

Ministry of Education and Science of the Republic of Kazakhstan  
Astana IT University

## **REPORT**

About the implementation of the industrial practice program

Practice base: Корпоративный университет филиал АО “Казахтелеком”

Student: Zhalmagambetova Kumissay

Educational program: Software Engineering

Group: SE-2315

Head of practice from the company: Кабдыкаримов Айдын

Astana, 2024

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## CALENDAR PLAN-THE SCHEDULE OF INTERNSHIP FROM THE COMPANY

Zhalmagambetova Kumissay Kuandykkyzy second year student, educational «Software Engineering», period of practice from October 14, 2024, to December 14, 2024

№ week	Name of works	Deadlines	Name of the department or workplace	Completion mark
1	2	3	4	5
Week one	Introduction to the IT department and an overview of the company's infrastructure.	14.10.24-20.10.24	Отдел разработки электронных курсов	Successfully completed
Week two	Learning the basics of working with chatbots, configuring, and maintaining the company's bot using Python. Familiarization with the chatbot's architecture.	21.10.24-27.10.24	Отдел разработки электронных курсов	Successfully completed
Week three	Creating a chatbot structure on Miro: planning and visualizing all user interaction and communication scenarios.	28.10.24-3.11.24	Отдел разработки электронных курсов	Successfully completed
Week four	Developing and improving chatbot functionality: adding new features, configuring integrations, and working with APIs.	4.11.24-10.11.24	Отдел разработки электронных курсов	Successfully completed
Week five	Designing a branch website on Figma: creating page layouts, designing the user interface, and focusing on UX design.	11.11.24-17.11.24	Отдел разработки электронных курсов	Successfully completed
Week six	Working with documentation and drafting technical materials.	18.11.24-24.11.24	Отдел разработки электронных курсов	Successfully completed
Week seven	Testing the chatbot and website: verifying the functionality of all features, fixing errors and	25.11.24-1.12.24	Отдел разработки электронных курсов	Successfully completed

	bugs, conducting user tests, gathering feedback, and improving the system.			
Week eight	Migration of the chatbot from one library to another: analyzing the differences, adapting the code, and ensuring compatibility with the new library.	2.12.24-8.12.24	Отдел разработки электронных курсов	Successfully completed
Week nine	Final feedback session and preparation of a report summarizing the internship results.	9.12.24-15.12.24	Отдел разработки электронных курсов	Successfully completed

*Head of practice from the company* \_\_\_\_\_

*Head of practice from AITU* \_\_\_\_\_

*Student's signature* \_\_\_\_\_

## **Характеристика о прохождении практики в Корпоративном университете филиала АО “Казахтелеком”**

Студент Жалмағамбетова Күмісай Қуандыққызы прошел производственную практику с 14 октября 2024 года по 14 декабря 2024 года. За время прохождения практики студент проявил себя с положительной стороны. Место проведения практики посещал регулярно в соответствии с планом прохождения практики. К должностным обязанностям и поставленным задачам относился с особым вниманием и ответственностью, проявляя интерес к работе и активно участвуя в процессе разработки и оптимизации чат-бота.

Студент не допускал опозданий, все порученные задания выполнял аккуратно и в срок. В процессе работы он ознакомился с основами разработки чат-ботов на Python, а также с методами создания структуры чат-бота на платформе Miro. Особое внимание было уделено разработке интерфейса чат-бота и взаимодействию с пользователями.

В процессе стажировки студент также проявил хорошие коммуникативные навыки, активно взаимодействуя с коллегами и руководством. Он с успехом прошел обучение работе с инструментами дизайна, такими как Figma, и создал макеты для интерфейса сайта. Работая в команде, студент продемонстрировал отличные навыки коллективной работы, аккуратность и ответственность.

Претензий и замечаний в ходе прохождения практики не получал. За добросовестное выполнение задач и проявленную инициативу получил устную благодарность от руководства. Студент также активно участвовал в тестировании и улучшении функционала чат-бота, что позволило ему приобрести ценный опыт в области веб-разработки и разработки ботов.

Программу прохождения практики студент выполнил в полном объеме. На основе проведенной работы можно отметить значительный рост профессиональных навыков, а также понимание процессов, связанных с созданием и поддержкой чат-ботов, а также разработкой веб-интерфейсов. Под руководством опытных и профессиональных специалистов он получил практические навыки работы по своей специальности.

Коллеги и руководство высоко оценили его качества и стремления к работе. По результатам его работы рекомендована положительная оценка.

Рекомендуемая оценка \_\_\_\_\_

Руководитель практики

от организации и должность :

\_\_\_\_\_

М.П.

«13» декабря 2024 г.

## **About the Company**

The Corporate University, a branch of JSC "Kazakhtelecom," is a unique educational platform that plays a key role in shaping qualified personnel for one of Kazakhstan's largest telecommunications companies (Corporate University of JSC 'Kazakhtelecom', 2024). The university was established to provide "Kazakhtelecom" employees with modern knowledge and skills essential for effective work in a rapidly evolving technological environment.

### **Goals and Vision of the Branch:**

The primary goal of the university is to enhance the professional competencies of its employees, enabling the company to maintain its leadership in the telecommunications industry. Through its educational programs, the university offers courses and training in various fields, such as network technologies, IT development, project management, and customer service. All educational materials and courses align with international standards, helping employees not only deepen their knowledge but also develop practical skills necessary for successful performance (Corporate University of JSC 'Kazakhtelecom', 2024).

The university actively integrates innovative learning approaches, offering a combination of traditional lectures, hands-on workshops, seminars, and webinars led by industry experts. An important aspect is the adoption of hybrid learning formats, allowing employees to balance work and professional development effectively.

## Introduction

During my internship at the Corporate University of JSC "Kazakhtelecom," I, Kumissay Zhalmagambetova, had the privilege of working in the IT department, where I engaged in a broad range of responsibilities focused on supporting and developing the company's internal IT infrastructure. This internship offered a rich learning experience and provided me with valuable opportunities to enhance my technical, organizational, and collaborative skills, which will undoubtedly benefit me in my future career as an IT professional.

A significant portion of my work revolved around the development and maintenance of a Python-based chatbot designed to streamline and automate various internal processes within the organization. This task required me to dive deeply into multiple facets of chatbot development, from its initial design to testing, optimization, and final deployment. I was actively involved in designing the chatbot's interaction structure, which required close collaboration with my team. To create a clear and intuitive representation of the chatbot's workflow, I utilized the Miro platform, where I mapped out its architecture and interaction pathways. This process sharpened my ability to translate complex processes into visually comprehensive models, a skill that is invaluable in software development and project management.

In addition to designing the chatbot's structure, I explored user interface design through Figma, a powerful tool for creating modern, user-friendly designs. By focusing on the principles of usability and aesthetics, I worked on crafting interfaces that ensured seamless user interaction. This hands-on experience with Figma allowed me to delve into the creative aspects of IT development, further expanding my understanding of user-centric design principles and the importance of creating intuitive solutions.

Beyond the technical aspects, I took responsibility for comprehensive project documentation. This included detailing the chatbot's structure, preparing reports on updates and modifications, and drafting user manuals to assist end-users in navigating the new system. These tasks helped me cultivate a meticulous approach to information organization and taught me the importance of clear and precise documentation in ensuring the smooth implementation and maintenance of IT systems.

My internship was not just about acquiring technical expertise—it was also an opportunity for personal and professional growth. I demonstrated my ability to adapt quickly to new environments and take initiative in challenging tasks. My enthusiasm for learning and my commitment to each project enabled me to collaborate effectively with my team, contributing to a productive and supportive work dynamic. This experience reinforced my belief in the value of teamwork and the power of shared knowledge, both of which are critical in the field of IT.

Overall, this internship was a significant milestone in my journey toward becoming a skilled IT specialist. It allowed me to gain hands-on experience in a professional environment, refine my technical and creative abilities, and enhance my organizational and communication skills. Most importantly, it solidified my passion for IT and software development, giving me the confidence to pursue new challenges and opportunities in this dynamic field.

**Internship Tasks:**

- Development and maintenance of a Python-based chatbot to automate the company's business processes.
- Designing the chatbot structure on the Miro platform, including user interaction scenario planning.
- Developing the chatbot interface and integrating it with the company's website.
- Testing chatbot functionality and collecting feedback to improve its performance.
- Preparing documentation for the developed chatbot features and interface design.
- Creating reports on completed tasks, analyzing the chatbot's performance, and documenting improvements.

**Internship Objectives:**

- Forming a comprehensive and accurate understanding of the profession for future specialists.
- Developing practical skills in various fields of information technology.
- Studying methods used in the technological process of information handling within a specific domain.
- Acquiring initial professional experience.
- Enhancing the competitiveness of one's resume.
- Gaining the opportunity to work and demonstrate skills in large organizations.
- Becoming familiar with the specifics of working in the field under real-world conditions.



## **Main Body**

### **Chatbot Functionality Overview**

- Knowledge base with comprehensive guides and information.
- Instructions for using essential work-related software.
- Announcements for contests and events.
- Event registration capabilities.
- Declaration confirmation features.
- Direct access to responses from specialists across various branches.

### **Chatbot Optimization Details**

- Implementation of bilingual support for wider accessibility.
- Addition of “Back” buttons for improved navigation.
- Removal of outdated buttons to simplify the interface.
- Migration to a more robust library to handle a larger number of users.
- Integration of corporate email verification for secure access.

### **Website Development Summary**

- Objective: To centralize and streamline information about academies and training programs for business, management, sales, and technical disciplines.
- My Role:
  - Website design and layout creation using Figma.
  - Ensuring alignment with the company’s branding and usability standards.
  - Presenting the design for approval and implementing feedback.
- Team Collaboration:
  - Functional development and feature integration by team members based on the approved design.

During my internship at the Corporate University of JSC "Kazakhtelecom," I actively participated in a project to optimize the functionality of an existing chatbot, which serves as an essential tool for every company employee. This chatbot performs a wide range of functions, including providing a knowledge base, offering instructions for using necessary work software, publishing announcements about contests and events, facilitating event registration, confirming declarations, and enabling employees to receive answers from specialists in different branches. The chatbot was developed using the Aiogram framework, a modern and efficient Python library for creating Telegram bots (Groosha, 2023). This framework allowed for streamlined development due to its support for asynchronous programming, enabling the bot to handle multiple user requests simultaneously without delays.

My primary role was to structure and optimize the chatbot's functionality. We analyzed its existing features and identified areas for improvement. One of the key enhancements was introducing bilingual support, allowing employees to use the chatbot in two languages, which significantly improved its accessibility and usability. To further enhance navigation, I added "Back" buttons, enabling users to easily return to previous steps. Additionally, outdated buttons were removed, streamlining the interface and making the chatbot more user-friendly.

Another major task involved migrating the chatbot from one library to another due to the increasing number of users, which the previous library could no longer handle effectively. This transition leveraged Aiogram’s ability to support robust and scalable bot architectures, ensuring

stability and performance under higher user loads (Groosha, 2023). Furthermore, I implemented corporate email verification using the library's middleware capabilities, restricting access to the chatbot to company employees only. This enhanced data security while personalizing the service.

These updates improved the chatbot's functionality and ease of use, reinforcing its role as an indispensable tool for the company's employees.

In addition to optimizing the chatbot, we identified a significant need to create a dedicated website for the Corporate University branch. The purpose of this website was to centralize and provide streamlined access to key information, including comprehensive details about various academies that offer training in business, management, sales, and technical disciplines. The website was envisioned as a resource hub, where employees and stakeholders could easily find information about programs, events, and learning opportunities, further enhancing the branch's role as a center for professional development.

Due to the scale and complexity of the project, we decided to divide responsibilities among the team to ensure efficient execution. My primary role in this initiative was to design the website's layout and user interface using Figma. This phase involved close attention to user experience and visual appeal, ensuring the design aligned with the company's branding and provided a user-friendly navigation system. I incorporated modern design principles to create a clean and professional interface that would appeal to a diverse audience.

Once I completed the design, I presented it to the company's leadership for approval. After receiving their feedback and making necessary revisions, the design was finalized. From there, the remaining team members focused on implementing the technical functionality of the website. They integrated the features outlined in the design, ensuring the final product met the organization's requirements and delivered the intended user experience.

This project provided me with valuable experience in web design, from ideation to collaboration and execution. It enhanced my skills in creating intuitive and visually engaging designs while also teaching me the importance of clear communication and teamwork. By working closely with my team, I was able to contribute to a larger, impactful initiative that strengthened the Corporate University's ability to serve its employees and stakeholders effectively.

## **Strengths and Weaknesses of the Organization**

### **Strengths:**

- High level of professionalism among the team and opportunities for learning.
- Exposure to cutting-edge technologies.
- Clear work organization, facilitating efficient task completion.

### **Weaknesses:**

- Some processes related to integrating new technologies could take longer than expected.

## **Conclusion**

In conclusion, my internship at the Corporate University of JSC "Kazakhtelecom" was an exceptionally valuable and inspiring stage in my professional journey. This experience allowed me to significantly expand my knowledge and skills in software development and interface design. By working on real projects, I gained practical insight into all stages of development, from planning and structuring a chatbot to designing and optimizing user interfaces.

With each new task, I enhanced my technical and analytical abilities, tackling diverse challenges such as debugging, testing functionality, and improving user experience. This experience not only helped me develop my programming and design skills but also taught me how to work with documentation, collaborate effectively with colleagues, and analyze user needs.

Moreover, the internship underscored the importance of continuous learning and adaptability in the rapidly evolving IT field. I became more confident in my abilities and gained valuable experience in teamwork and problem-solving, addressing the challenges developers face in real-world projects. I am confident that the knowledge and skills acquired during this internship will serve me well in the future and help me thrive in the field of information technology.

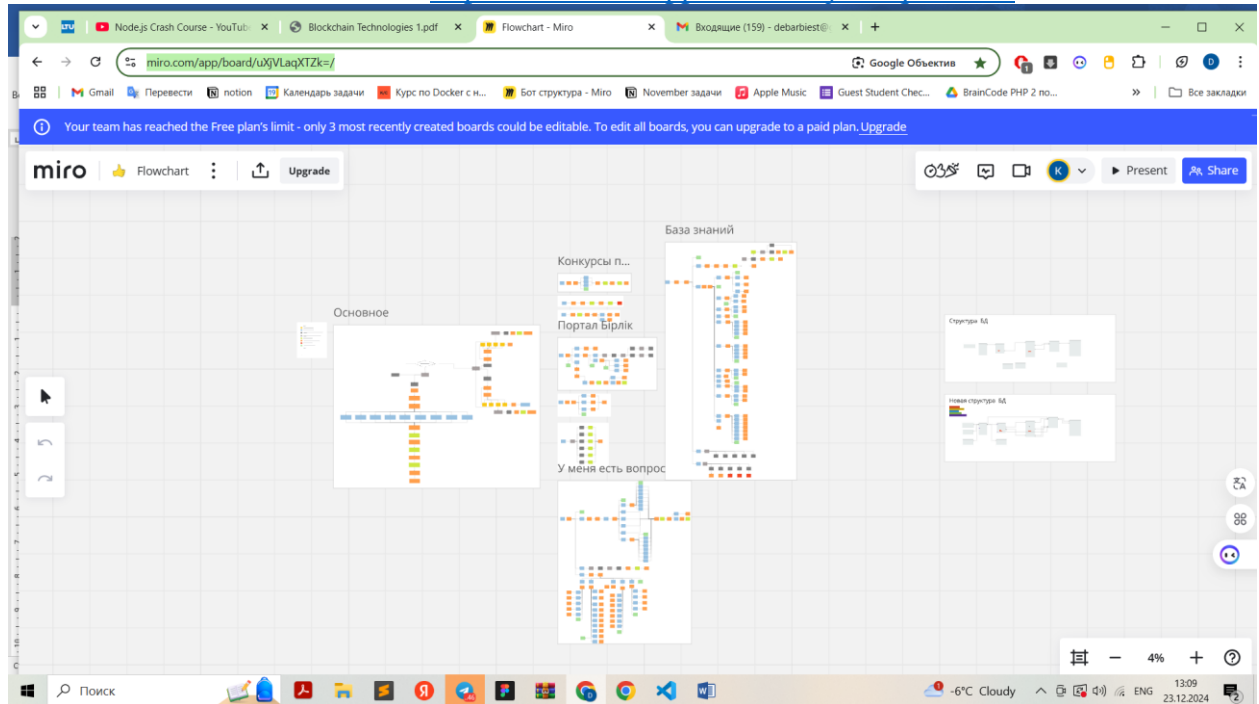
This experience marked an important step in my professional growth, and I am grateful for the opportunity to work on real projects in a prestigious company like JSC "Kazakhtelecom." I am ready to continue my journey in the IT industry, assured that the knowledge I have gained will be the foundation for my future career development.

## List of References

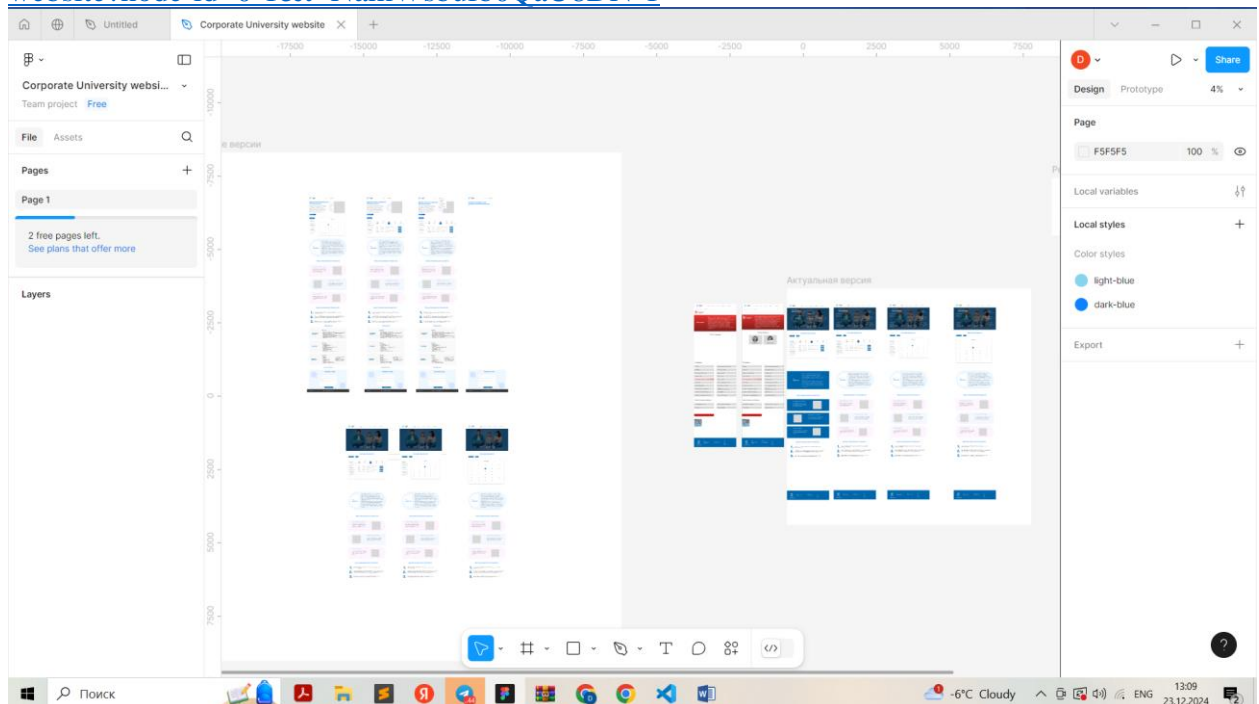
1. Corporate University of JSC "Kazakhtelecom." (2024). *Corporate University Program Catalog*. JSC "Kazakhtelecom."
2. Groosha, M. (2023). *Educational Material on Creating Telegram Bots in Python Using the Aiogram Framework*. Retrieved from <https://mastergroosha.github.io/aiogram-3-guide/>

# Appendices

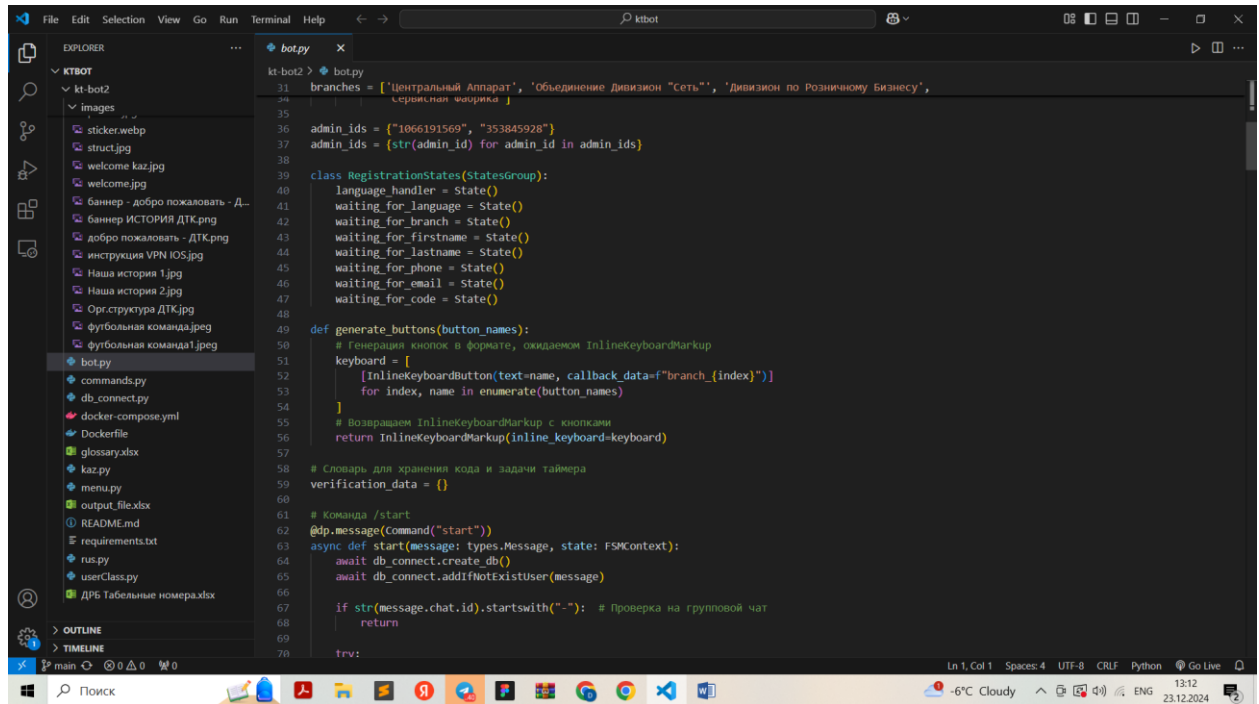
## 1. Miro chat-bot structure [https://miro.com/app/board/uXjVLaqXTZk=](https://miro.com/app/board/uXjVLaqXTZk=/)



## 2. Figma design of the website <https://www.figma.com/design/qO0I8aSYEiR4FaOrXrwBRh/Corporate-University-website?node-id=0-1&t=NamWsbufb0QaU8DN-1>



3. VS code screen with code



```
31 branches = ["Центральный Аппарат", "Объединение Дивизион 'Сеть'", 'Дивизион по Розничному Бизнесу',  
34             'Сервисная Поддержка']  
35  
36 admin_ids = ["1066191569", "353845928"]  
37 admin_ids = {str(admin_id) for admin_id in admin_ids}  
38  
39 class RegistrationStates(StatesGroup):  
40     language_handler = State()  
41     waiting_for_language = State()  
42     waiting_for_branch = State()  
43     waiting_for_firstname = State()  
44     waiting_for_lastname = State()  
45     waiting_for_phone = State()  
46     waiting_for_email = State()  
47     waiting_for_code = State()  
48  
49 def generate_buttons(button_names):  
50     # Генерация кнопок в формате, ожидаем InlineKeyboardMarkup  
51     keyboard = [  
52         [InlineKeyboardButton(text=name, callback_data=f"branch_{index}")]  
53         for index, name in enumerate(button_names)  
54     ]  
55     # Возвращаем InlineKeyboardMarkup с кнопками  
56     return InlineKeyboardMarkup(inline_keyboard=keyboard)  
57  
58 # Словарь для хранения кода и задачи таймера  
59 verification_data = {}  
60  
61 # Команда /start  
62 @dp.message(Command("start"))  
63 async def start(message: types.Message, state: FSMContext):  
64     await db_connect.create_db()  
65     await db_connect.addIfNotExistUser(message)  
66  
67     if str(message.chat.id).startswith("-"): # Проверка на групповой чат  
68         return  
69  
70     trv:
```

4. Telegram bot name: @ktwelcome\_bot