

## Секция 3 «Автоматизация исследований»

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### DEVELOPMENT A MOBILE APPLICATION FOR EDUCATIONAL CONTENT MANAGEMENT

The developed application must ensure stable operation, efficient and fast data processing, as well as the ability to scale.

On this project, we work on this task:

- Development of documentation.
- Compilation of database relationships.
- Creating the design mock-ups.
- Writing the mobile app using React Native.
- Testing application using Expo framework.
- Functional and unit testing the program.
- Writing comments and making code clean.

The project database storage consists of several tables: students, materials, schedule, works, and teachers (Figure 1).

The project was developed using ReactNative platform with ReactJS framework for backend side, AngularJS library for frontend side and H2 as a data storage system. Those tools were chosen for developing the project because of their quality, performance, scalability and other more [1].

To interact with the database, a system is used Prisma framework. Prisma is an open-source ORM that is typically used in backend applications (e.g. API servers) to send queries to a database and resolve data requirements of incoming API requests. Using Prisma to query your database inside of a Server Component saves the roundtrip to the API server by directly loading the data from the database and displaying it in the UI.

Work with the prototype of created application can be seen in Figure 2.

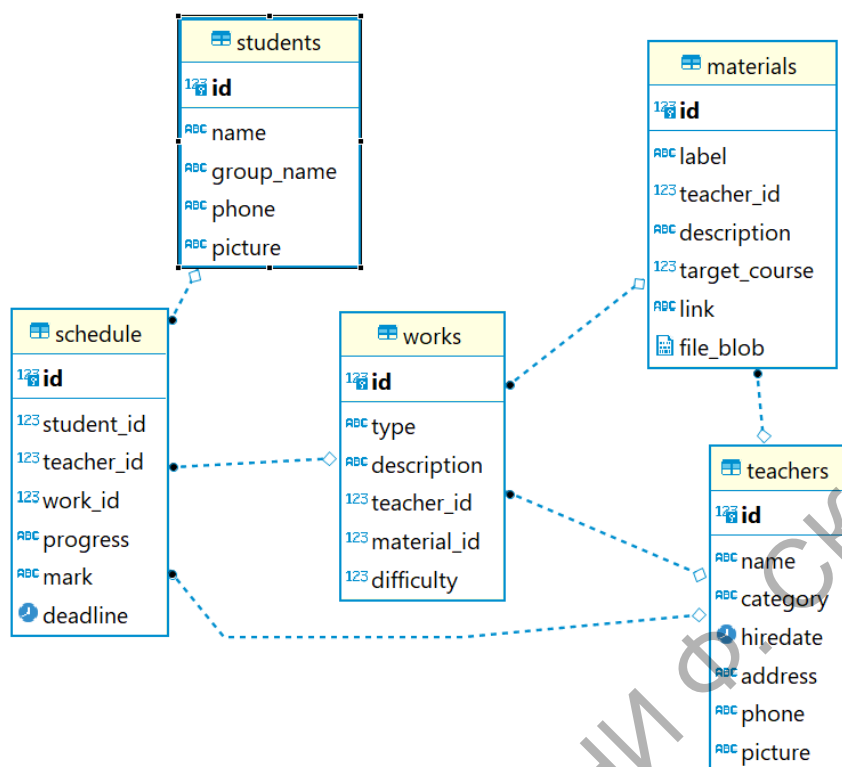


Figure 1 – Database relationships

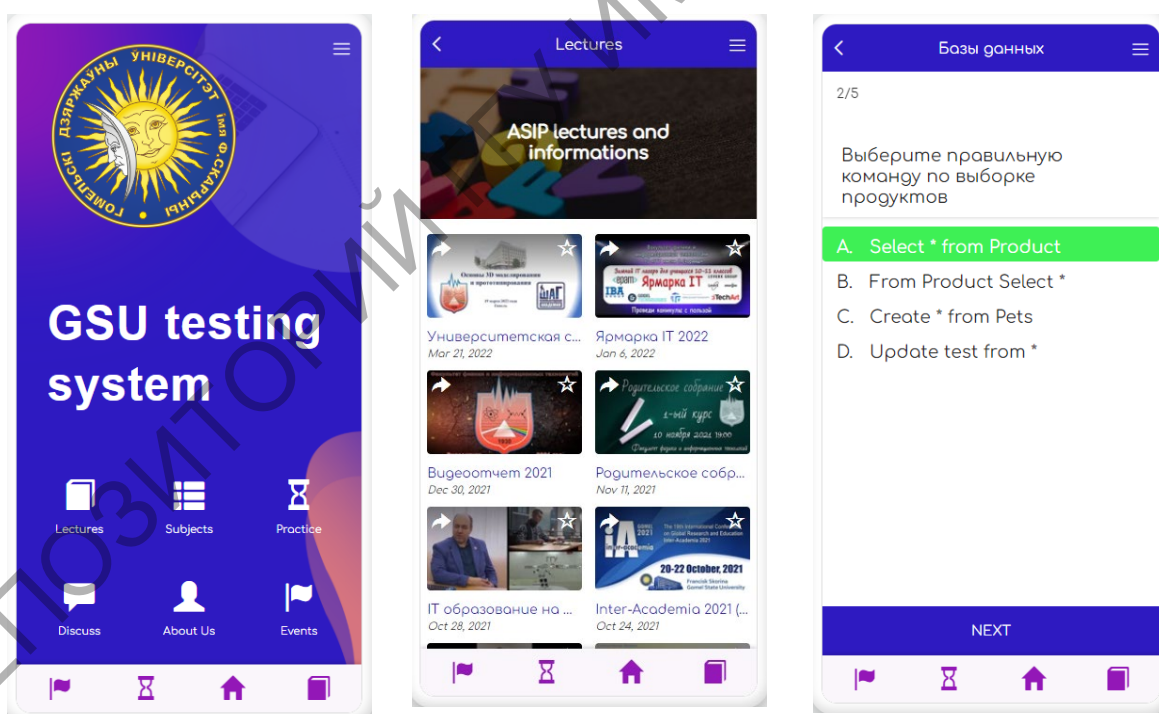


Figure 2 – Database relationships

The correctness of the work is confirmed by successful testing of the developed application.

The result of the study can be assessed as follows:

- 10+ window;
- 40+ React Components Endpoints;
- 14 UI features;
- 96 Unit and Integration tests;
- 5 main and 8 additional tables.

## References

1. React Native [Electronic resources]. – URL: <https://reactnative.dev/> – Date of access: 16.03. 2022.

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## CONTENT MANAGEMENT SYSTEM

The admin panel is usually referred to as a CMS. The content management system (from the English Content Management System) allows you to manage the site, update it regularly, edit and create new pages, articles, products, images. It is also called the «engine» of the site, the speed of content filling; the possibility of quick correction depends on the functionality.

CMS is a separate part of the site, except for the administrator who has access; none of the Internet users can see it. To enter, you need to know the data provided by the developer.

Below you can find examples of most popular CMS.

1 MS Joomla – you can use it free; many prefer it for the possibility of modification in a wide range.

2 CMS WordPress – with its help you can create even a complex project. Open-source code, the ability to integrate plugins, the «transparency» of work incline many to choose it.

3 CMS Bitrix – Russian development, use on a paid basis. Wide functionality, site management using information blocks.

What opportunities does the admin panel give to the owner of the site?

1 Opportunities for resource development, frequent updating of information, addition of relevant data. For online stores, it is indispensable.