## Contents

## Abstract

- **The name of the project:**
  - School digitalization
- **The purposes of the project:**
  - Creating a school website and database
  - Learning how to use tools for creating websites
- **The relevance of the project:**
  - The Digital Kazakhstan program is currently being implemented and one of its directions is the digitalization of the education sector, in particular, the digitalization of educational institutions
- **The project objectives:**
  - Learning how to use tools for creating websites
  - Website and database creation
  - Users registration
  - Database extension
- **The hypothesis of the project:**
  - The website should contain following features: personal account registration, display students and teachers information, list of students achievements, download portfolio as PDF, online application admission, the school blog, and upcoming events
- **Research object:**
  - Programming languages: HTML, CSS, JavaScript, PHP, SQL
- **The research method:**
  - Studying the information available on the Internet (video tutorials, articles, and photos) and putting the acquired knowledge into practice
- **Result:**
  - Launching a school website
- **Practical applications:**
  - Easy access to the school database
  - Disposal of paper documentation at school
  - Speed up data processing

## Introduction

As we all know, today the state program Digital Kazakhstan is being implemented, the purpose of which is to improve the quality of life of the population through the use of digital technologies. One of the areas of this program is the digitalization of education, in particular the digitalization of educational institutions. For this reason, we, together with our teacher, chose this topic.

We decided to implement this global project locally, in the territory of our school. So, the goal of our project is to create a multilanguage dynamic school website with a database on which information about the school, achievements of students and teachers, as well as a list of upcoming events will be displayed. Moreover, the website will have the possibility to register personal accounts for teachers and students.

This website is practical because users can access the database from various platforms at any time. Also, a digital database eliminates the need to store a huge amount of paper documentation, and more importantly, speeds up the processing of information at times.

## The process of creating a school website

At the very beginning, our responsibilities were divided into two parts. One of us was responsible for the appearance of the website, that is, performed the role of a frontend developer, and two others were responsible for the functionality of the website, thereby performing the work of a backend developers. For joint development, we used a web service for hosting IT projects GitHub.


Figure 1. Frontend and backend

## Research

We studied video tutorials on YouTube, performed exercises on the W3Schools website (figure 2), read HTML, CSS, JavaScript, MySQL, PHP documentation on htmlbook.ru, php.net (figure 3), dev.mysql.com. Also, when writing code, we encountered various problems, errors, and bugs, for the solution of which the forum for programmers StackOverflow was used.

w3schools.com

Figure 2. W3Schools

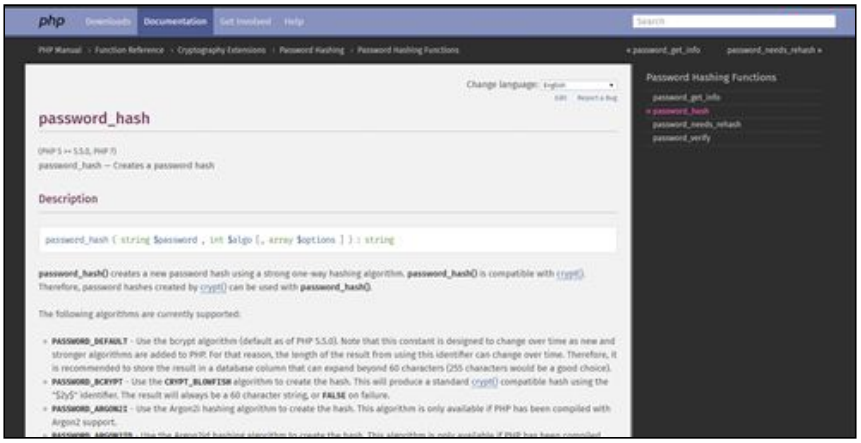


Figure 3. PHP.net

## Frontend

The website layout was created using HTML, CSS, and JavaScript programming languages. In the header of the website is the menu (figure 4) and logo of the school. On the website, you can see information about the Lyceum, the latest achievements of students and upcoming events (figure 5). There is also a news feed that will be updated with articles by students who are members of the Journalism School Club. In the footer of the website, there is contact information and links to the school's social networks.

```
<!-- NAVBAR -->
<header class="header">
    <div class="header_line">
        <div class="container">
            <div class="header_content">
                <div class="header_logo"></div>
                <nav class="nav">
                    <a class="nav_link" href="#" onclick="slowScroll('#about_link')"><?php echo $lang['header_about']; ?></a>
                    <a class="nav_link" href="#" onclick="slowScroll('#advantage_link')"><?php echo $lang['header_advantage']; ?></a>
                    <a class="nav_link" href="#" onclick="slowScroll('#admission_link')"><?php echo $lang['header_admission']; ?></a>
                    <a class="nav_link" href="assets/pages/hz/awards.php"><?php echo $lang['header_rating']; ?></a>
                    <a class="nav_link" href="#" onclick="slowScroll('#event_link')"><?php echo $lang['header_event']; ?></a>
                    <a class="nav_link" href="#" onclick="slowScroll('#blog_link')"><?php echo $lang['header_blog']; ?></a>
                    <a class="nav_link" href="assets/pages/login.php"><img class="user_img" src="../assets/images/header/header_user.png"></a>
                    <a class="nav_link" href="assets/pages/search/search.php"><img class="search_img" src="../assets/images/header/header_search.png"></a>
                </nav>
            </div>
        </div>
    </div>
</header>
```

Figure 4. Navigation menu

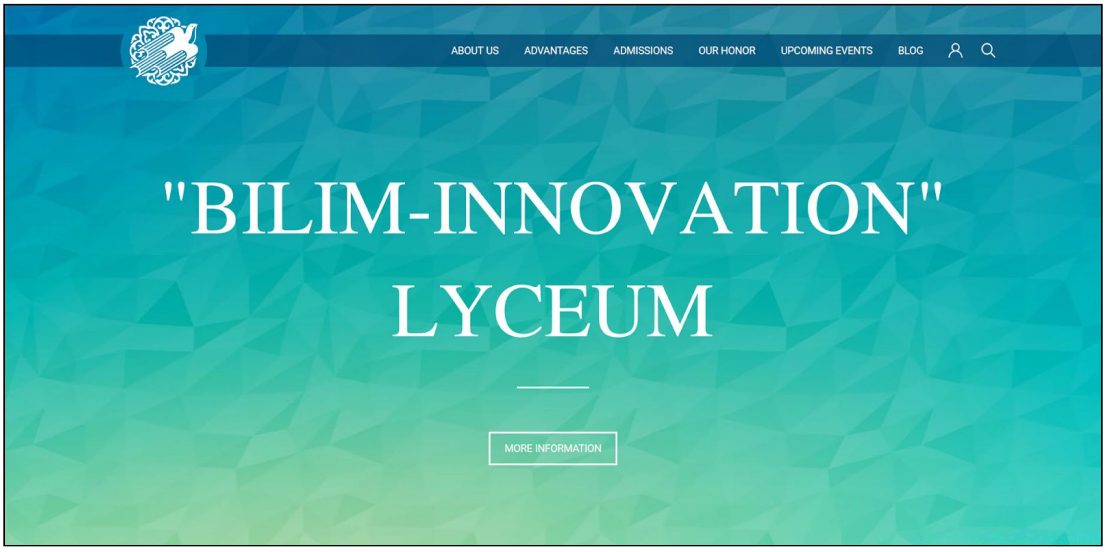


Figure 5. Main page

## Database

The MySQL database management system was used to create the database. And to facilitate working with it, the phpMyAdmin (figures 6,7) web application was used.

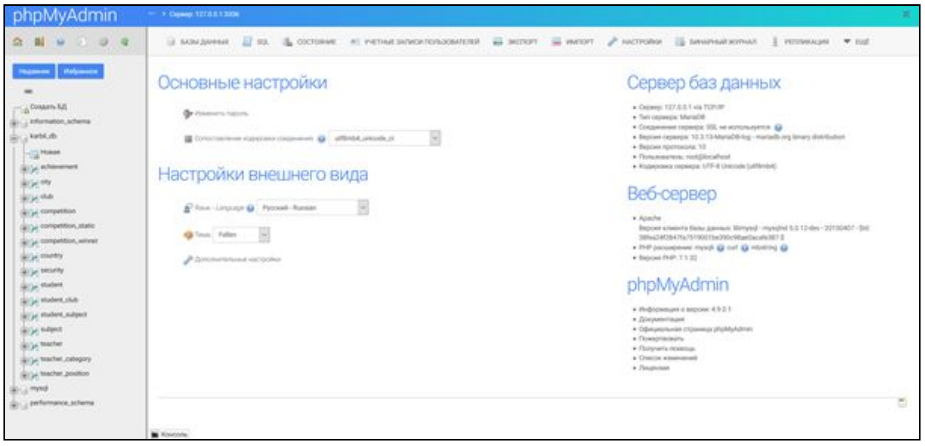


Figure 6. phpMyAdmin interface

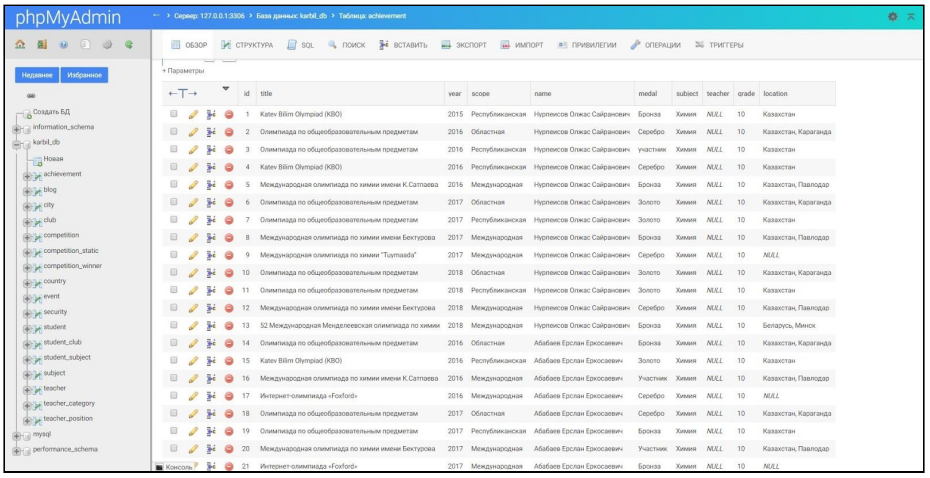


Figure 7. phpMyAdmin table view

## Backend

The server side of the website is based on the PHP scripting language. We created features like user registration, adding of blog entries, language switching, admin page.

```
<div class="container">
    <div class="event_content">
        <?php
        $events = mysqli_query($connection, 'SELECT * FROM event ORDER BY event_date ASC LIMIT 3');
        while ($event = mysqli_fetch_assoc($events)):
        ?>
            <div class="event_item">
                <div class="event_item_header">
                    <div class="event_title"><?php echo $event['title']; ?></div>
                    <a href="../assets/pages/event.php?id=<?php echo $event['id']; ?>">
                        <img class="event_photo" src="../assets/images/event/<?php echo $event['image']; ?>">
                    </a>
                    <div class="event_date">
                        <div class="event_date_day"><?php echo date('j', strtotime($event['event_date'])); ?></div><?php echo $lang[date('F', strtotime($event['
                            event_date']))]; ?>
                    </div>
                </div>
                <div class="event_item_content">
                    <div class="event_text">
                        <?php echo mb_substr(strip_tags($event['text']), 0, 50, 'utf-8') . " ..."; ?>
                    </div>
                </div>
                <div class="event_footer">
                    <div class="event_button">
                        <a class="event_button_link" href="../assets/pages/event.php?id=<?php echo $event['id']; ?>"><?php echo $lang['event_button']; ?></a>
                    </div>
                </div>
            </div>
        <?php endwhile; ?>
    </div>
</div>
```

Figure 8. Upcoming events

We want to note that when creating the website, frameworks were not used, everything was written from scratch. So it was decided to do for a more detailed understanding of the principles of working with web programming languages.

```
<script>
    String.prototype.replaceAll = function (a, b) { return this.split(a).join(b) };
    var translite_lat = {
        "А": "A", "а": "a",
        "Ә": "Á", "ә": "á",
        "Б": "B", "б": "b",
        "Д": "D", "д": "d",
```

Figure 9. Transliteration to latin alphabet

```
var convert_to_lat = function (text) {
    for (var key in _translate_lat) {
        text = text.replaceAll(key.toString(), _translate_lat[key]);
    }
    for (key in translite_lat) {
        text = text.replaceAll(key.toString(), translite_lat[key]);
    }
    return text;
};
```

Figure 10. Transliteration script

**Hosting**

After creating the website, it was successfully launched into the network. For domain and hosting rental, the services of the hoster.kz were used.

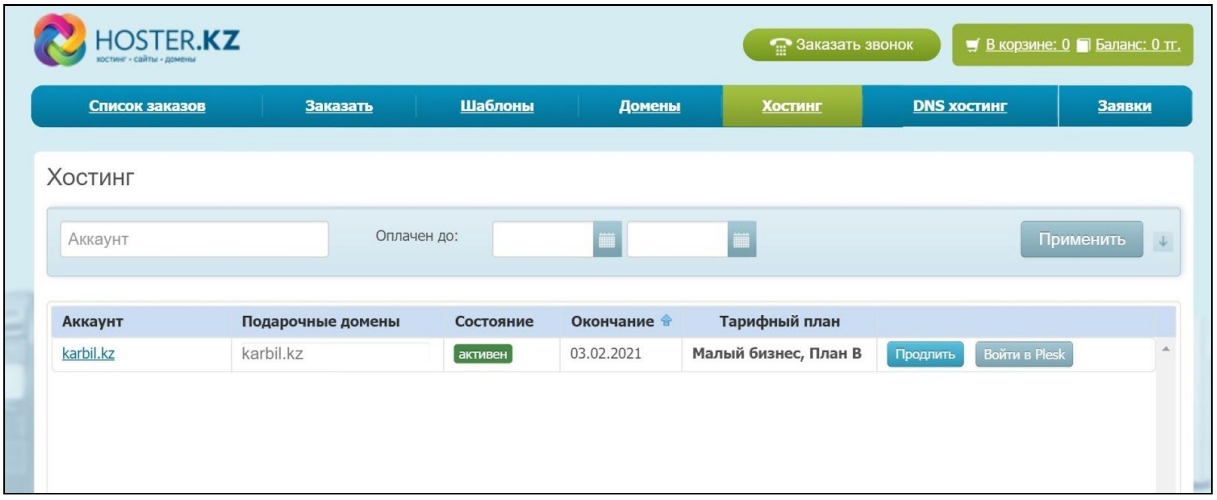


Figure 10. Control panel hoster.kz

**Accounts registration**

The next thing that has been added was the function of registering a personal account for students and teachers. In an account, the student can edit personal information or add new achievements by sending a request to the teacher. And that, in turn, will “accept” or “reject” it.

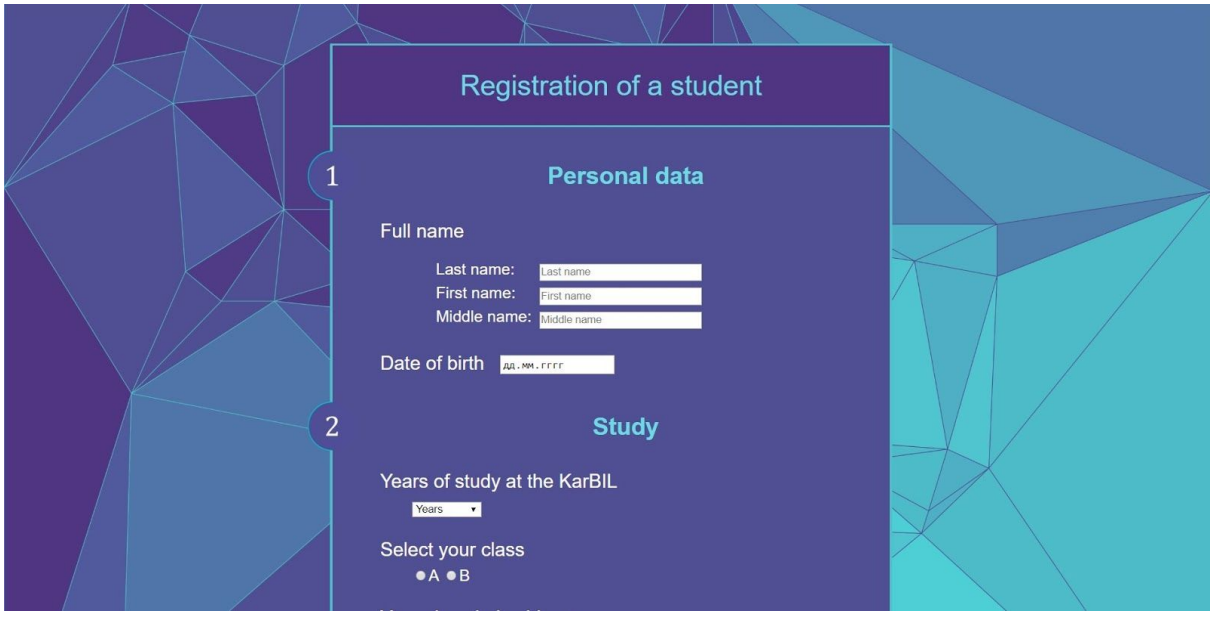


Figure 11. Registration of a student

## Database extension

The next goal was to bring achievements to the database. For over 10 years, our supervisor has been collecting student achievements in paper version. Using the data in this form is not very convenient and therefore, even before the start of the project, we have begun transferring these paper folders into digital format, in the form of Microsoft Excel and Word files. But this option also has its drawbacks, because in order to access the data you need to transfer it from one computer to another in various ways, for example, via a USB flash drive. Therefore, the transfer of ready-made digital versions of achievements to the school database was started.

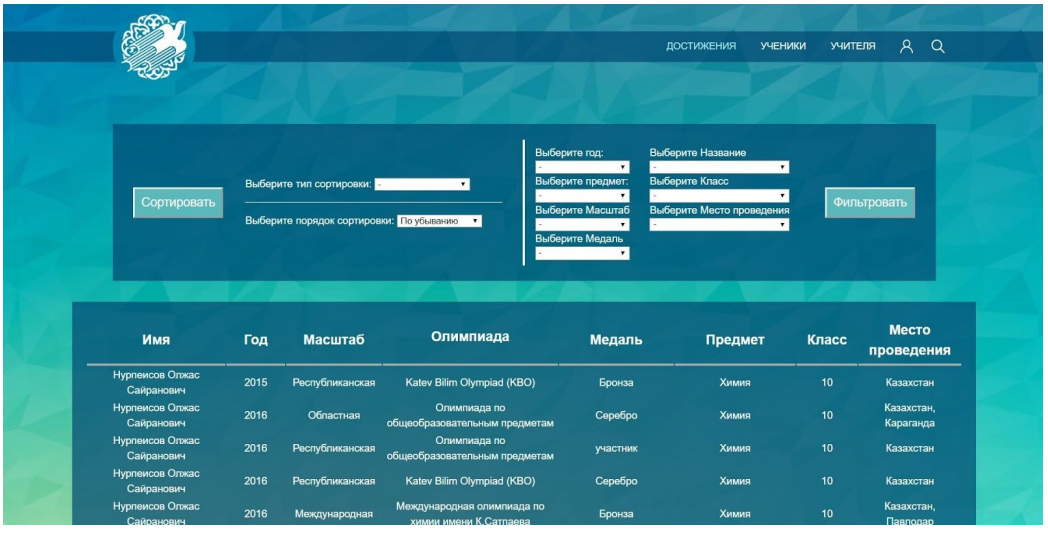


Figure 15. Achievements page

```
<table class="all_table">
    <tr>
        <th class="th_name">Имя</th>
        <th class="th_year">Год</th>
        <th class="th_scope">Масштаб</th>
        <th class="th_olympiad">Олимпиада</th>
        <th class="th_medal">Медаль</th>
        <th class="th_subject">Предмет</th>
        <th class="th_class">Класс</th>
        <th class="th_location">Место проведения</th>
    </tr>
    <?php
      $result = mysqli_query($connection, 'SELECT * FROM achievement ORDER BY title');
      while ( ($record = mysqli_fetch_assoc($result)) ){
          echo '<tr><td><a class="awards_name_link" href="profiles/student_profile.php">'.
          $record['name']
          .'</a></td>'.'<td>'.
          $record['year']
          .'</td>'.'<td>'.
          $record['scope']
          .'</td>'.'<td>'.
          $record['title']
          .'</td>'.'<td>'.
          $record['medal']
          .'</td>'.'<td>'.
          $record['subject']
          .'</td>'.'<td>'.
          $record['grade']
          .'</td>'.'<td>'.
          $record['location']
          .'</td></tr>';
      }
    ?>
</table>
```

Figure 16. Getting achievements list from database

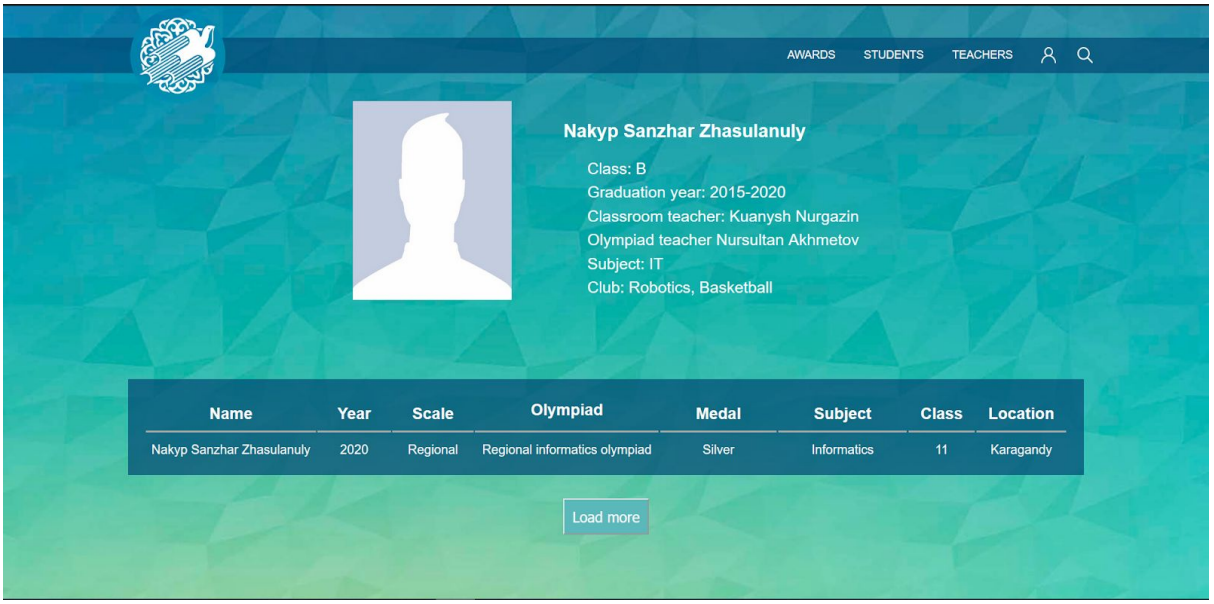


Figure 17. Student profile

The database contains the following information: name of student, class, subject, name of the Olympiad/competition, a result (medal, certificate), place and date of the event. Filters are available by year, grade, Olympiad and others. The website has a database search function, a link to which is located on the right side of the menu. Search results are tabbed.

```
--
-- Структура таблицы `competition_static`
--

CREATE TABLE `competition_static` (
  `id` int(11) NOT NULL,
  `level_id` int(11) NOT NULL,
  `logo` varchar(100) NOT NULL,
  `name_kz` varchar(100) NOT NULL,
  `name_ru` varchar(100) NOT NULL,
  `name_en` varchar(100) NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=utf8;

-- --------------------------------------------------------

--
-- Структура таблицы `competition_winner`
--

CREATE TABLE `competition_winner` (
  `student_id` int(11) NOT NULL,
  `competition_id` int(11) NOT NULL,
  `prize` int(11) NOT NULL,
  `subject_id` int(11) NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=utf8;

```

Figure 17. The structure of the table of winners of the Olympiads

## Conclusion

At the moment, life in Kazakhstan is undergoing many changes. These changes affect different industries. At the moment, our Republic is facing the task that the Head of State set in his message. He announced the Third Modernization, the core of which is digitalization. The development of this direction is necessary for Kazakhstan to enter the top 30 developed countries of the world. Dozens of state projects aimed at automation and digitalization of education are being implemented throughout the republic. New IT classes, robotics classrooms are opening across Kazakhstan, schools are connecting to digital educational resources such as Bilimland. The President's message also applies to the young generation of the country, because it is a long-term project that requires highly skilled workers in the country. Our task is to translate plans into reality. To do this, we must obtain high-quality knowledge in the IT field. The republic needs to increase the number of IT employees, and current students should develop programming skills from an early age. To do this, they need to participate in competitions where they will have the opportunity to develop in a competitive environment. A large number of such contests are held annually in the country. On them, students can exchange experiences and show their skills in business. These skills include the ability to create websites, which we learn when creating this project.

In conclusion, I would like to mention once again that the future of the country is in the hands of young people and without knowledge in the IT industry, the Republic will not be able to achieve its goals.

**List of references**

1. wikipedia.org
2. online.zakon.kz
3. tproger.ru
4. htmlbook.ru
5. inform.kz
6. bilimland.kz