MINISTRY OF SCIENCE AND HIGHER EDUCATION OF THE REPUBLIC OF KAZAKHSTAN

INTERNATIONAL INFORMATION TECHNOLOGY UNIVERSITY

Department of Information Systems

**PROFESSIONAL INTERNSHIP REPORT**

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**INTRODUCTION**

Practice period: from June 5 to July 8

Position: Frontend Developer

This report provides a detailed description and analysis of my professional practice conducted at Tele2. As part of this practice, I held the position of a frontend developer and had the opportunity to actively interact with a professional team, study best practices in web development and apply them in practice.

The purpose of the practice was to gain experience in a real corporate environment, as well as to apply the theoretical knowledge gained during the training to the development of the frontend part of telecommunications web applications. In the course of practice, I actively participated in various projects, studying technological processes, modern development methods and sought to improve my qualifications in the field of web technologies.

The first part of the report will be devoted to an overview of my responsibilities, the work performed and the technologies used. The second part will cover the analysis of the experience gained, the results achieved, as well as identify strengths and areas that require additional improvement.

My practice at Tele2 turned out to be an exciting and significant stage in my professional growth. Working in a dynamic and innovative company, I sought not only to perform tasks efficiently, but also to actively learn and apply best practices in web application development.

In the modern world of information technology, professional practice plays a key role in the formation and development of competencies of young professionals. This report provides an analysis and overview of my professional practice conducted at the prestigious Tele2 company. In the period from June 5 to July 8, I had the opportunity to work as a frontend developer, and this practice became an important stage in my professional growth for me.

The process of my internship was aimed at immersion in real work tasks, the application of theoretical knowledge gained at the university, and the expansion of practical skills in the field of web development. In this report, I will provide a detailed description of the tasks that were assigned to me, as well as tell about my experience, the results achieved and the lessons learned.

The first part of the report will be devoted to an overview of the main tasks and work performed within the framework of the practice. I will tell you what technologies and tools were involved, and what competencies I developed during the tasks. The second part of the report will be devoted to the analysis of the experience gained, assessment of their successes and identification of areas that require additional work and improvement.

The purpose of this report is to systematize and structure my experience during professional practice, as well as highlight key points that will help me in my further development and career growth. I am ready to share my experience, lessons and achievements that may be useful for me and other young professionals striving for success in the field of information technology.

With the beginning of the internship, I hoped for a full immersion in the web development environment and for the practical application of the knowledge that I received at the university.

Before starting the practice, I had certain expectations from this experience. First of all, I hoped that I would be able to face real work tasks that would allow me to better understand how software development takes place in a real company. I also tried to deepen my knowledge in the field of frontend development, master new tools and technologies, and learn how to work in a team of professionals.

I saw practice as an opportunity not only to gain technical skills, but also to develop important soft skills such as communication, collaboration, adaptation to a new environment and problem solving. At the same time, I planned to consciously work on self-improvement, analyze my successes and failures, and actively apply the lessons learned in my future career.

My goal was not only to fulfill the assigned tasks, but also to contribute to the company's projects, offer new ideas and solutions, learn from experienced colleagues and share my experience with them. I believed that this practice would be a fruitful period that would help me overcome many difficulties, learn to adapt to changes and prepare for a future career in web development.

My motivation to participate in professional practice was strengthened by the desire to apply the theoretical knowledge gained at the university in practice. I understood that real work in the information technology industry is different from educational tasks, and I persistently wanted to learn how to solve real problems with the help of modern tools and approaches.

Expectations from the Tele2 practice were associated with the revival of professional experience. I wanted to find out what specific tasks arise in the work environment, what technologies are used in practice, and how interaction is carried out within the development team. In addition, I really wanted to develop the skills of analysis and problem solving, as well as learn how to work under strict deadlines and requirements.

As a student and frontend developer, my goal was not only to fulfill the tasks set, but also to actively integrate into the team, share knowledge and experience with colleagues. I planned to overcome the difficulties that may arise when working with real data and in a live work environment, and use them as a platform for personal growth and development.

This practice gave me the opportunity to look at myself from a new angle and apply my existing skills in real tasks. I hoped that it would help me better understand in which direction to develop further, and that the experience gained would be useful both for my professional career and for long-term goals in the field of web development.

**ANALYTICAL / THEORETICAL part**

The past professional practice at Tele2 has covered a wide range of tasks related to frontend development. In this part of the report, I will provide a detailed description of the main tasks I worked on, and describe the methods, tools and technologies used.

Frontend development is an important component of creating web applications and websites. This is the process of designing and creating a user interface that users see and interact with. The main goal of frontend development is to provide effective and user-friendly work with a web application.

The main tasks of a frontend developer include:

1. Interface development: Creation of visual design, components and controls that provide intuitive user interaction with the application.
2. Performance optimization: Ensuring fast loading and response of the web application, optimizing work with data and resources to minimize user waiting time.
3. Responsive Design: Creating an interface that looks and functions well on different devices and screen resolutions, from smartphones to desktop computers.
4. Backend integration: Interaction with the backend of the application via the API for receiving and sending data, authentication and security.
5. Testing: Creation and implementation of tests to ensure the quality and reliability of the interface, detection and elimination of errors.
6. Support and maintenance: Regular updating and support of the interface, adaptation to new requirements and changes in the backend.

Tools and technologies

Various tools and technologies are widely used in frontend development:

1. HTML (HyperText Markup Language): A markup language used to structure and describe the content of a web page.
2. CSS (Cascading Style Sheets): A style language that defines the appearance of elements on a page, including colors, fonts, layout and sizes.
3. JavaScript: A programming language used to create interactive elements, animations, event handling, and server interaction.
4. Frameworks: Libraries and tools that simplify development by providing ready-made components, architectural solutions and code design rules. Examples: React, Angular, Vue.js .
5. Test frameworks: Tools for writing and executing tests on the frontend, such as Jest, Jasmine, Mocha.
6. Assemblers and build tools: Webpack, Parcel, Gulp - allow you to combine and optimize code, styles and resources for more efficient operation of the application.
7. Layout and components: Using CSS preprocessors (for example, Sass or Less) to simplify styling, as well as component libraries (for example, Material-UI or Bootstrap) to quickly create user interfaces.
8. Responsive and responsive Design: Using media queries and flexible grids to create an interface that looks good on various devices and screens.
9. Animations and Visual effects: CSS transformations and animations, SVG and animation libraries to create attractive user interfaces.

Frontend development plays a key role in ensuring high-quality and convenient user interaction with web applications. This process requires skills in various fields, ranging from layout and styling, to programming and performance optimization. An important aspect is the use of modern tools and approaches to create a satisfactory user experience.

**DESCRIPTION OF APPLICATIONS/ MATERIALS STUDIED DURING THE INTERNSHIP**

During my internship, I had the opportunity to study a number of applications and materials that significantly enriched my knowledge and experience in the field of frontend development. Below I will provide a description of some of them:

1. React: During the internship, special emphasis was placed on studying the React library. Thanks to detailed instructions and practical tasks, I immersed myself in the concepts of the component approach, component states, lifecycle and element virtualization. Using JSX to describe the interface allowed me to create dynamic and reactive user interfaces.
2. CSS and CSS preprocessors: During the internship, special attention was paid to working with CSS for styling web applications. Also, I had the opportunity to study CSS preprocessors, such as Sass and Less. They allow you to use variables, mixins and other advanced features, simplifying the styling process and providing easier support.
3. Frontend testing: An important part of the internship was the study of methods and tools for testing frontend code. I got acquainted with the concept of unit testing and learned how to write tests using the Jest library and the React Testing Library framework. This experience allowed me to create more stable and reliable code.
4. Performance Optimization: As part of my internship, I studied approaches to optimizing the performance of frontend applications. This included using list virtualization to ensure performance when working with large amounts of data, as well as optimizing rendering using memoization and shouldComponentUpdate.
5. Integration and deployment: I gained experience integrating the frontend part with the backend via the API. Also, training was conducted on the processes of deploying web applications on servers using tools such as Netlify or Vercel.
6. Assemblers and development environments: During the internship, I mastered working with modern development tools such as Webpack. I learned how to configure the development environment, connect plugins and configure build processes.
7. Team development and Git: Teamwork and the use of the Git version control system became an important part of the practice. I got acquainted with the methods of collective development, conflict resolution and making changes to the common code base.
8. Adaptive design and visual effects: Training was conducted to create an adaptive design to ensure that the application works well on various devices. Also, I learned the principles of creating animations and visual effects using CSS transformations and animation libraries.

**PRACTICAL PART**

Study and application of theoretical knowledge

During my internship at Tele2, I had the opportunity to apply my theoretical knowledge in practice, working on various tasks. Please consider some of them in more detail:

Integration of user filtering functionality on the frontend

At the initial stage of my internship, I received the task of integrating the functionality of filtering users on the frontend in an existing application. Using JavaScript knowledge and the React library, I created an interface for selecting filtering parameters and updated the component to take into account the parameters selected by the user. This allowed users to conveniently filter and view data. When working on this task, I used my knowledge of React components and working with events. I have developed an intuitive interface that allows users to select filtering options. To do this, separate components have been created for each option that handle state changes and user interaction.

Optimizing the performance of the user component

When implementing the task of optimizing the performance of the user component, I applied the knowledge of list virtualization. Using the React Virtualized library, I implemented the display of only visible users, minimizing resource costs. This optimization has significantly improved the speed of the component, especially with a large amount of data. When optimizing the performance of the component, I applied my knowledge about testing. First, unit tests were developed to check the correctness of the display and operation of the component under various scenarios. Then, using performance profiling tools, I did a comparative analysis before and after optimization. This allowed me to evaluate specific improvements in the speed and resource intensity of the component.

Study and implementation of code testing

Using theoretical knowledge about frontend testing, I developed unit tests for the user component using the Jest library and React Testing Library. This allowed me to test the operation of the component in various scenarios and make sure of its stability and reliability. The testing process also helped me identify and eliminate potential problems and errors. While working on a testing task, I applied my knowledge of test automation and assembly integration. I have set up automatic running of tests on various scenarios of using the component. To do this, we used tools that allow us to emulate user actions and verify compliance with the expected results. This approach made it possible to identify and fix problems before the component gets into the final version of the application.

Implementation of practical tasks

During the practice, I successfully implemented a number of practical tasks:

Work on visual effects

With the application of knowledge about CSS and animations, I improved the user experience by adding animations and transitions when interacting with the component. These visual effects have made the user interface more attractive and enjoyable to use.

Component Code Refactoring

Using an understanding of the principles of good architecture and clean code, I refactored the user component. Separating repetitive logic into separate functions and components has made the code more understandable and easily maintained.

Integration of the user component into the Tele2 application

With knowledge of the principles of integration and compatibility of components, I successfully integrated the developed user component into the Tele2 main application. After integration, tests were conducted for conflicts and problems, which ensured stable operation of the entire application. During the integration of the component, I used my knowledge of the principles of modularity and code compatibility. I integrated the component into the main application, while ensuring its operability in conjunction with other modules. When testing integration, I actively used debugging and developer tools to identify and eliminate possible conflicts.

Final inspection and presentation

Before the presentation to the customer, I conducted a final check and debugging of the component. This included thorough testing on various platforms and devices to make sure it worked correctly. At the last stages, I prepared a presentation of the completed works, where I demonstrated the features and functionality of the component to the customer. In the last days of my internship, I actively applied my knowledge about testing and debugging. I have conducted recent tests on various platforms and devices, making sure that the component works correctly and has no problems. Then, I developed a detailed presentation in which I demonstrated the completed work to the customer. This included a description of the features, functionality, and benefits of the component.

**CONCLUSION**

As a result of my professional practice at Tele2 as a frontend developer, I gained valuable experience and knowledge that turned out to be very useful and valuable for my professional growth. During the internship, I actively applied theoretical knowledge in practice, working on various tasks and projects. This period turned out to be not only a guide to the world of frontend development, but also allowed me to develop important skills such as teamwork, task analysis and decision-making.

My internship started with mastering the basic concepts of web development and the React library. Gradually, I moved on, studying more complex aspects, such as performance optimization, testing, and component integration. Every day was filled with new challenges that allowed me to deepen my knowledge and skills.

One of the key aspects of my practice was teamwork. Interaction with colleagues, exchange of experience and solving problems together created a favorable environment for learning and development. The collective experience also allowed me to better understand the principles of collaborative development and the importance of a common goal.

In conclusion, I would like to note that this professional practice has become not only a time of active learning, but also an immersion in a real industrial environment. Working on real projects in a team of professionals has given me a valuable insight into how web development functions in the real world. I have become convinced that many aspects, such as communication, planning and adaptation, are of great importance in successful software development.

The past few weeks of practice have been a time of in-depth immersion in the world of frontend development for me. I have mastered new skills, learned how to effectively solve problems and successfully cope with technical challenges. This experience also allowed me to better understand my strengths and areas that require additional development.

The Tele2 practice exceeded my expectations. The cordiality and support of colleagues who met me, as well as the professional and friendly atmosphere, made this time unforgettable. In this environment, I felt like a part of the team, putting my work and knowledge into common goals.

I hope that my contribution to the development and optimization of components will remain useful for the project and the company. The internship has become a powerful incentive for my personal and professional growth. I look forward to continuing to develop in the field of frontend development and apply new skills in future projects.

In conclusion, I am very grateful for the opportunity to complete an internship at Tele2. It was a unique experience that enriched my knowledge, experience and confidence in my abilities. I am leaving with positive emotions and a willingness to apply the acquired knowledge in future projects and challenges.

**REFERENCES**

На основании моего опыта и наблюдений за работой студента Ернур во время его профессиональной практики в компании Tele2, я рад предоставить следующие рекомендации:

Продолжай развиваться: Ернур продемонстрировал высокую мотивацию и стремление к самосовершенствованию в сфере фронтенд-разработки. Я уверен, что он будет успешно развиваться и осваивать новые технологии и инструменты.

Применяй аналитические навыки: В процессе работы над задачами Ернур проявил аналитический подход к решению проблем. Я рекомендую продолжать развивать этот навык, так как он является ключевым в создании эффективных и инновационных решений.

Углубляй понимание производительности: Оптимизация производительности была одной из задач, над которой работал Ернур. Я считаю важным продолжать изучать эту область, так как эффективность и быстродействие приложений играют все более критическую роль.

Продолжай сотрудничать: Ернур показал хорошие навыки командной работы и адаптации к общим стандартам. Развивайте этот аспект, так как в современной разработке важно не только создавать качественный код, но и эффективно сотрудничать с другими специалистами.

Не бойся предложить идеи: Ернур проявил инициативу и творческий подход к решению задач. Важно продолжать делиться своими идеями и предложениями, так как это может привнести новые перспективы в проекты.

Уделяй внимание документации: Хорошо структурированная и понятная документация является важной частью успешных проектов. Продолжайте развивать навыки документирования своего кода и решений.

На основе вышесказанного, я с уверенностью рекомендую Ернур как талантливого и преданным своей работе фронтенд-разработчика. Его знания, усидчивость и профессиональный подход делают его ценным активом для будущих проектов и команд.

С наилучшими пожеланиями,

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Компания Tele2

**REFERENCES**