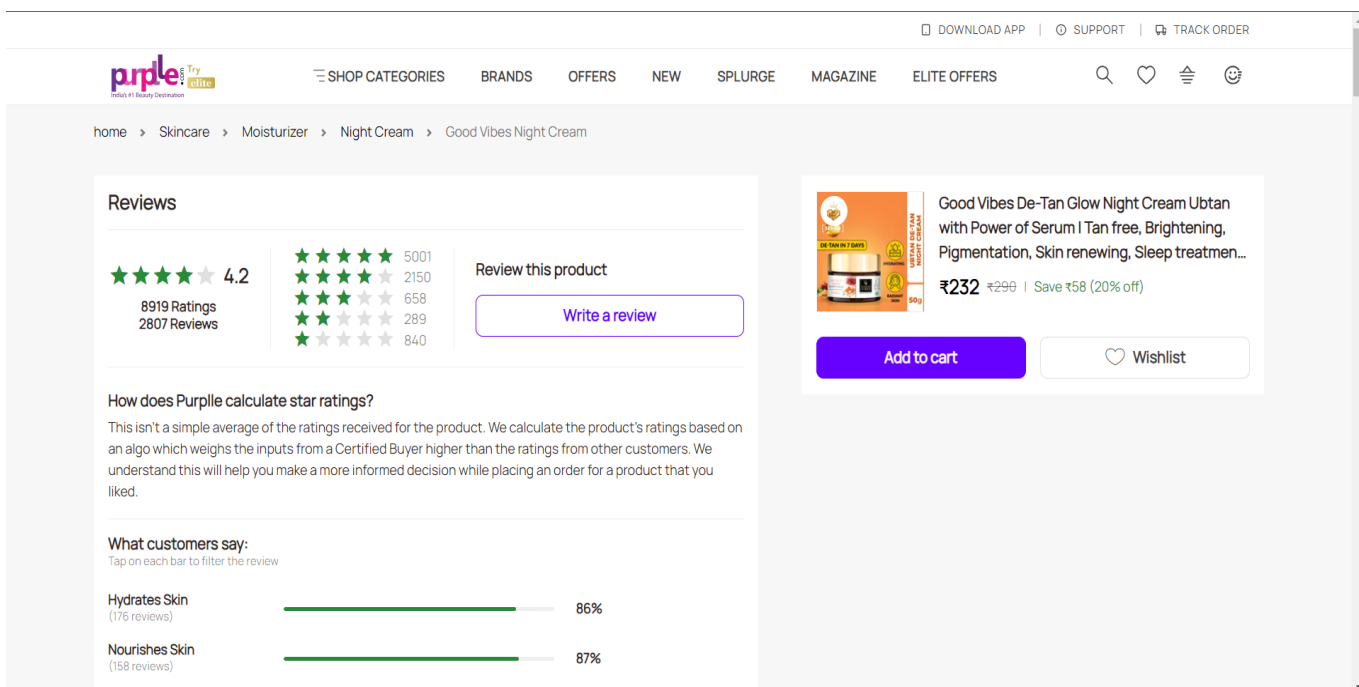

Fig. 12: Desktop site PDP

Fig. 13: Desktop site PD reviews page

4. https://www.purplle.com/wv/categories : Implementation of Vernacular (multi linguistic support for local languages in web view pages (in App)).

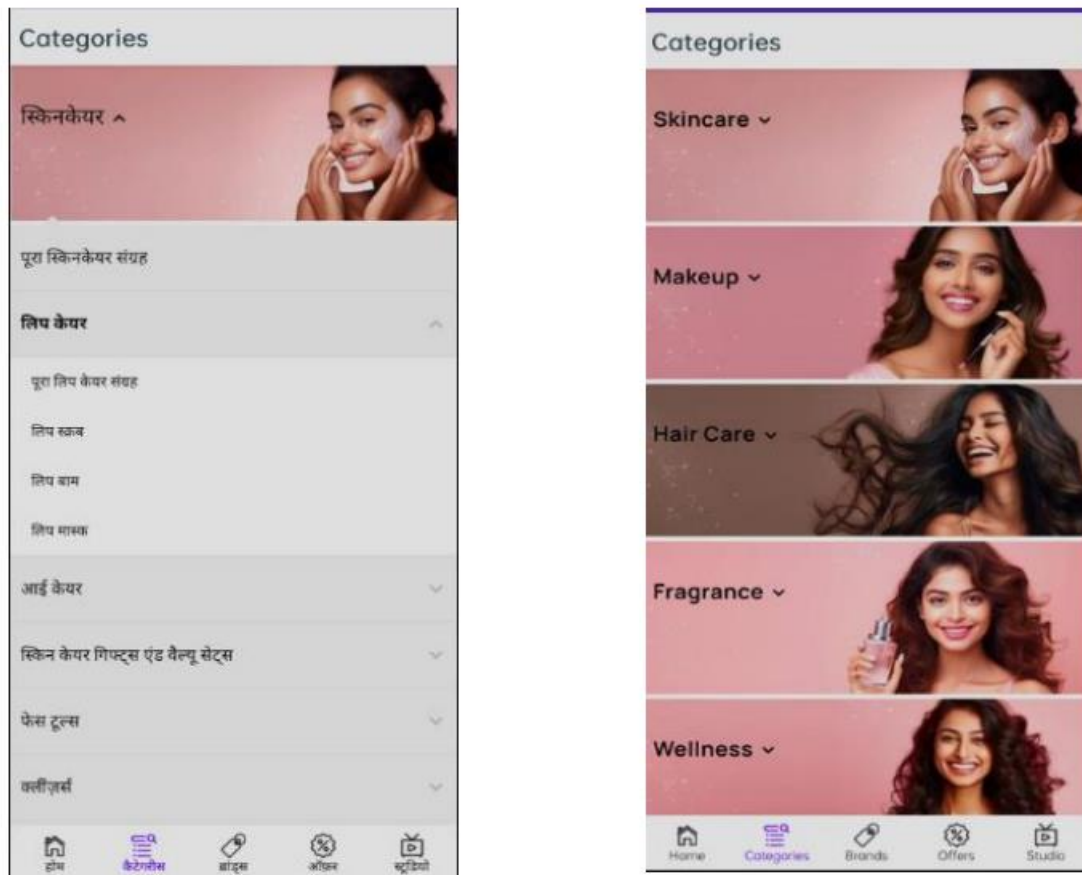*Refer Fig.13(i) and Fig.13(ii) for image preview*

Fig. 14(i) and Fig. 14(ii) respectively for Hindi and English version

5. https://test.purplle.com/ : Revamping the font family for entire application (currently in QA).

This is currently in QA so no screenshots available. Changes include change in overall font family of the entire web application.

6. https://sandbox.purplle.com/ : Implementation of pin code sync for Cart module, PDP(product) module, checkout module, Profile(add-edit address) module.(currently in sandbox playground for sanity testing).

This task is currently in QA, so no screenshot available. The task included syncing the pin code entered by user throughout the website, i.e. maintaining uniformity in the pin code.

Chapter - 7: Conclusion

Conclusion:

My internship as a Frontend Engineering Intern at Purplle, spanning from January 17, 2024, to July 17, 2024, has been an enriching and transformative experience. Throughout this period, I have had the opportunity to immerse myself in various aspects of frontend development, honing my technical skills and gaining valuable insights into the workings of a successful unicorn startup.

As I near the completion of my six-month internship at Purplle, I reflect on the invaluable experiences and knowledge I have gained. The supportive and collaborative environment, combined with challenging and impactful projects, has prepared me well for a future career in software development. I am optimistic about the possibility of transitioning to a full-time role at Purplle, where I can continue to contribute to the team's success and further develop my skills as an Associate Software Engineer, eventually progressing to an SDE-1 role and beyond.

In conclusion, my internship at Purplle has been a significant milestone in my professional journey. The comprehensive exposure to frontend development, combined with the opportunity to work in a dynamic and fast-growing company, has been immensely rewarding. I am grateful for the mentorship and support I received from my colleagues and superiors, which played a crucial role in my personal and professional growth. Looking ahead, I am excited about the prospect of continuing my journey with Purplle, leveraging the skills and experiences I have gained to contribute to the company's ongoing success.

Joining Letter Snapshot

purple.com
India's #1 Beauty Destination

**LETTER OF EXTENSION OF
INTERNSHIP**

Name: Gunjan Ashok Bhanarkar   **Date of Joining:** 17th January 2024

Subject: Internship Offer

Duration: 6 Months

Dear Gunjan,

On behalf of (Manash Lifestyle Pvt. Ltd.), I am pleased to extend to you this offer of temporary employment as an Intern. If you accept this offer, you will begin your internship with the Company on 17th January 2024 and will be expected to work as per business requirements.

Fig. 15 Snapshot of Internship Joining Letter

References

- Angular documentation: Link: https://angular.io/docs
- Purplle.com Main website: Link: https://www.purplle.com
- Purplle.com test/beta website: Link: https://test.purplle.com
- Purplle.com sandbox playground site: Link: https://sandbox.purplle.com
- Purplle.com play store app download: Link: https://play.google.com/store/apps/details?id=com.manash.purplle
- Purplle.com IOS store app download: Link: https://apps.apple.com/in/app/purplle-beauty-shopping-app/id1078972948
- Gitlab documentation: Link: https://docs.gitlab.com/
- PDS npm package: Link: https://www.npmjs.com/package/@purplle/pds
- JIRA documentation: Link: https://confluence.atlassian.com/jira
- Google page speed dev insights: https://pagespeed.web.dev/