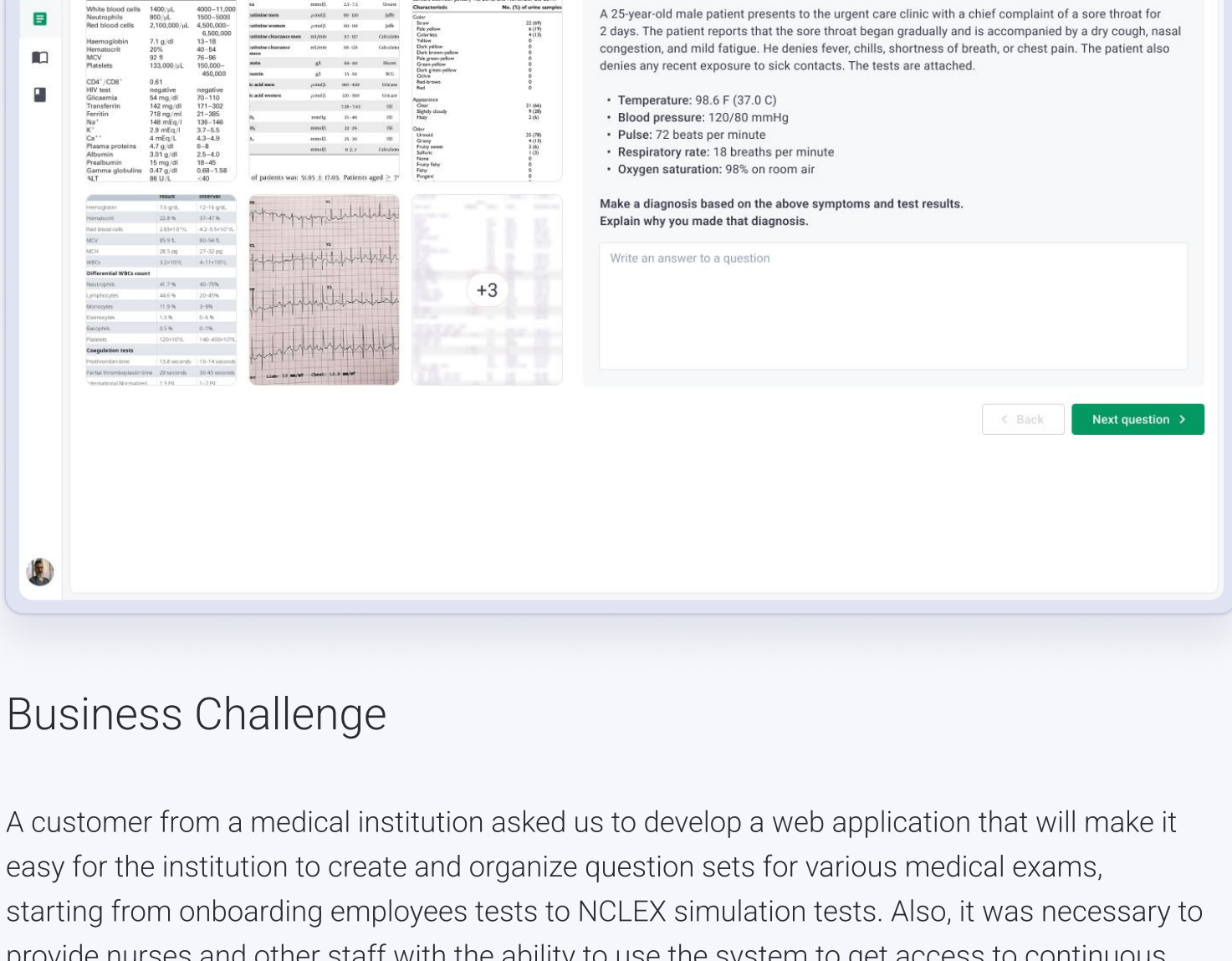


Medical Professional Testing System

A medical exam system with an extensive question bank for systematic testing and training of the medical staff. The platform supports exam preparation, self-assessment, continuous learning, and curriculum support for nurses and other healthcare professionals.



Business Challenge

A customer from a medical institution asked us to develop a web application that will make it easy for the institution to create and organize question sets for various medical exams, starting from onboarding employees tests to NCLEX simulation tests. Also, it was necessary to provide nurses and other staff with the ability to use the system to get access to continuous learning and adding their practical experience into the knowledge database for further training.

After engaging in a thorough discussion with our client, we have established the following set of primary objectives:

- Develop a **structured medical testing system** for both nurses and doctors that will help standardize the knowledge base across nursing personnel;
- Provide a **centralized repository** for storing and managing medical questions and healthcare case studies;
- Create and organize question sets** for various exams, such as NCLEX practice tests, medical board exams, internal assessments, and training programs.

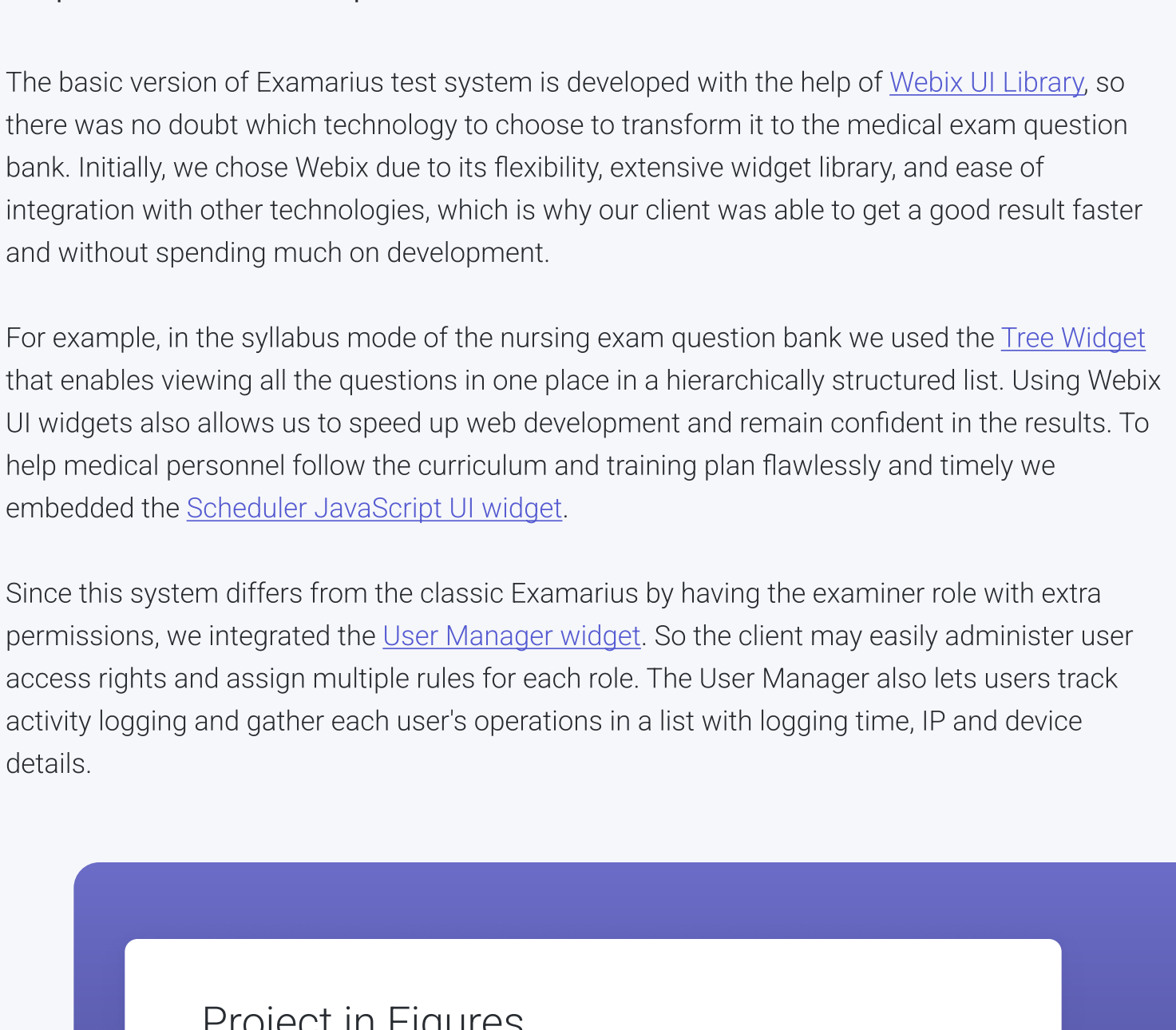
Solution

To address these challenges, our team proposed the development of a medical exam system with a nursing exam question bank on the basis of our ready-made product [Examarius online test system](#). Created as a white-label assessment software, the system can be customized to the needs of different businesses and government institutions that require training and testing of their employees.

Since the platform should not only become a simple catalog for test bank questions, we developed a reliable examination system in accordance with client's requests and the latest trends in the healthcare industry. We customized the basic version of our product and integrated the ability to add, edit and delete questions in the medical question bank, create tests and exams based on them using an in-built tool, and other functions that will be described below. Here are several key features the medical exam question bank provided our customer with:

- Test Builder tool** with a user-friendly interface and an intuitive drag-and-drop that allows users to create, edit, and organize exams on a regular basis. Users may use it to design new questions from scratch or select the existing ones. By regularly testing nurses and other staff, healthcare institutions can maintain a high standard of care and ensure that medical professionals are up-to-date with the latest medical practices and protocols.
- Medical question bank module** provides the categorization of questions based on different medical specialties and displays them in a convenient table form. Selecting one of them by clicking a user will be able to see details, such as question content preview, types of question and answer control used, a difficulty mark, and path with the question category. Furthermore, we included a search functionality, enabling users to quickly find specific questions or topics. It helps standardize the knowledge base, ensuring that medical specialists possess a consistent level of understanding and expertise.
- Taking into account that the healthcare industry sometimes requires the collection of opinions, we added an extra permission to the examiner role in the medical test system for our client. This allows experts to better control the process of creating questions and minimize errors at the stage of their creation. Moreover, the system offers **collaboration features** that allow multiple experts alternately to contribute to and manage the medical question bank, thereby improving testing accuracy and quality. The system will block a question that is edited by one examiner, and the expert who clicks on the same question card will receive a notification that currently editing it is not allowed.
- It was also crucial for nursing question banks to provide updated content and questions that reflect the latest evidence-based practices and guidelines. Together with the client, we discussed and decided to implement the contributor role with the opportunity to expand the knowledge base in accordance with the practical experience gained. **Adding case studies to the appropriate topic**, thereby helping to share knowledge about a specific medical case and experience with colleagues. After filling in all the information to the case study a contributor sends it for submission. In order to prevent the database from being replenished with unreliable or false information, an examiner with the additional permission reviews each case study and verifies it. A case study is presented in the text content view with the ability to attach photos or documents, for instance, blood analysis or initial patient assessment. This custom feature supports ongoing professional development and ensures that nurses are equipped with current knowledge.
- Having created an extensive question bank, we proposed to create a custom module, a **test simulator for self-assessment** of competency. It would allow different medical staff to take tests on a chosen topic on their own. The simulator offers an unlimited number of tests with a random selection of questions. Let's say, in the "Safety and Infection Control" category in a medical surgery test bank, there are over 150 questions. When taking a test in this category, the simulator will randomly select 10 of them. At the same time, it will take into account that the questions vary in complexity, so the test will include various questions with the difficulty mark from 1 to 10. After passing the test, the users can review their answers and focus their learning efforts on areas where they fall behind.
- To conduct tests and exams within the timeframe requested in the syllabus we implemented the **scheduling system**. It grants all users to follow their agenda, make appointments, schedule meetings and book rooms for it. For the tests that are organized on the regular basis the implemented scheduling system provides the ability to arrange recurring events.

Additional service we provided for our client was the **paper-to-digital transition**, because most of their exams were built manually before. Moving knowledge base to the digital records was a key step to achieve a more optimized and structured workflow. It ensures a smooth integration process with the developed system that preserves data solidarity and reduces disruption.



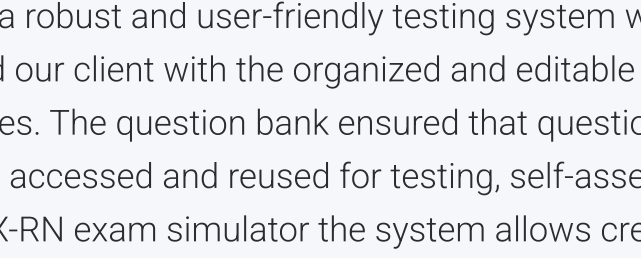
Implemented Components

The basic version of Examarius by having the examiner role with extra permissions, we integrated the [User Manager widget](#). So the client may easily administer user access rights and assign multiple rules for each role. The User Manager also lets users track activity logging and gather each user's operations in a list with logging time, IP and device details.

Project in Figures

- 3+** Month Duration
- 1000+** Estimated man-hours

Applied Technologies



Results

We developed a robust and user-friendly testing system with the medical question bank, which provided our client with the organized and editable directory for both questions and case studies. The question bank ensured that questions were not duplicated and could be easily accessed and reused for testing, self-assessment or training purposes. Like the NCLEX-RN exam simulator the system allows creating and organizing exams to enhance the overall efficiency of the institution.

Your questions and requests are always welcome!