PROJECT SEMESTER REPORT

On

Full Stack Development Internship at GretXP

Submitted By

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Under the Guidance of

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THAPAR INSTITUTE
OF ENGINEERING & TECHNOLOGY
(Deemed to be University)

Submitted to the

Computer Science & Engineering Department
Thapar Institute of Engineering & Technology, Patiala

In Partial Fulfilment of the Requirements for the Degree of

Bachelor of Engineering in Computer Engineering at

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May 2024

Title: Full Stack Development Internship at GretXP

Submitted by: Abdul Basit Bhat

Place of work: GretXP Sanderling Experiences Pvt. Ltd.

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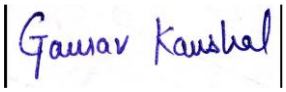
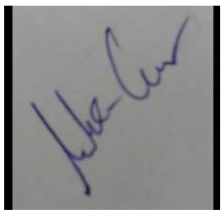
This report is verified and certified by





Industrial Mentor
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ACKNOWLEDGEMENT

I would like to express my sincere gratitude to the following individuals and organizations for their invaluable support throughout my internship at GretXP.

1. Mr Gaurav Kaushal my industrial mentor, for providing me with this incredible opportunity and for his constant guidance and mentorship. His expertise, patience, and willingness to answer my questions were instrumental in my learning and development.

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3. Dr. Mahak Gambhir Mam for providing me with support needed during the internship process. The guidance and help from her side as a faulty mentor were crucial to this internship.

I would also like to express my gratitude to my family and friends for their unwavering support and encouragement throughout my internship. Their belief in me motivated me to push myself and strive for excellence.

Finally, I want to thank myself for taking on this challenge and embracing the opportunity to learn and grow in a professional setting. This internship has been a valuable stepping stone in my career journey, and I am grateful for the skills and experiences I have gained.

ABSTRACT

This abstract summarizes a 5-month internship at GretXP as a Full Stack Developer. The internship led to a huge amount of exposure to wide range of technologies like React for frontend development, Django for backend development and third-party technologies and frameworks like Three JS, React Quill, Draft JS, OpenAI APIs, Paypal SDK, Cloud based services etc. This internship has led to a transformative phase for my personal and professional growth. The objectives of this internship were to help in development of new features and lead the BuildVR offerings towards utilization of AI technologies.

Through research and implementation of various technologies, the internship enhanced technical skills and imparted a sense of requirements of leadership skills. Through implementations of various features, from the phase of designing the requirements, researching best technologies and implementing them to satisfy the requirements, led to an overall understanding of software development and maintenance.

This internship also led to an understanding of best practices in modern software development like scalability, maintainability and explainability. The experience contributes to an overall development as a software engineer, paving out a well-defined framework to use in industry and lead to a high performance in professional realm. Under good guidance, this phase of academics led to developing technical mindset, leadership skills, professionalism and work ethic.

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Internship Certificate

1 message

Gaurav Kaushal <gaurav.kaushal@gretxp.com> Fri, May 17, 2024 at 4:07 PM
To: Abdul Basit Bhat <abhat_be20@thapar.edu>
Cc: Prerna Singh <prerna@gretxp.com>, Gretxp team <info@gretxp.com>

Hi Abdul,

As your industrial mentor, I certify that **Mr. Abdul Basit Bhat** has worked as a Full Stack Developer Intern on the project assigned to him at **Sanderling Experiences Private Limited** to our satisfaction. Our assessment of his overall project efforts and learning is excellent.

We wish him the best in his future endeavors.

Regards,
Gaurav Kaushal
Book a call with me: Here
Find out more about us: www.gretxp.com
Follow us on Twitter

Internship Certificate (2).pdf
59K

Mr Gaurav Kaushal (Product Manager GretXP)

PROVISIONAL INTERNSHIP CERTIFICATE

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TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mr. Abdul Basit Bhat** student of Thapar Institute of Engineering and Technology, Patiala has undergone project training with **Sanderling Experiences Private Limited** as per details given below:

PROJECT TITLE: Full Stack Development Internship at GretXP

TRAINING PERIOD: 03/01/2024 - 10/06/2024

He has completed the above project to our satisfaction and our assessment of his overall project efforts & learning is excellent. During the training we found him hardworking, eager to learn and with good initiative. He was able to develop good interpersonal relations with people in the Company.

We wish him very best in his future endeavours.

With Best Wishes

Sanderling Experiences Private Limited

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CHAPTER 1: COMPANY PROFILE

1.1 Overview

GretXP is a startup company at the forefront of innovative website design, specializing in the creation of immersive virtual reality (VR) experiences. It was founded on the belief of traditional 2D websites lacking user engagements. GretXP offers a suite of services designed to revolutionize how businesses interact with their customers and how 3D creators showcase their work. It focuses on catering the market need of engagement-based UI, allowing the users to create the engagements by themselves using no code technology or get a complete website made by experts based on the requirements of the user.

1.2 BuildVR

BuildVR offering of GretXP is a no code website or experience builder that allows the user to integrate the virtual showrooms and tours inside a website or experience. The hosting and performance of the website are taken care by GretXP itself in order to make the development of such websites or experiences as quick and easy as possible and abstracting the technicalities, ensuring a quick transition from a 2D website online presence to a 3D experience ensuring more engagement. This offering ensures that the tool is accessible to anyone with or without technical knowledge of creating a website or 3D Experience. A person with no coding experience can create a highly engaging website in minutes, without writing any code. Hence this offering can be used by the marketing team of a small firm without the need of hiring any developers for the purpose. Apart from business customers, the offering can be used by anyone who wants to create a modern website without technical knowhow.

1.2.1 Features

1. **Website Builder:** This tool provides the users the ability to create modern websites with latest technologies and trends of the market. Beyond BuildVR, GretXP offers a broader 3D website builder service. This service caters to businesses seeking a more comprehensive approach to 3D web design. It encompasses features such as adding interactive 3D elements, crafting immersive experiences, and integrating seamlessly with existing marketing strategies.

2. **Virtual Showrooms:** Their virtual showroom service allows businesses to showcase their products in a 3D environment, enabling customers to interact with products in a realistic and engaging way. This can be particularly beneficial for businesses that sell physical products online. This ensures a great presence of the offerings of a business product by satisfying the end user with whole experience of the product rather than 2D images.

3. **Virtual Tours:** GretXP's virtual tour service allows businesses to offer immersive virtual tours of their facilities, properties, or even historical landmarks. This can be a valuable tool for businesses in the hospitality, real estate, and education sectors. The tool is highly capable in developing virtual versions of any landscape, thus highly useful in the tourism aspect of that landscape. As BuildVR allows to embed the virtual tours in websites, it proves out to be a complete package for the end user.

GretXP is an innovative startup revolutionizing website design with its immersive virtual reality (VR) experiences. Founded on the premise of enhancing user engagement, GretXP offers a range of services catering to businesses and 3D creators alike. Its BuildVR offering simplifies website and experience creation through a no-code builder, ensuring accessibility to users of all technical levels. With features like website building, virtual showrooms, and virtual tours, GretXP empowers businesses to craft modern, engaging online experiences effortlessly. By seamlessly integrating interactive 3D elements and immersive environments, GretXP enhances customer interaction and satisfaction, making it an invaluable tool for businesses across various sectors, from e-commerce to hospitality and education.

CHAPTER 2: INTRODUCTION

The nature and scope of this internship focuses on implementing academic knowledge and technical understandings to enhance the services and generate more value for the end users of BuildVR offering of GretXP. The focus of this internship is to learn, understand and implement in the scope of Software as a Service (SaaS) and 3D content creation for the web domain at GretXP and in general work on software development requirements of the firm. The personal objective is to achieve industrial knowledge and workflow understanding in order to pave out a smooth transition to the professional world of software development. Ensure utilization of academic learnings in real projects and build strong foundation for the professional life ahead.

The scope of this internship involves understanding and addressing challenges like:

1. SaaS Development:

1. **Scalability**: Ensuring the platform can efficiently handle growing user traffic and data demands. Making new features and reinforcing existing ones to handle growing user traffic.

2. **Subscription Management:** Understanding user subscription models and implementing functionalities related to billing and access control. Working on technologies like Paypal SDK and implementing various payment and subscription workflows.

3. **Creating and maintaining Application Programming Interfaces:** Working on developing models and utilities on backend to ensure a smooth operation of various features on frontend. This includes extending the architecture to increase the offerings and features provided.

4. **Search Engine Optimization:** Ensuring higher crawler ratings and accessibility on major search engines. Working on technologies like React Helmet, Server-Side Rendering (SSR) etc. to lead to higher indexing by major website indexing crawlers like Google and Bing.

5. **Maintenance and Bug Fixes:** Ensuring the software is continuously monitored for smooth working and resolving any issue at the earliest. Leading testing sessions on various features and rectifying any bug or optimization loopholes.

6. **Migrations from older technologies to newer ones:** Migrating existing technologies to newer ones that offer more features, scalability, stability, security etc.

7. **Research and Implementation:** Researching and gaining insights about new technologies and best practices to implement a feature or modify any existing feature for performance and value offering considerations.

8. **Value Generation:** Implementing new features that create more value to the already existing offerings. Powering the offering with Generative AI capabilities for code generation, content generation and Image generation requirements.

2. Creating 3D Web Content Creation Tools:

1. **User Interface (UI) Design:** Creating intuitive and user-friendly interfaces for seamless 3D content creation. Enhancing existing UI to ensure accessibility. Keeping the design accessible to anyone with or without technical knowhow of website creation.

2. **Performance Optimization:** Optimizing code and assets for smooth and visually appealing 3D content on the web. Getting the best of the system architecture and constantly trying to improve the performance by using best practices and replacing older technologies with new ones.

3. **Adding New Tools and Features:** Contributing to the development and implementation of new features that expand the platform's capabilities and address evolving user needs. This includes creation of fully functional text-editors, subscription management using technologies like Paypal SDK, Generative AI capabilities for content, code and image generation etc.

4. **Powering the creation tools with Generative AI Technologies:** Creating architectures to support the integration of AI technologies into the already existing offering and hence powering the user with Generative AI. All this leading to improved value of the offering and easier workflow of end user.

CHAPTER 3: BACKGROUND

The BuildVR offering of GretXP is a website creation and 3D asset creation tool. It uses no code tools and features to help the users create a visually appealing and engaging website within minutes. It provides features like creating a website strip by strip and add images, videos and even 3D experiences to it. The 3D experiences are either already in templates, or a user can create one or a user can generate one created by the development team. The product also features almost all the requirements of a website like navbars, text areas, buttons, links etc. The product also offers 3D Experience creation platform which consists of powerful tools backed by ThreeJs library. It provides tools to develop 3D models or use existing ones to create a virtual engagement. These models can then be integrated into websites. This internship provides opportunities to experience real world application of academic learnings and to utilize software developments and AI skills developed during the academic years. The main objectives are to develop, maintain, debug, optimize, inspect and research various aspects of the software.

The main areas of work are Generative AI features, third party technology integration and custom feature developments. The aim is to understand most of the aspects of development, workflows, work ethics, best practices and also utilize the academic knowledge to reinforce the learnings.

Internship Workplan

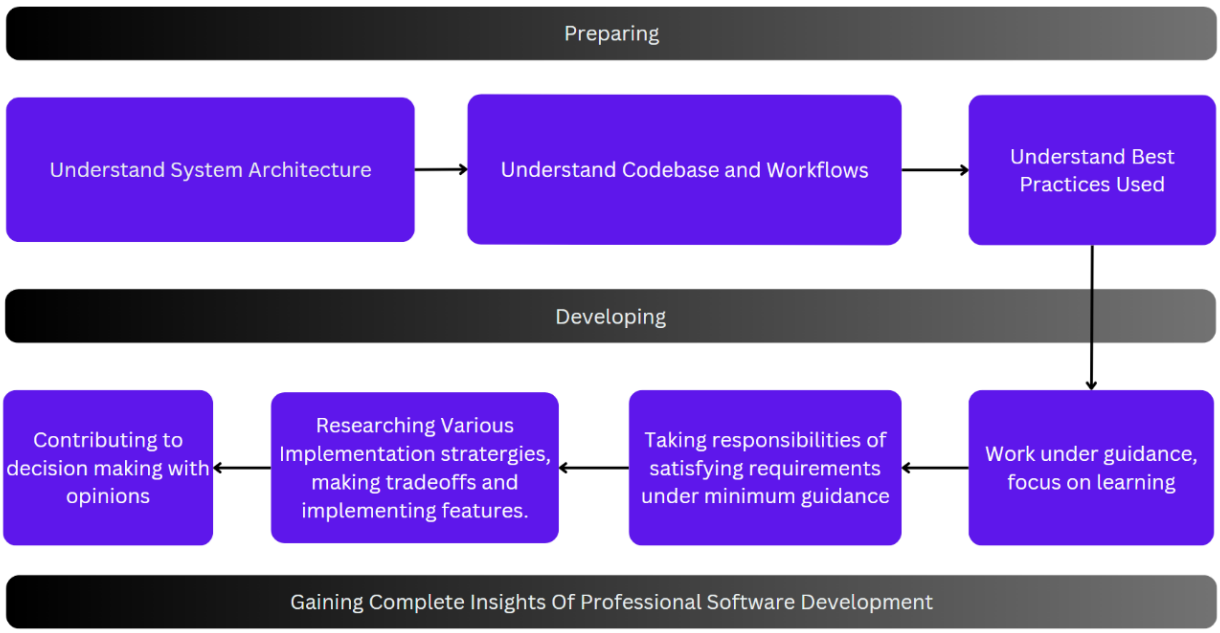


Fig 3.1 Flow of Internship

CHAPTER 4: OBJECTIVES

Non-Technical Objectives

1. **Understanding value generation:** Understanding how to validate ideas that can lead to an increased value of the offering of any software product. Gaining insights on how software offerings can be used to generate revenue by creating components that bring value to end user.

2. **Time management and work management**: Learn how to make most of the working time and also create a system to keep track of pending and completed work. Keep a system to track progress and ensure better time management.

Aa Task name	Process
Understanding Value Generation	Discussions with mentor on the impact of implementing requirements leading to generating value to end user.
Time Management and Work Management	Staying organized and maintaining a record of pending and completed work

Fig 4.1 Non-Technical Objectives

Technical Objectives

1. **UI / UX:** Work on designing new user interface and implementing them. Understanding user behaviour and developing highly accessible front-end components. Gaining expertise in ReactJS and being able to create responsive and highly accessible components.

2. **Backend development:** Collaborate with senior developers to identify and resolve backend issues, ensuring platform stability and scalability. Ensuring the platform can efficiently handle growing user traffic and data demands. Maintaining and creating new models, utilities and APIs related to new or already existing features.

3. **Code optimization:** Learn and implement code optimization strategies to improve platform performance. Understand best practices used in modern software development and align my coding pattern towards them. Ensuring optimal code contributions with proper scalability, security and explainability considerations.

4. **New feature development:** Work on creating components from scratch under full responsibility of development lifecycle of those components. Gather requirements, research best technologies, consider trade-offs and implement the feature ensuring seamless integration to system architecture.

5. **Artificial Intelligence integration:** Research different third-party AI tools and their offerings. Work on the ones that get approved by the development team. Hence help in enhancing the user experience and increasing efficiency. Understand and gain experience in using OpenAI APIs and implementing Generative AI features.

6. **Search Engine Optimization:** Ensuring higher crawler ratings and accessibility on major search engines like Chrome and Bing.

7. **Understanding system design principles:** Understanding the architecture and design of BuildVR and gaining insights on how massive systems can be created and maintained.

Aa Task name	Technology Used
UI / UX Design	ReactJS, React Native, ThreeJS
Backend Development	Python, Django, RESTful APIs
Code Optimization	
New Feature Development	ReactQuill, DraftJS, OpenAI APIs, Paypal SDK, DALL-E 3, ChatGPT 3.5 Turbo
Artificial Intelligence Integration	OpenAI APIs, ChatGPT Turbo, DALL-E 3
SEO Optimization	React Helmet, SSR, SSG
Understanding System Design	

Fig 4.2 Technical Objectives

CHAPTER 5: METHODOLOGY

The objectives of this internship are achieved by following methods like:

1. **Understanding:** Ensuring complete understanding of the codebase, the requirements of offerings, best practices used, architecture, production lifecycle, strategies, vision of the firm to the best of my potential and getting myself aligned to them.

2. **Skill Enhancement:** Getting adequate amount of expertise in the technologies required. Also get skilled in following documentations and proper procedures in developing and improving features. Learning new technologies as required and enhancing knowledge of already known technologies. Trying to be active on the market trends and aligning learning towards those trends.

3. **Best Practices:** Try to learn and follow best practices and ensure proper workflow with proper documentation. Keeping scalability and explainability in mind and trying to write clean code. Getting work reviewed by the mentor to learn from the mistakes and flaws.

4. **Mentorship:** Ensure getting proper mentorship whenever stuck and learning from the developer community on social media and other platforms. Staying active on leaning platforms and gaining knowledge from the experts.

5. **Contribution and active participation:** Contributing my opinions and ideas to the development team and ensuring to be an active member of decision making. Taking responsibilities of various feature development projects.

6. **Collaborative development**: Embracing modern technologies like source control tools and online meeting platforms, leading to collaboration of developer team in delivering features and satisfying requirements fast and accurately by developing features in parts, constant code reviews, online meetings and discussions.

CHAPTER 6: OBSERVATIONS & FINDINGS

6.1 Patterns and Trends

The internship period was crucial to gain insights about modern software development patterns and trends. Some of the insights are:

1. **Modern software offerings rely heavily on third party offerings:** The development time and maintenance are highly reduced using third party offerings. This leads to quicker feature development lifecycle. The power of this practice seems evident when the value of an offering gets multiplied manyfold due to a use of a single third party offering. Some of the most useful of these technologies were OpenAI APIs like GPT-3.5 turbo and DALL-E 3.

2. **Modern software development follows agile and scrum development**: These workflows are highly effective over any conventional workflow. Agile and scrum workflows create a huge impact on the overall product quality, completion rate and user satisfaction.

3. **Source control dominates development workflows:** Most of the features are developed in parallel using source control software and collaboration. There is a high value for code cleanliness and explainability. This makes collaboration highly achievable and desirable.

4. **Test servers are highly useful to simulate production level testing:** The new features are first deployed on test servers and it undergoes thorough testing on the test production environment. This is due to the reason of features behaving differently on localhost and on cloud technologies.

6.2 Deviations from previous experiences

Professional software development is highly different from the personal projects created by a student during his academics. There are a lot of considerations taken care off in industry level software. Some of the major differences are:

1. **Security:** This concept is the most important for professional software and is at a greater priority in the checklist of a software. This level of importance is not evident in personal projects.

2. **Scalability:** Features developed in industry level software need to be highly scalable. While in personal projects, the scalability is not a concern and most of the problem solving is applied on development of feature and making it work. But in professional work software features, no matter how powerful, are of no use unless they are scalable.

3. **Explainability:** The code written for professional software are highly explainable in the code itself. The concept of clean code is obvious best practice. As most of the software are made through collaborations, making the code understandable is a key to prevent unnecessary bottlenecks.

6.3 Successes and Learnings

Some of the major successful implementations in this internship were:

1. **Getting to work on complete feature development workflow:** During the internship, there were a number of features that needed to be developed completely on my own. Some of them were using OpenAI APIs to implement an automatic code generation, image generation and content generation. Using ReactJS libraries to implement features like text-editor using ReactQuill and Draft.js. All the components of the development cycle like researching technologies, doing trade-offs, deciding implementing etc. developed a software engineering mindset. This phase of the internship led to development of professionalism and technical understanding beyond coding.

2. **API development:** Most of the work was related to development of APIs for different features. The process for API development consisted of creating models, making utilities to do operation on those models, creating endpoints and testing the APIs extensively using Postman.

CHAPTER 7: LIMITATIONS

There were some limitations in the offering of BuildVR as well, but most of them are overcome using different strategies. These limitations were seen very less often.

1. **Limitations of flexibility:** While the BuildVR offering is a no-code website builder with 3D experience integrations, it is not necessarily a replacement for developers in large firms. The offerings get limited when the requirement is very detailed and needs custom builds. This issue is already rectified by GretXP by providing custom workforce to serve clients with such requirements.

2. **Resource Intensive:** The 3D technologies are resource intensive and at a given threshold will lead to issues if a website is loaded with a large number of 3D experiences. While modern browsers are getting more and more optimized this problem seems to be limited to some browsers only.

3. **Limited toolset:** Although the toolset is highly extensive to create 3D experiences and website, in cases of detailed requirements, it cannot perform as well as offline software offerings like AutoDesk, Blender etc to create detail intensive models and 3D experiences. This issue is also rectified by GretXP by custom workforce offering. The experiences created in any local software like AutoDesk can also be imported into BuildVR.

Despite these limitations, the BuildVR tool remains a highly powerful and versatile platform for creating immersive 3D experiences and websites without the need for extensive coding knowledge. Its no-code approach democratizes the ability to build sophisticated virtual environments, making it accessible to a broader audience, including those without a technical background. The tool's extensive feature set allows users to integrate a wide range of 3D experiences seamlessly, and the ability to import detailed models from local software like AutoDesk ensures that the quality of these experiences is not compromised. Moreover, the support from GretXP's custom workforce addresses the need for more detailed and specific requirements, bridging the gap between ease of use and the need for bespoke solutions. As modern browsers continue to improve, the resource-intensive nature of 3D technologies will become less of an issue, further enhancing the performance and reach of BuildVR.

CHAPTER 8: CONCLUSIONS

This internship led to development of an accurate perspective of software development procedures in industries. It led to a tremendous development of the understanding of designing, implementing and maintaining software. Utilization of academic concepts into the real world made the knowledge complete. Under great guidance and mentorship, this opportunity paved a solid base for professional development.

Working on the features of BuildVR, led to enhancement of skills related to Full Satck development. There were both technical learnings and non-technical learnings. From designing features to implementing them, from working under guidance to taking full responsibility of features, this opportunity completed the transformation of student to skilled software developer.

The various learnings made during this internship were:

1. **Understanding capabilities, weaknesses and limitations:** There were a number of cases which were confidence boosting. Working on a set of features and requirements, one got to know his capabilities. There were times when the task didn't seem to be achievable. At such times, the mentorship was highly helpful. This led to quickly understanding weaknesses and rectifying them with working upon them.

2. **Understanding the importance of following best practices:** Best practices are of great importance as they define how scalable, maintainable and understandable the code is. Sticking to these practices even if time consuming can prevent complete redesign of features in future.

3. **Designing is more important than actual code:** A number of times, the features were to be redesigned due to some limitations. After a number of such cases, it got evident that designing is highly important and can lead to preventing redesigns in future.

4. **Maintaining a system to track progress in important:** Since software development is based on problem solving, sometimes there is a need to block out all the insights about certain aspects and just focus on one aspect of a feature. This made it easy to focus and create quality enriched components. Without keeping track of the

development tasks made it easy to zoom into a features development and zoom out after completion.

5. **Maintaining a balance in work from home job role is important:** Software development is highly dependent on the proper functioning of ones thinking. Sometimes it becomes necessary to take frequent breaks to prevent a sedentary lifestyle that can affect health adversely and hence decrease efficiency. Taking breaks and implementing a healthy lifestyle around the routines of software development is crucial to long term efficiency and health overall.

This internship provided a comprehensive understanding of software development procedures in an industrial setting, significantly enhancing my skills in designing, implementing, and maintaining software. Applying academic concepts in real-world scenarios completed my knowledge and underscored the importance of practical experience. Under expert guidance and mentorship, I built a solid foundation for professional growth, particularly in Full Stack development while working on BuildVR features. The experience involved both technical and non-technical learnings, transforming me from a student to a skilled software developer. Key learnings included recognizing my capabilities and limitations, appreciating the importance of best practices for scalable and maintainable code, understanding that thorough design is crucial to prevent future redesigns, and tracking progress to ensure focused and quality work. Additionally, maintaining a healthy work-life balance, especially when working from home, emerged as essential for long-term efficiency and overall well-being.

CHAPTER 9: WORK DIARY

Jan 1-15

I joined the GretXP as a Full Stack Intern on 3rd January 2024. I learned, found out and gained a good amount of experience of professional software development and engineering. I got familiar with the architecture of software. I had done good solo projects before and felt pretty confident in my code structure. But after getting to know about the importance of system design and the proper way software is maintained, it changed my perspective of writing code. The APIs and the distribution of the system made me gain real insights of professional code writing. Learnt about how it handles APIs, databases, API calls and a perfect blend of technology like React and Django. I felt my personal projects to be very less scalable compared to this and also got insights on how to make them scalable. I got to synchronize with the development team and have become a contributor. I am going to stick with writing scalable code and I will prefer documentation over other sources of technical knowledge.

Jan 16-31

After a good amount of time with the codebase I realized that I was able to complete the daily work pretty fast, allowing me to read more code and develop insights for new code updates. I realized that my opinions were becoming valuable to the team and I was assigned work according to them. I gained a good amount of experience in feature development and soon got to work on new technology. Previously I was working on Web Development and now I have to work on App Development. I learnt that if I can maintain this approach of being an active member, I can learn more in less time. At the end of these two weeks I am sure to be an active member of the team and provide my best energy to my work. I will try to learn more about the needs of the firm and try to provide my solutions. Even if its vague, I will be able to learn faster and even get more opportunities to learn.

Feb 1-15

After a month in the team I am now assigned my own research work. In these two weeks I am going to work on new features that need to be researched for best practices and technology to be used. I realized professional software are not built based on tutorials, and documentations are the most valuable asset to know about any new technology. I realized that documentations are the only thigs that don’t get obsolete for the technology it is meant for, as it is always in

updated state. For example I needed to implement a rich text editor, I researched and found out Draft JS to be the best tech. I used its documentation and was easily able to implement it and explain it to the team. I will continue to use documentation for any new feature I need to implement based on a new technology. This will provide me ease while explaining my work to the development team.

Feb 16-28

After good amount of time on the codebase, I was assigned to develop new features. There was a set of meetings with the marketing team. My job was to understand the requirements, discuss feasibility and maintain a set of future tasks based on the discussions. This was the first time I felt that what I do as a developer has a huge impact on marketing team. They are the ones who sell what we create. They are the first line of impact when anything wrong happens. I realized that my work needs to be refined as the marketing team has to be accountable for the mistakes I create. I will now onwards try to write better code and test them well before putting them into production. Try to encounter any bug in testing itself, so that the marketing team can work smoothly with my work.

Mar 1-15

We are in the age of AI. GretXP was interested in harnessing its power in its offering. There were a lot of things that AI can do pretty well. My job was to research some new AI technologies and try to bring out some that can be of great use to the end user and add to USP of the GretXP's offerings. I saw GretXP transition from a website builder, 3D model builder to AI powered website and 3D model builder. And this time I was the one that lead this change. My reflection is that with proper time on research and ideation, one can lead to impactful changes. I realized that I can actually use my knowledge of courses I did, in my actual work. As I had a profession certificate in IBM Applied AI, this task was the most satisfying one till date. I will continue to pursue more knowledge by pursuing some more courses and apply them in my field. It is highly satisfactory to implement ones learnings.

Mar 16-31

These 2 weeks were a bit hard for me. As I had raised the bar of my capabilities in the past weeks, I expected more from myself in everything. I was trying to be more productive and a kind of perfectionist. This led to me getting too overwhelmed, that I had to take some things out of my plate. During this I felt the need to actually be physically active too. I was having a

sedentary lifestyle and all this was affecting me in my focus and overall work quality. I realized that work was of good quality only when I was having a balance in life. I had put so much expectations on myself that I took more work than I could accomplish. Hence leading to getting overwhelmed and making me just get things completed. This affected quality of code. But at the end of this period, I got great help from Gaurav Sir who got me out of this rut. I will try to maintain a good lifestyle around my work, take necessary breaks and not overcommit to more work than I can do.

Apr 1-15

These 2 weeks were a transition of BuildVR tool offering by GretXP, form development life-cylce to production. Most of the work was assigned based on refining the offerings of the software. It started with creation of test server for first deployment followed by testing by a marketing team. I was informed to build and deploy on the test server and get the insights of the performance of the features I implemented in production environment. Most of the work was related to increasing performance of the offering and I managed to lead it to a score of 85+ from a score of 70. I realized the need of a test server as the software works differently on local machines and production environment. The performance is actually better on production than local machines, but there are some issues of some features requiring specialized changes for production. I concluded the necessity of a test server. It is a best practice to test before actual deployment.

Apr 16-30

These 2 weeks my work was mostly based on backend technologies. I was required to build more than 20 APIs and test them using Postman. These APIs were directly to be used in the features I had developed and I was given full freedom to work on them the way I wanted. It was more of a challenge to me as I knew that the freedom was given in order to test the level of my understanding and also grade me as how well I had developed during the internship. I was determined to use the best practices my mentor had subconsciously taught me while showing me often how he coded. I reflected that I had come a long way and now was capable of building such offering all my myself. Thanks to my mentor for providing this kind of mentorship. I became a better developer because of such a great mentorship. I will continue to use the knowledge I gained and even build on top of it in order to be the level of developer I can.

CHAPTER 10: WORK OVERVIEW

10.1 Front End Implementations

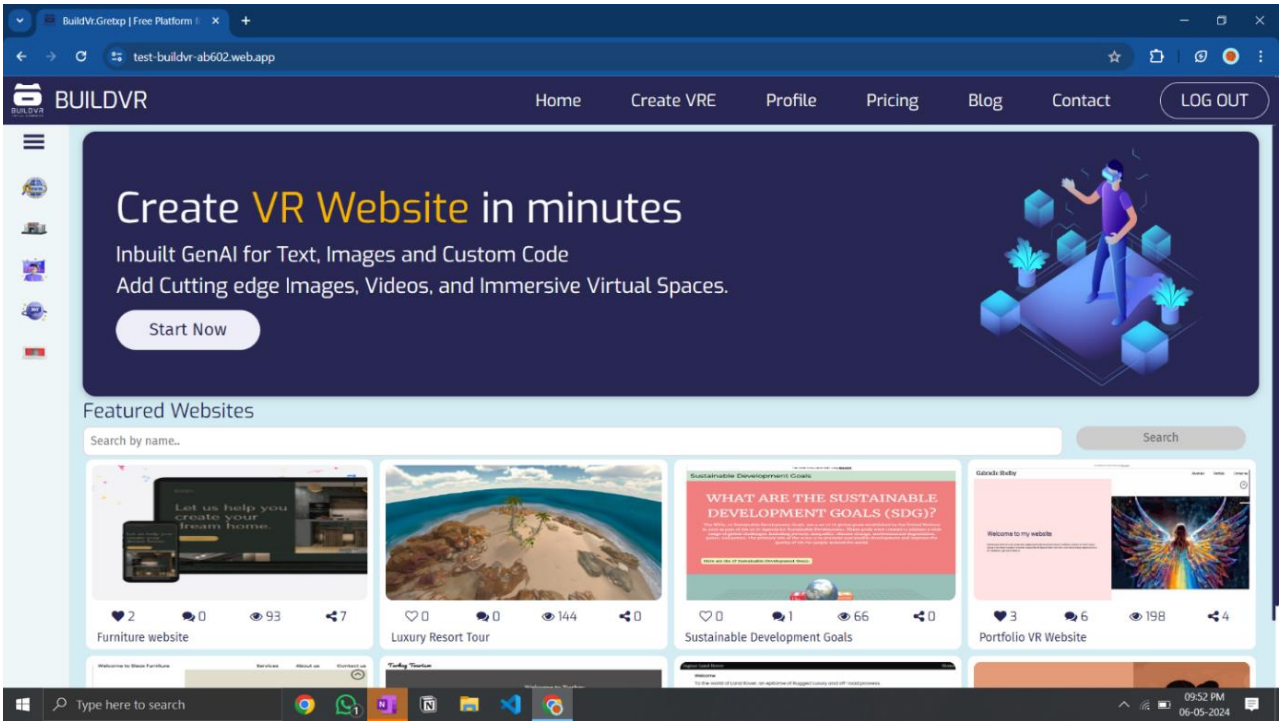


Fig 10.1 Development of new UI for home page.

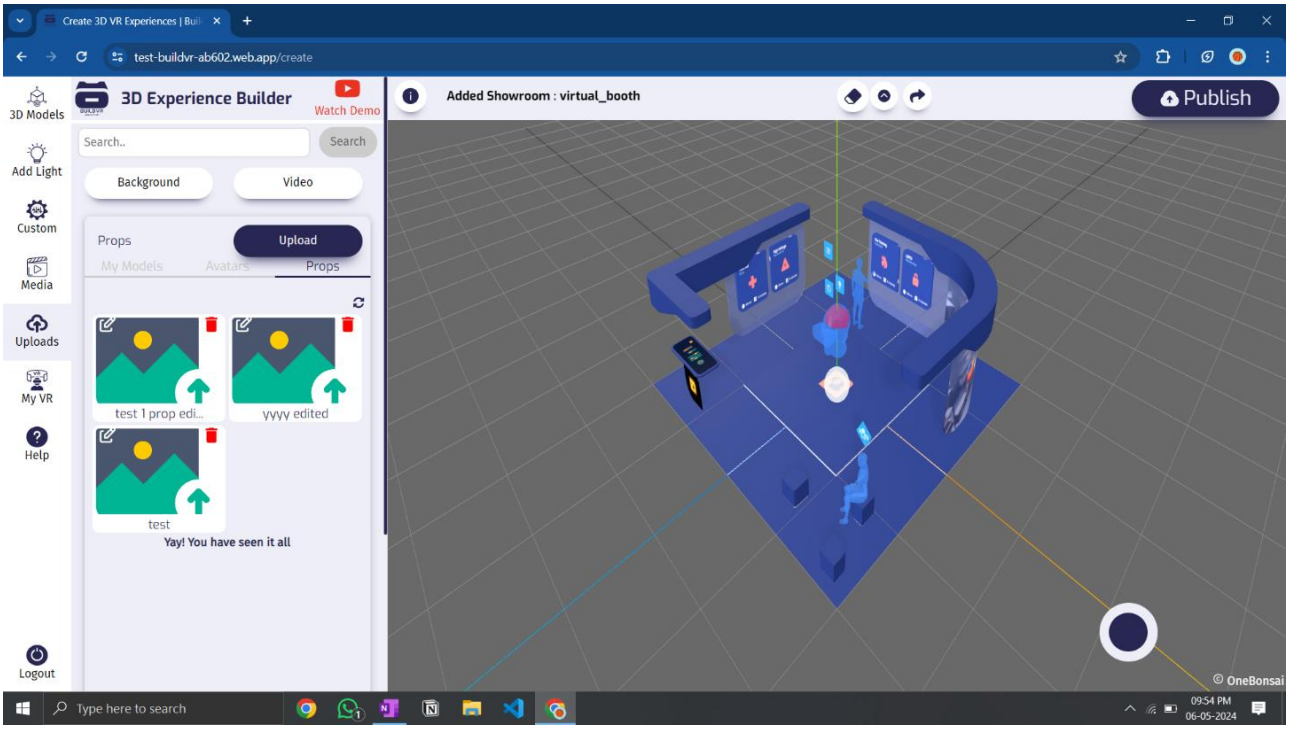


Fig 10.2 Modification and bug fix in uploads section.

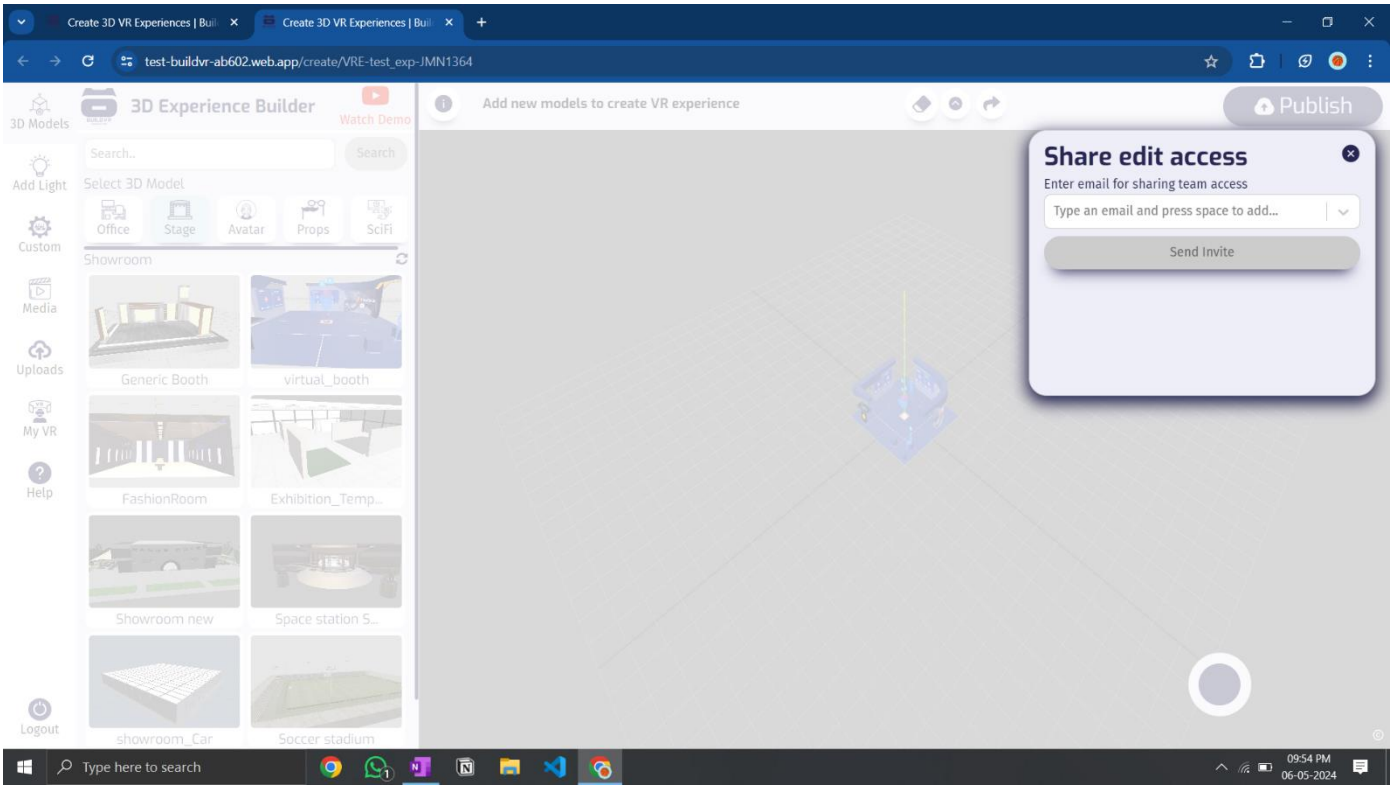


Fig 10.3 Developing a sharing system for 3D Experience.

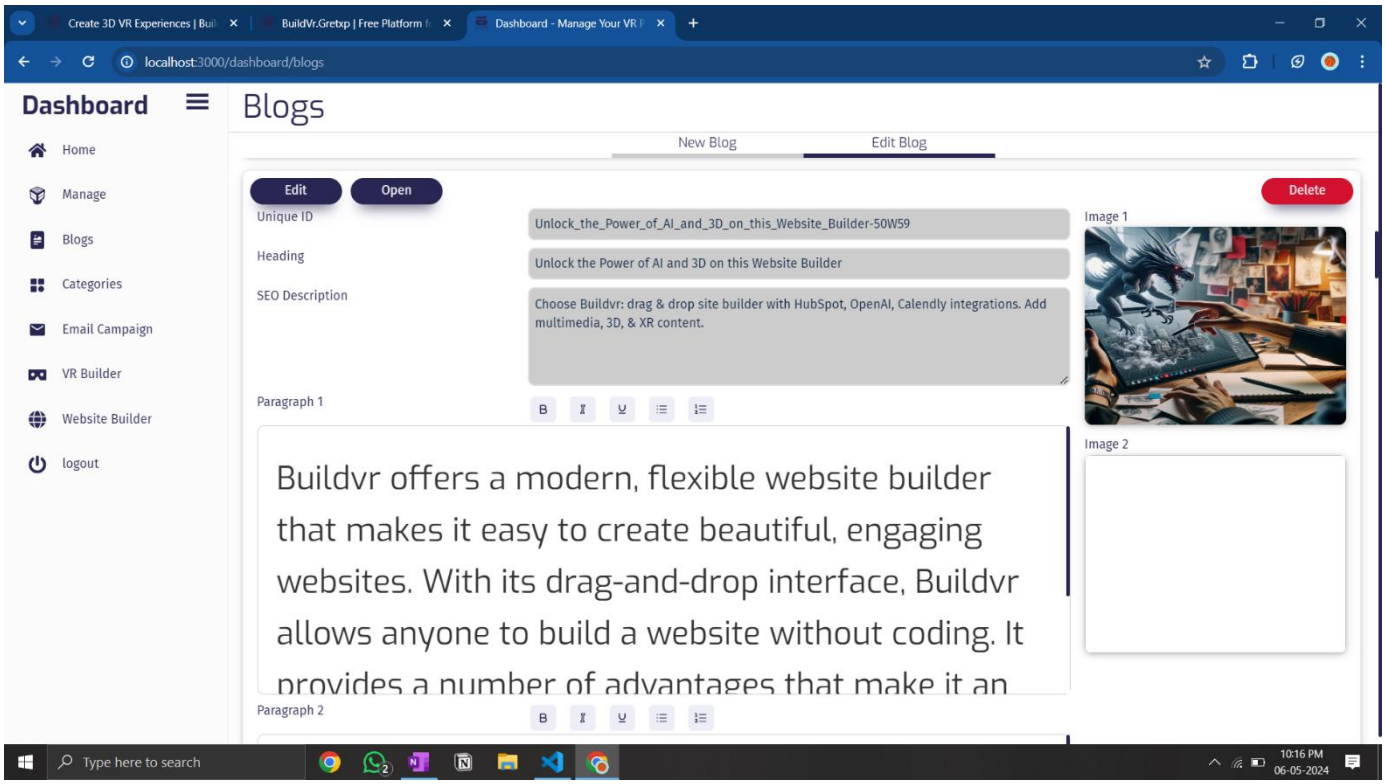


Fig 10.4 Migration from text-area to fully functional Draft JS text editor for blogs.

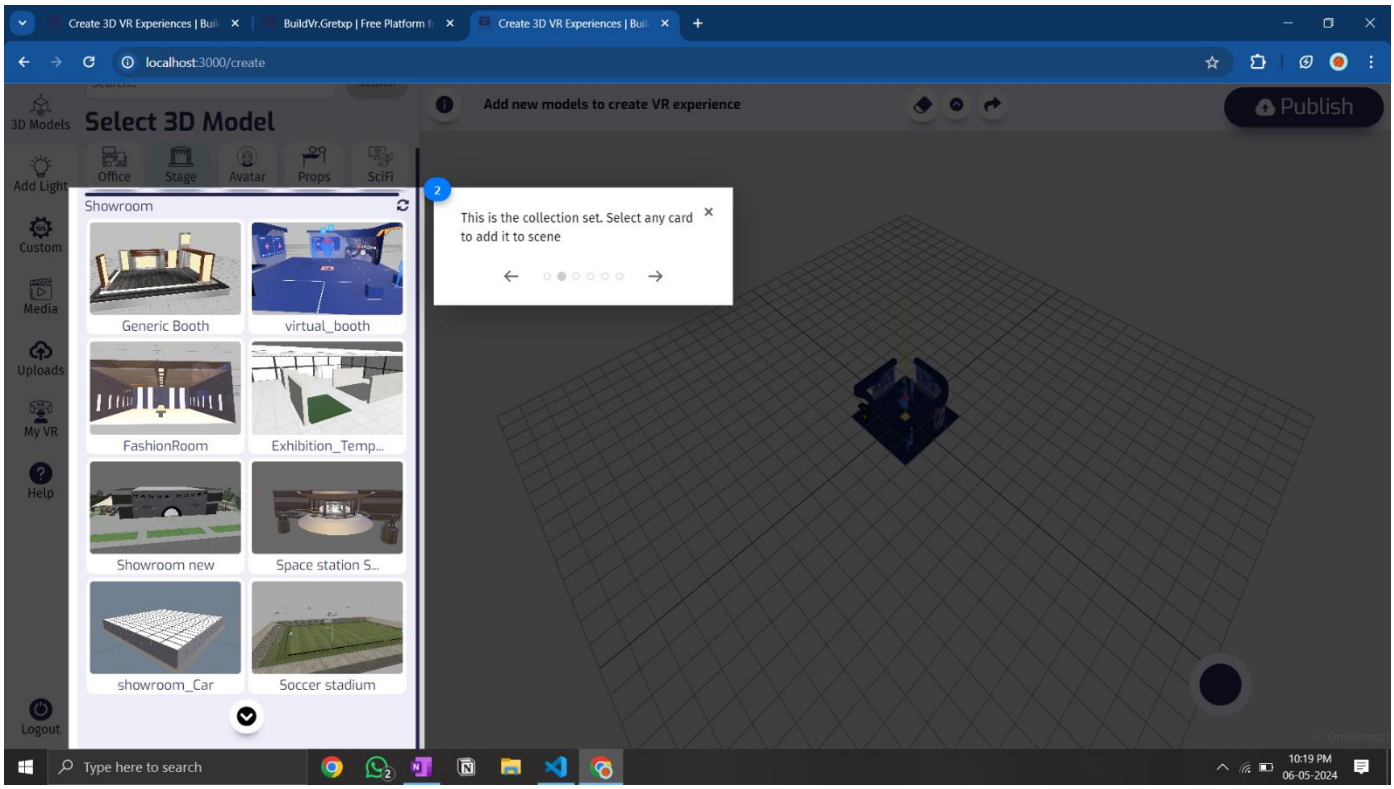


Fig 10.5 Implementation of React Tour for helping new users.

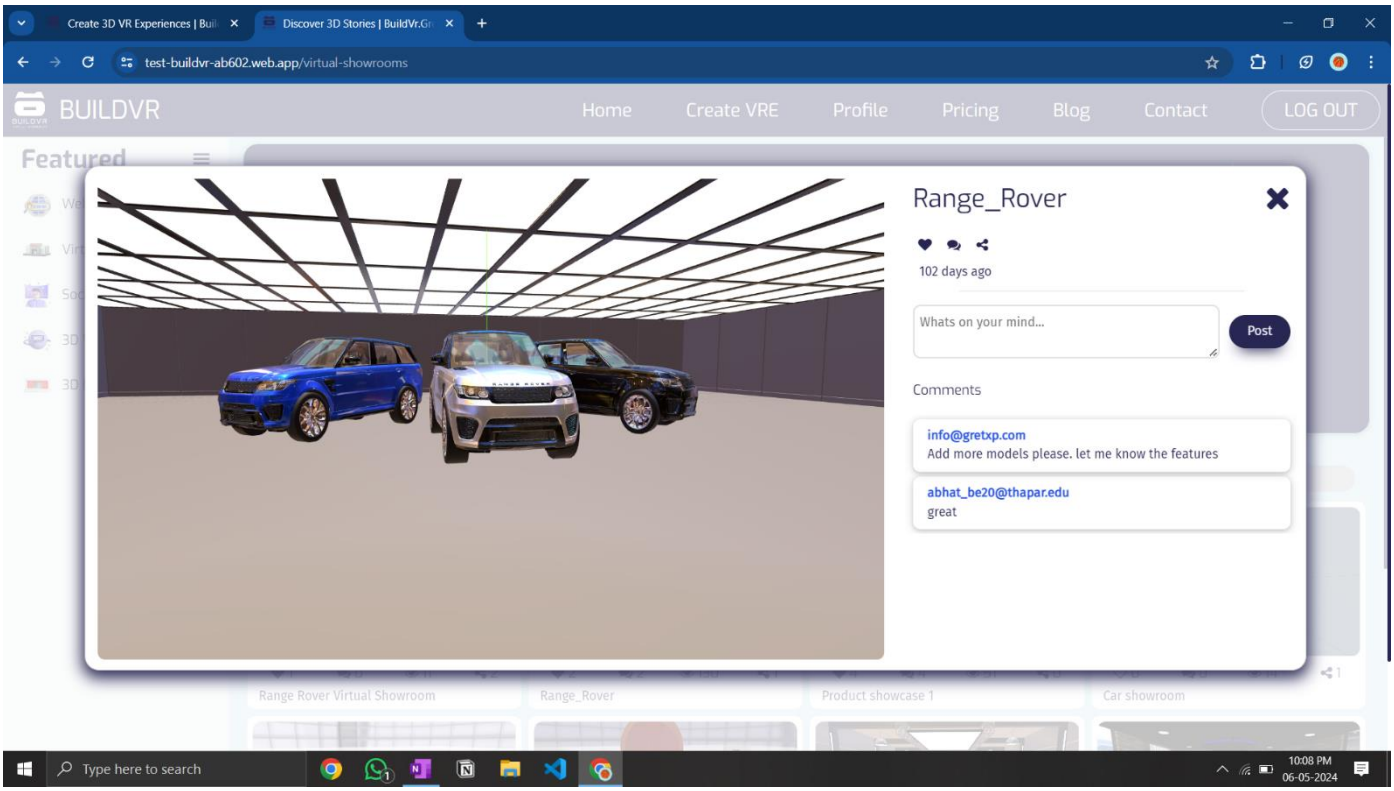


Fig 10.6 Development of preview popup with user engagements.

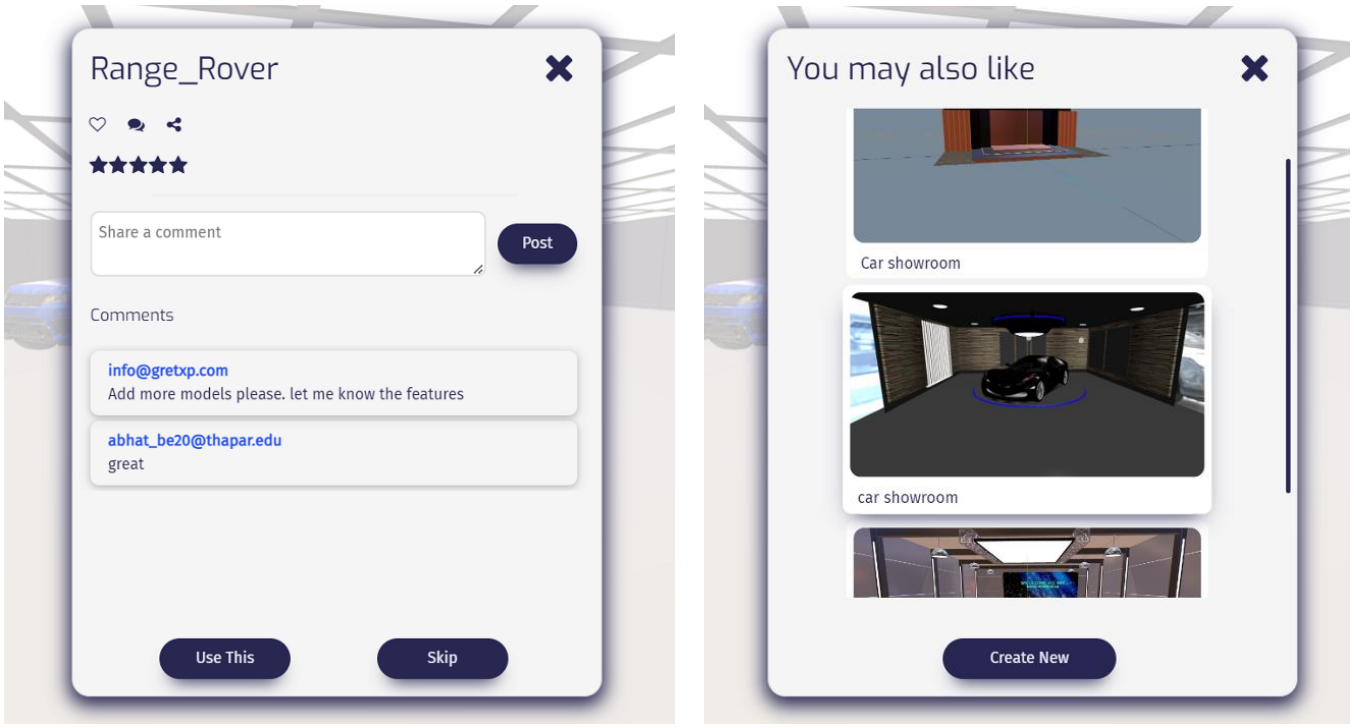
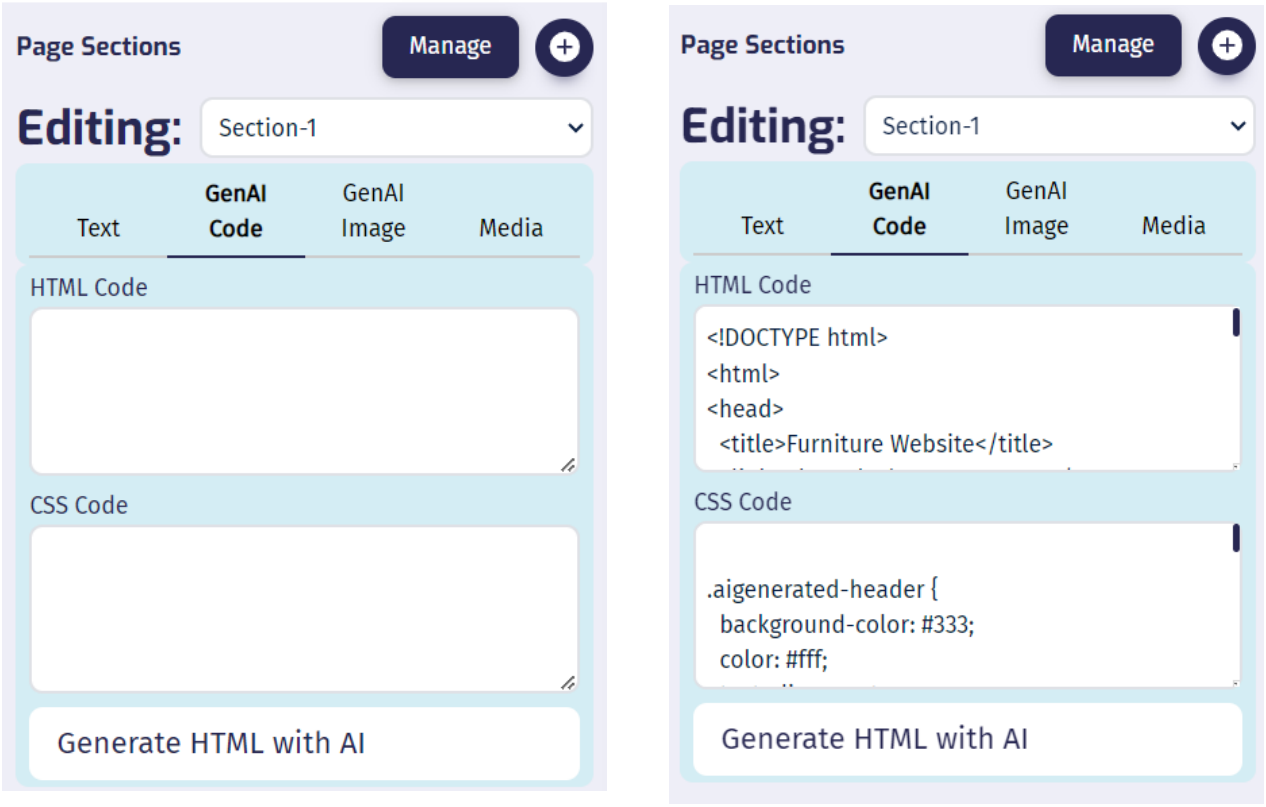


Fig 10.7 Popup for user engagement and recommendations.

Fig 10.8 React Quill based fully functional text editor for adding content to websites.



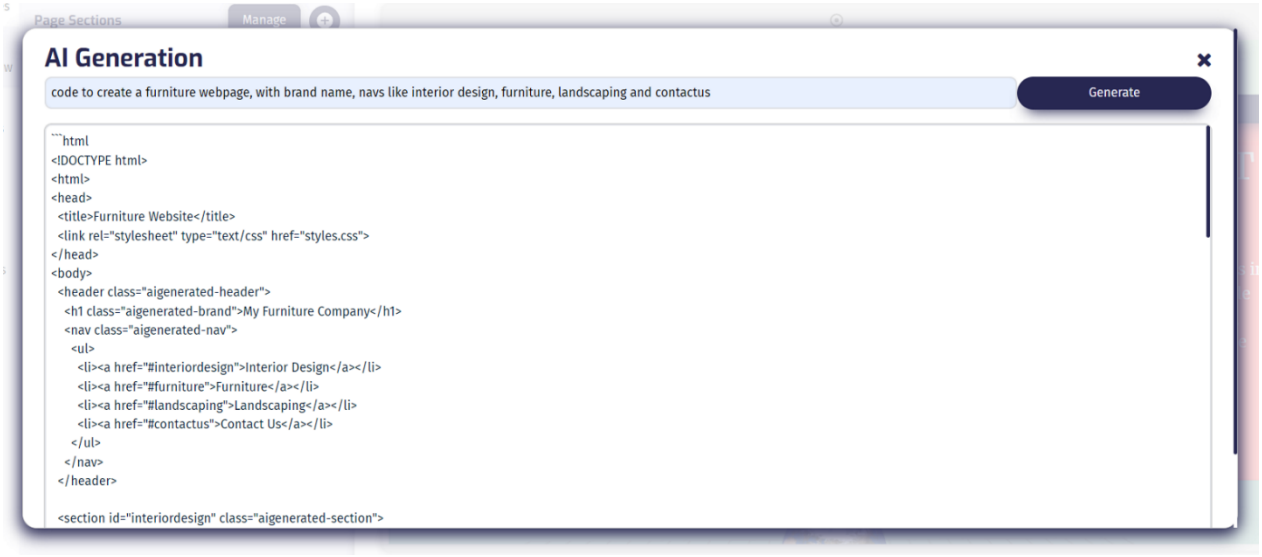


Fig 10.9 AI Code generation with automatic Code recognition and add to scene feature.

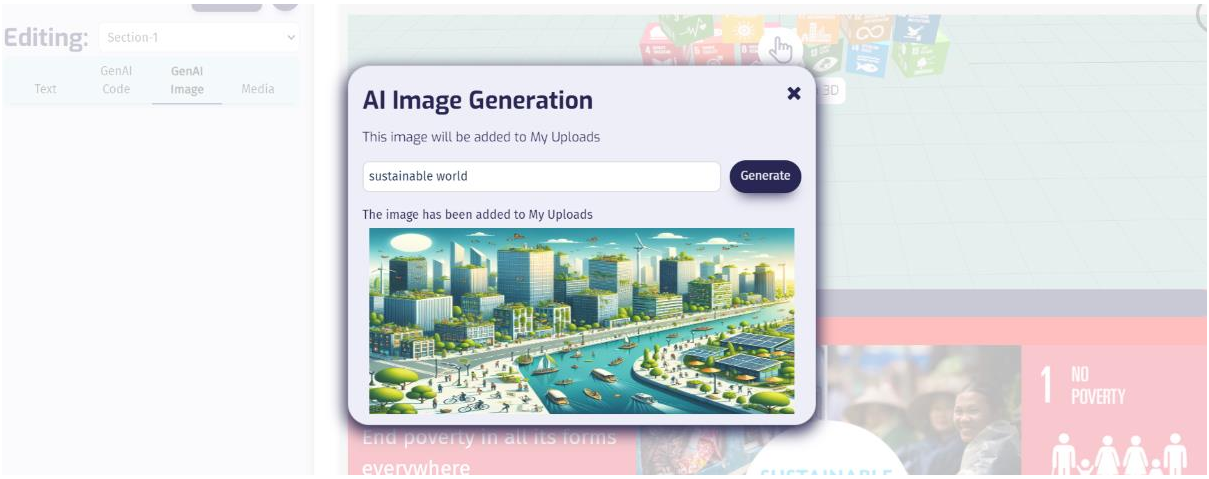


Fig 10.10 DALL-E 3 Image generation functionality.

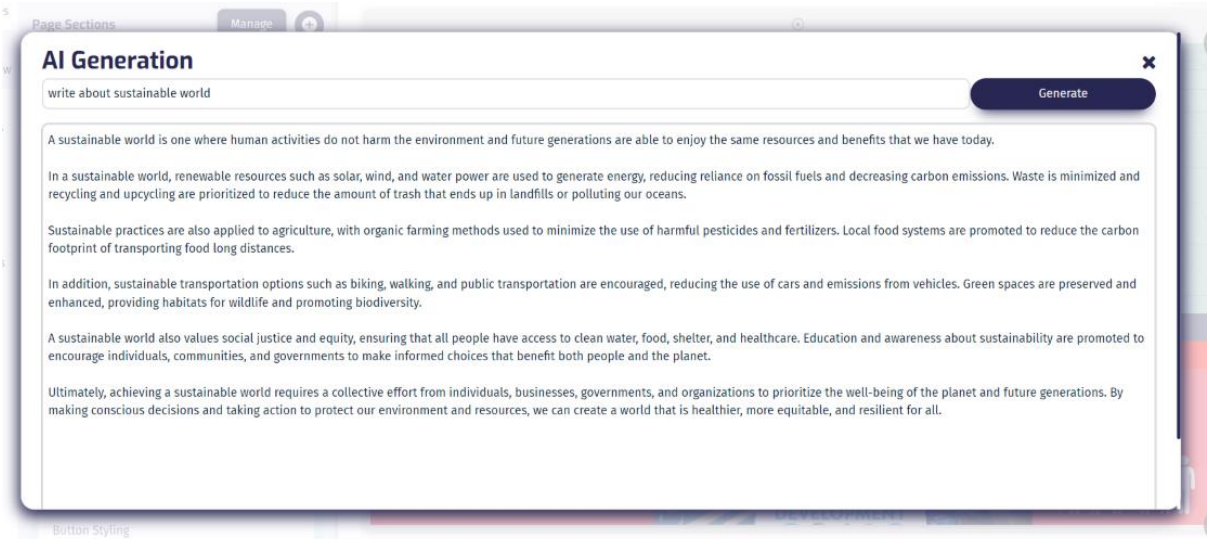


Fig 10.11 Generative AI content generation.

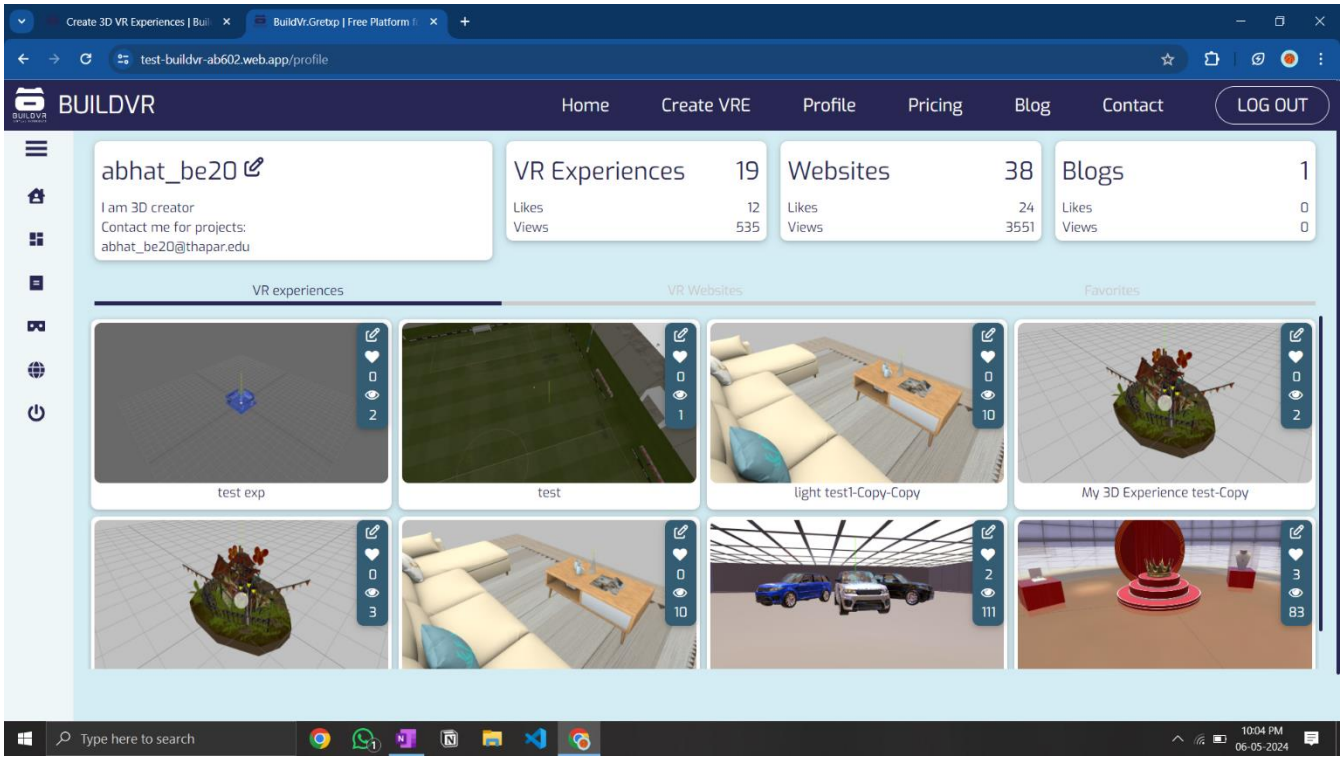


Fig 10.12 Display of favourites in profile section.

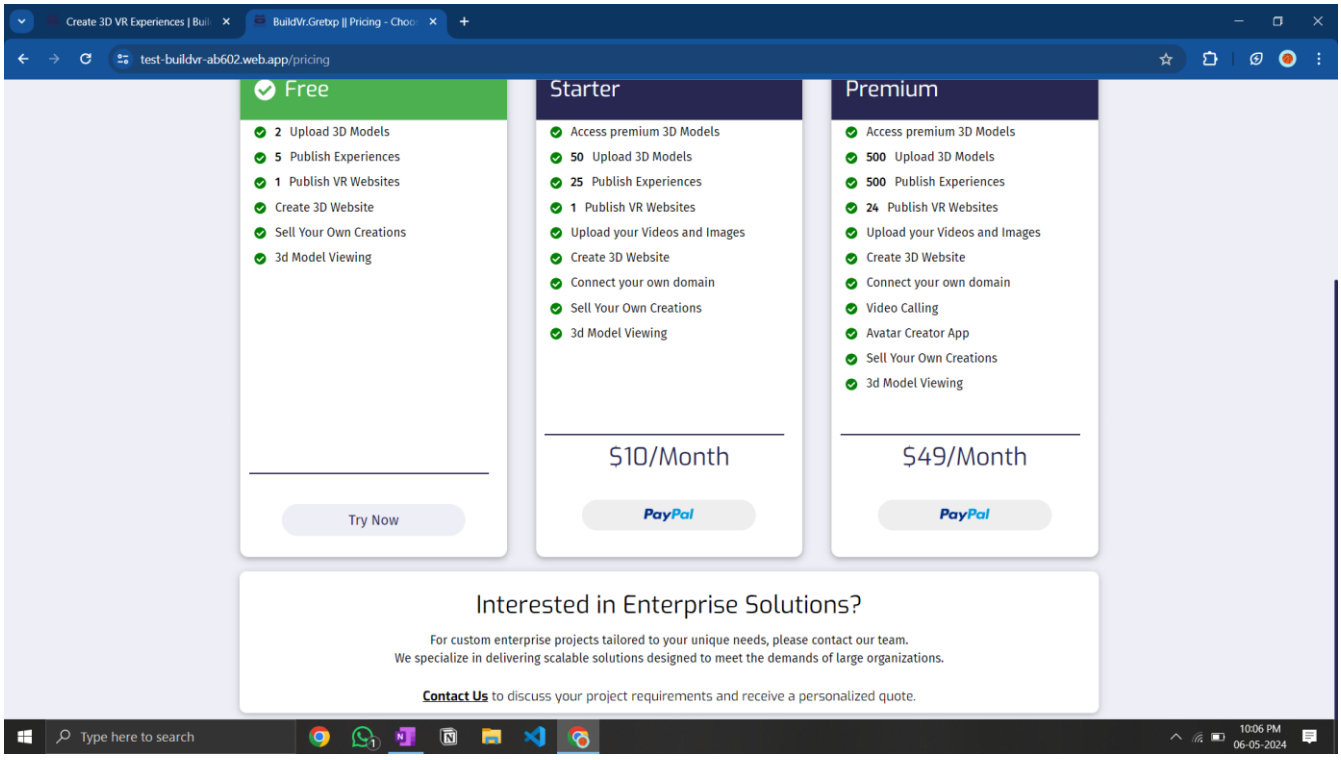


Fig 10.13 Pricing page and subscription management.

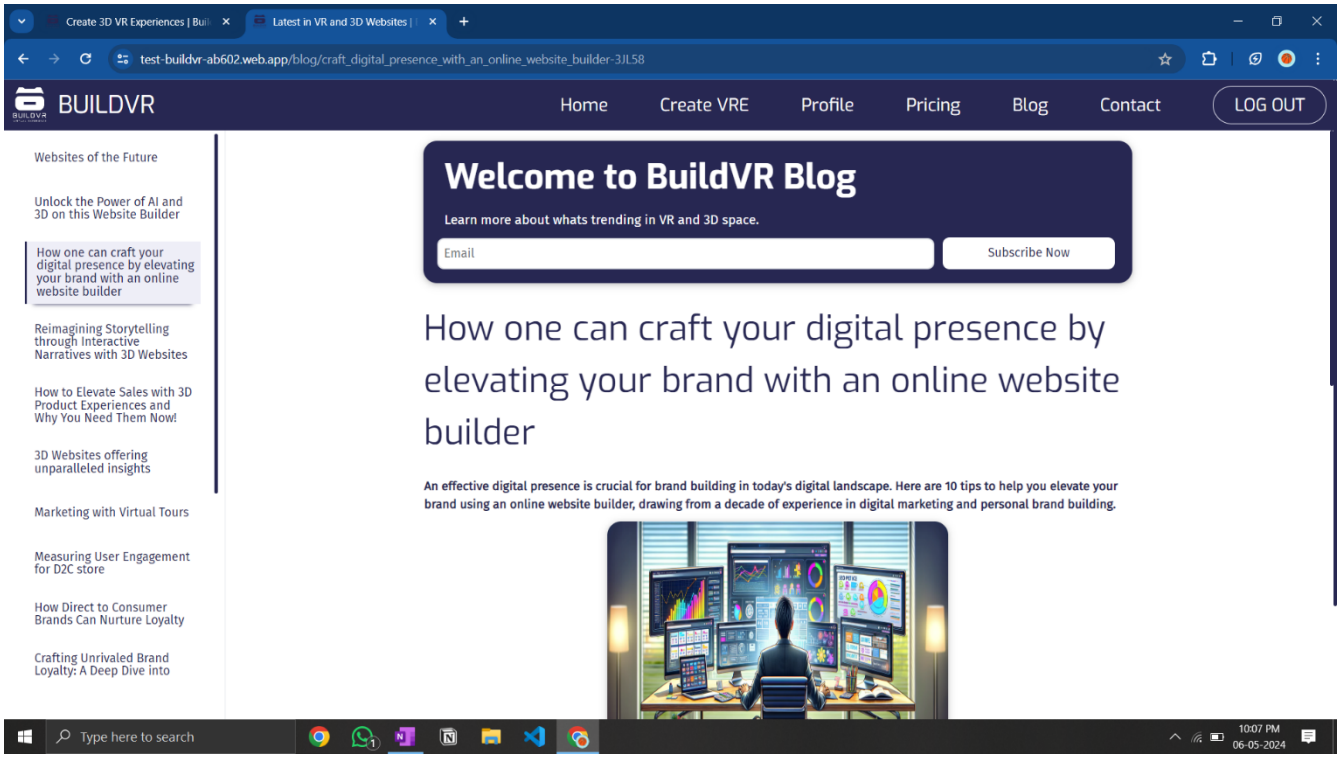


Fig 10.14 Blogs page utilizing rich text generated and saved using React Quill Text-Editor.

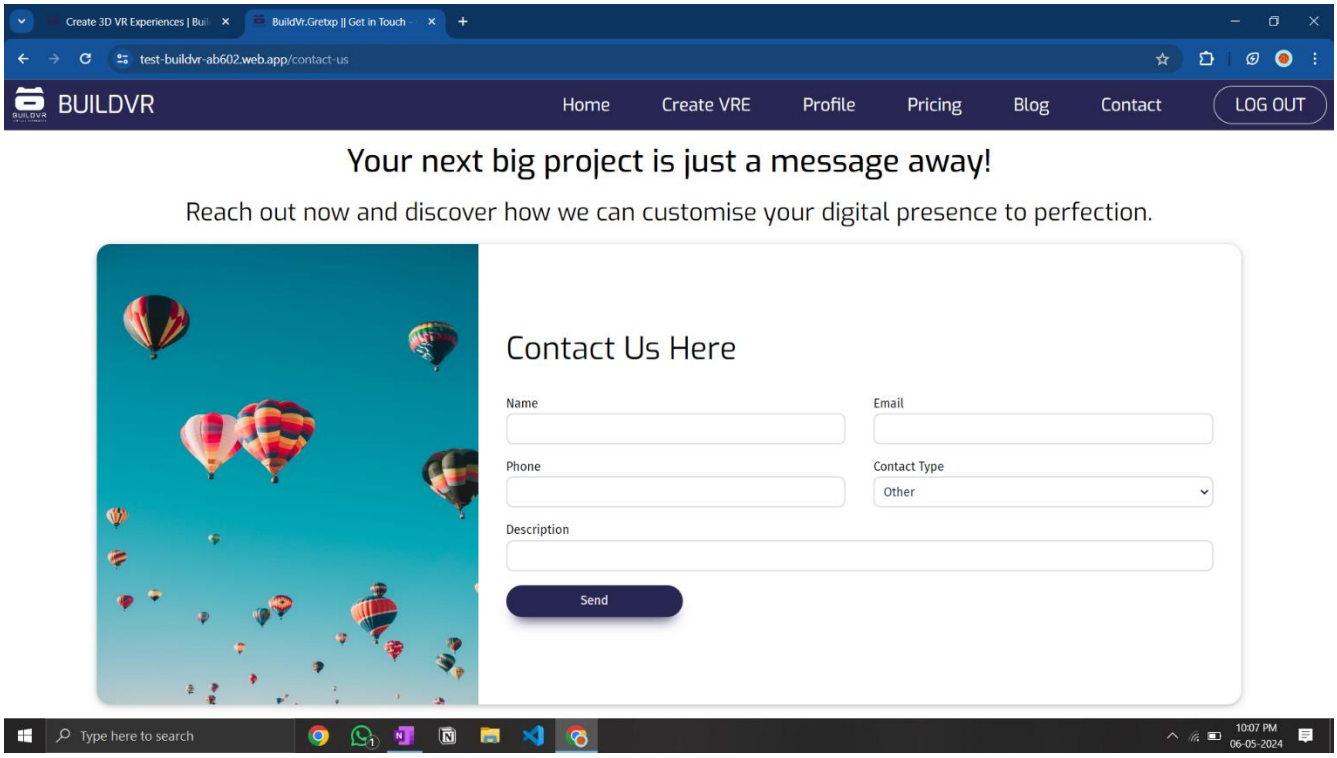


Fig 10.15 Contact Us page as an offering for end users.

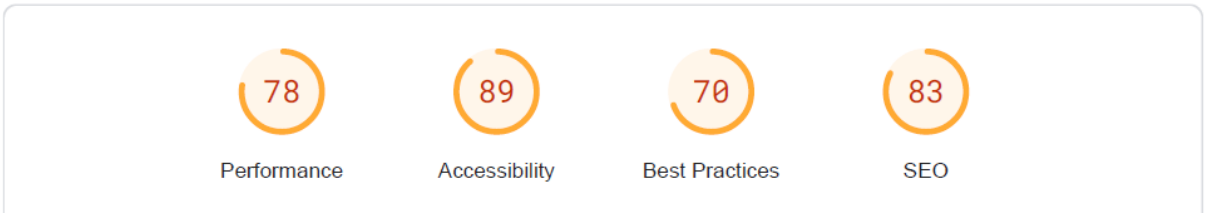


Fig 10.16 Performance of BuildVR before optimization.

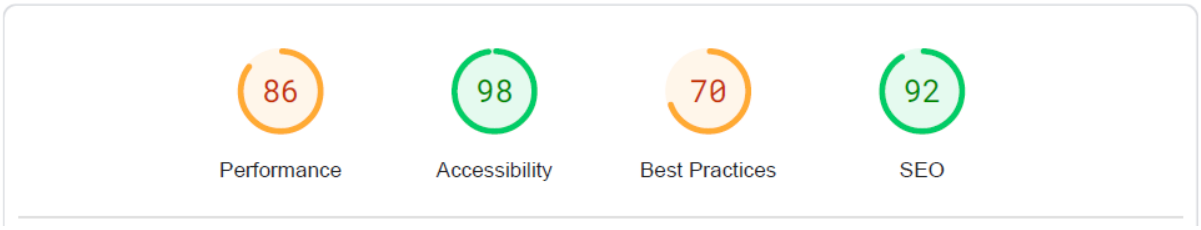


Fig 10.17 Performance of BuildVR after optimization.

10.2 Backend Implementations

During my internship, I had the opportunity to work extensively on backend development for a high-profile project, ensuring the functionality and reliability of various APIs and services. This experience allowed me to delve into a broad array of tasks, ranging from managing user engagements and subscriptions to integrating advanced AI capabilities.

One of the significant aspects of my work involved contributing to the gamification aspects, where I developed functionalities to update user points and track their engagement history. This feature was crucial for boosting user interaction and retention on the platform. Subscription management was another critical component, where I designed and implemented APIs to handle the creation, updating, and cancellation of subscriptions, including seamless integration with PayPal for payment processing. This ensured that users could manage their subscriptions easily and securely.

I was also involved in several AI-driven projects, such as generating images using advanced generative models and integrating ChatGPT for content and code generation. These innovations added significant value to the project by enhancing user experience and providing intelligent automation capabilities. I also gained experience in handling user-generated content, particularly in developing and managing systems for blogs and shared experiences. This included creating APIs to retrieve and display user blogs and shared virtual reality experiences.

Another significant area of my work involved developing functionalities for avatar management within a 3D experience. This included categorizing avatars, which allowed users to personalize their virtual presence. By building robust APIs for avatar category customization, I contributed to a more immersive and personalized user experience, which is essential for user satisfaction and retention in virtual environments. Additionally, I worked on media conversion processes, such as converting images to webp format and videos to VR-compatible formats. These processes were crucial for optimizing media for performance and compatibility within the platform.

Some of the key aspects of this section are:

1. **Extensive Backend Development:** Worked on a number of APIs ensuring their functionality and reliability, covering a wide range of tasks from user engagement management to AI integration.

2. **Gamification Features:** Developed functionalities to update user points and track engagement history, enhancing user interaction and retention on the platform.

3. **Subscription Management:** Designed and implemented APIs for creating, updating, and cancelling subscriptions with seamless PayPal integration, ensuring secure and easy subscription management for users.

4. **AI-Driven Projects:** Involved in generating images using advanced generative models and integrating ChatGPT for content and code generation, significantly enhancing user experience and automation capabilities.

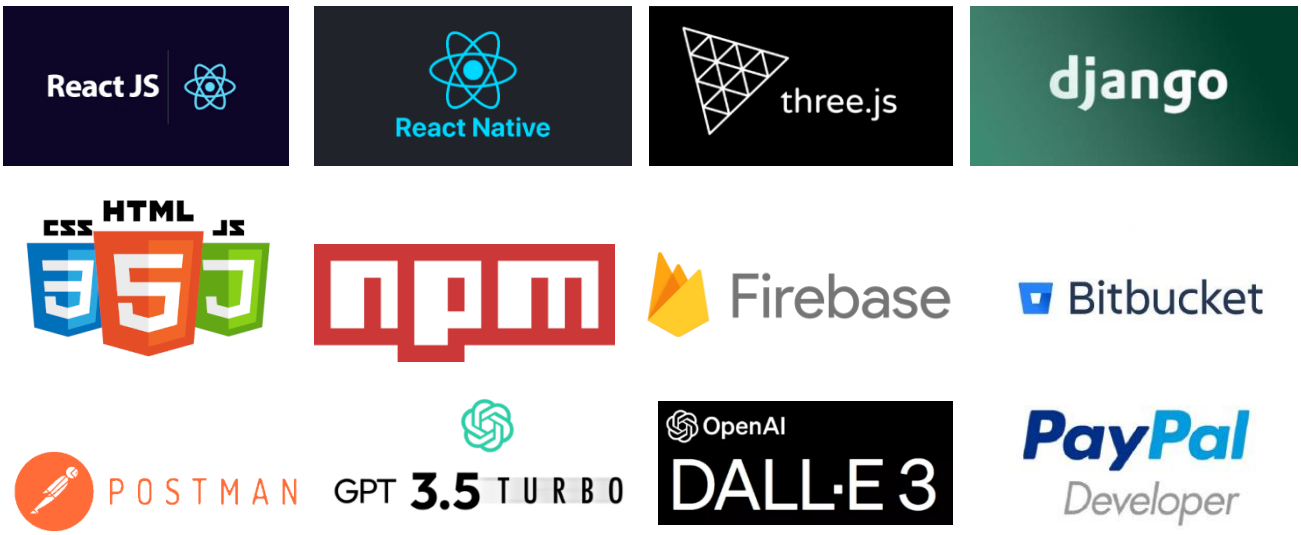
5. **User-Generated Content:** Gained experience in handling user-generated content by developing systems for blogs and shared experiences, ensuring efficient data retrieval and presentation.

6. **Avatar Management in 3D Experiences:** Developed functionalities for creating, updating, and categorizing avatars, allowing users to personalize their virtual presence and enhancing user satisfaction in virtual environments.

7. **Media Conversion Processes:** Worked on converting images to webp format and videos to VR-compatible formats, optimizing media performance and compatibility within the platform, ensuring efficient media usage without compromising quality.

8. **Optimized Performance:** Worked on optimizing the performance of APIs and services to ensure quick response times and efficient data handling, improving the overall user experience.

CHAPTER 11: TECHNOLOGIES USED



Aa Technology	Utilization
ReactJS	Front End Architecture
React Native	Mobile Development
ThreeJS	3D Content integration into ReactJS
Django	Backend Architecture
HTML, CSS, JS	Formatting, Styling and Presentation
Firebase	Cloud Services
NPM Packages	Leveraging packages based on ReactJS
Postman	API Testing
Bitbucket	Source Control
ChatGPT 3.5 Turbo	Code, Content Generation
Dall-E 3	Image Generation
Paypal Developer SDK	Subscription Management

Fig 11.1 List of technologies used.

CHAPTER 12: REFERENCES

Resource	Link
GretXP	https://www.gretxp.com/
BuildVR	https://buildvr.gretxp.com/
Instagram	https://www.instagram.com/gretxp/
Google	https://www.google.com/
Notion	https://www.notion.so/
Google Images	https://images.google.com/
DrawIO	https://app.diagrams.net/
Canva	https://www.canva.com/

Fig 12.1 List of resources utilized in the creation of this report.

Annexure A. Evaluation Form for Peer Review

Name of the student: (to be reviewed)	Abdul Basit Bhat	**Roll no. of the student:**	102003121
This form has to be submitted by the student whose roll no. will be mentioned in the box above. Handover this to the panel at the time of final presentation.			
Title of the project:	Full Stack Developer Internship at GretXP		
Name of the company:	GretXP Sanderling Experiences Pvt. Ltd.		
Project report (Tick the appropriate)	Excellent ✓	Good	Average
Project poster (Tick the appropriate)	Excellent ✓	Good	Average
Project video (Tick the appropriate)	Excellent ✓	Good	Average
Rate the work done	0 – 10 points	*(Provide rating here)* →	10
Give marks to the student on the basis of the overall performance	0 -5 marks	*(Provide marks here)* →	5

Abstract of the project (max. 100 words):

During a five-month internship at GretXP as a Full Stack Developer, significant exposure to a broad spectrum of technologies was gained, including React, Django, and various third-party frameworks such as ThreeJs and OpenAI APIs. The internship focused on developing new features and integrating AI into BuildVR offerings. Guided by experienced mentors, the internship cultivated a technical mindset, professionalism, and a robust work ethic, paving the way for high performance in the software engineering field.

Mention three strengths of the work done:

1. UI/UX Expertise: Demonstrated proficiency in designing and implementing user interfaces.
2. Innovative Feature Development: Successfully managed the entire development lifecycle of new components.
3. AI Integration: Effectively researched and implemented third-party AI tools, utilizing OpenAI APIs and Gen AI features.

Provide some useful recommendations (It may be some improvements, some suggestions to further raise the quality of the project):

The overall project is highly admirable. The quality of the project is already up to the mark.

Name of the **evaluator** student:	Mohd Al Sumaim	Roll no. of the **evaluator** student:	102016021
Signature of the **Evaluator** student: