Online course development platform

PixelWhoot

- **Educational software -**

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Piatra Neamt

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Content

Argument 3

1. **Presentation of the application** 4
2. **Installation on mobile devices** 10
3. **Administration module** 13
4. **Application architecture** 16

BIBLIOGRAPHY 17

ARGUMENT

Talking to our colleagues and friends, we found that a lot of people are interested in technology, they would like to be able to make their own applications, but they don't know where and how to start learning.

We set out to create an educational software – a platform for creating online courses. We populated the platform with a Node.js and React.js course, after completing which a person can make from simple projects like the TO DO app to more complicated projects.

The source of inspiration was the language learning platform Duolingo; we thought that through a similar application you can easily and attractively learn a programming language. The application can run on a computer but can also be installed on a phone or tablet.

PixelWhoot educational software you will learn:

- what is NodeJs and React.Js
- how to connect
- how to install
- how to build an application
- you will be able to study application examples

The course is presented on video, to be easy to follow, the theoretical sequences are followed by tests. After completing each test the user gets points points that accumulate and can be used to buy apps.

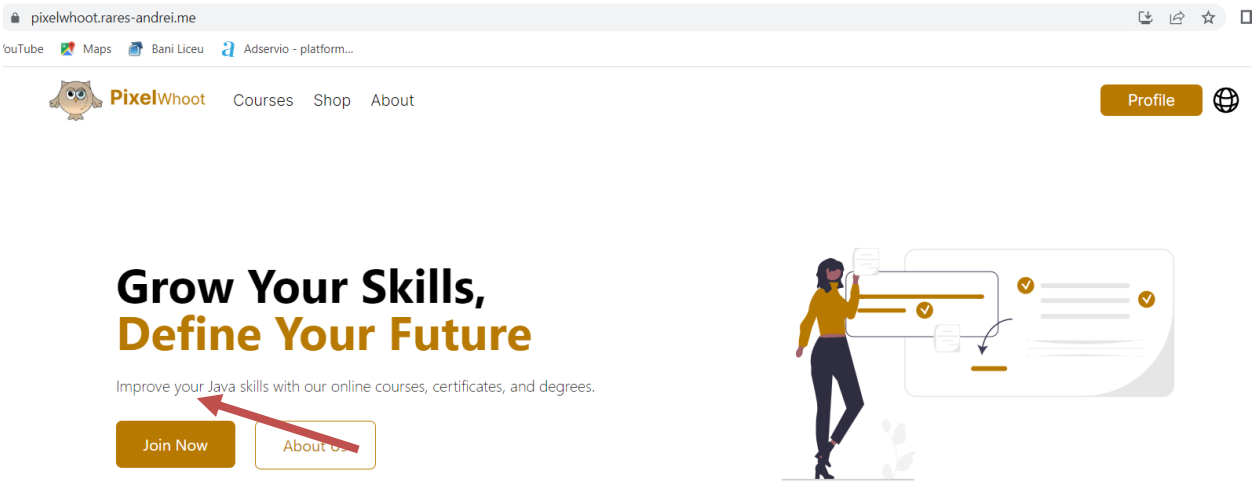
Node.Js/React.Js technologies are very versatile and offer a lot of options to users. The best way to learn is to go through the course and try some sample projects. Entry-level projects will allow you to familiarize yourself with the platform and programming language. These project ideas should provide some indication of what the platform is capable of, requiring only a basic understanding of the technology.

Other courses can also be uploaded to the platform from the administration mode.

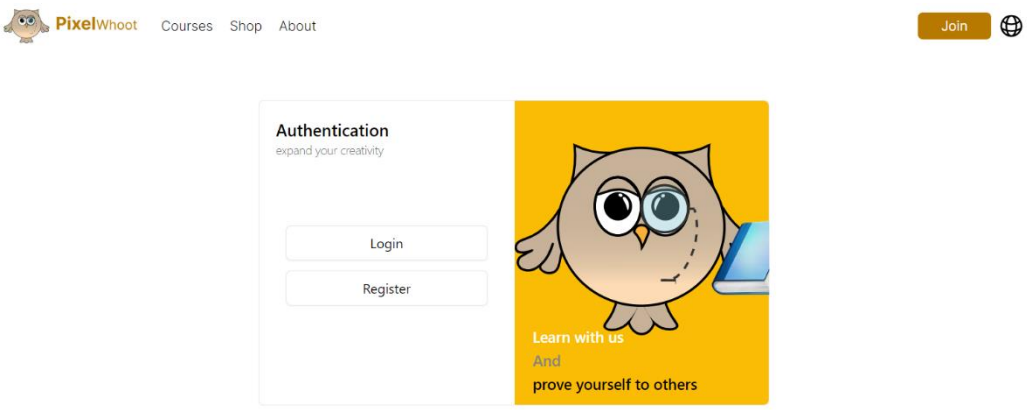
Being a technology that is on the cutting edge of progress, it is constantly evolving and developing. We will continue to expand this educational software to reach as many interesting projects as possible and to provide a picture of the impact that Java has on the technological world.

1. Presentation of the application

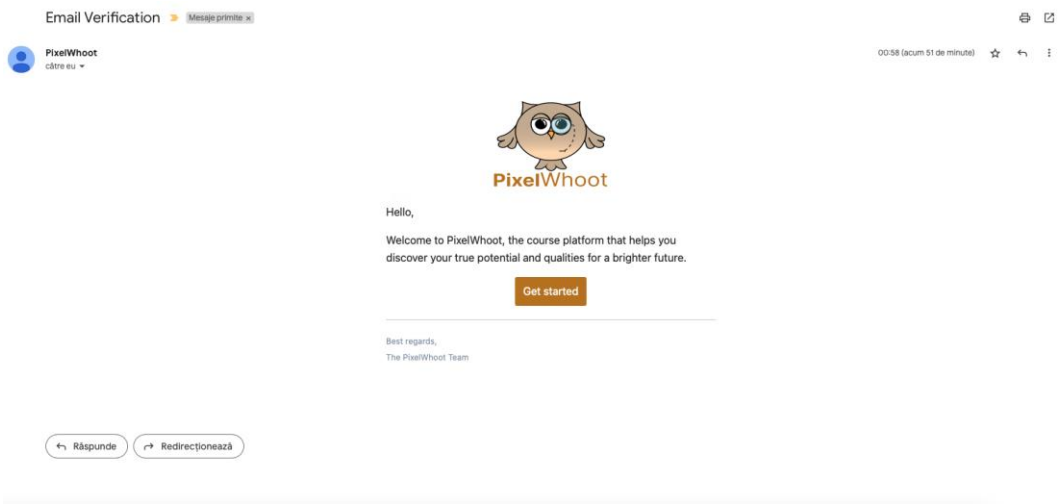
To use the Arduino educational software, often visit the web https://pixelwhoot.rares-andrei.me/



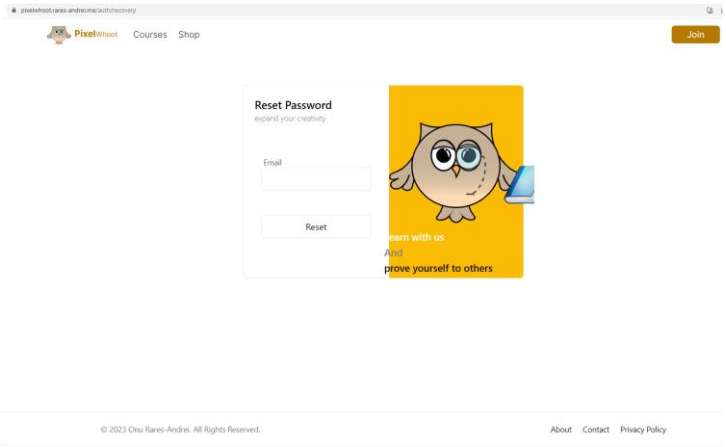
In the start window we are invited to create an account and connect.



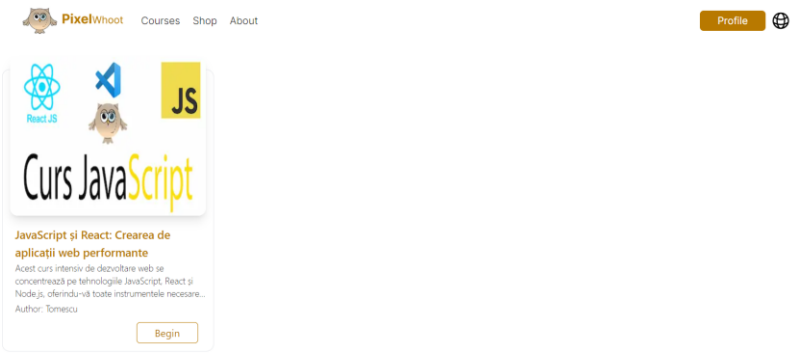
After the account has been created, we must verify it using the link received by email, it is valid 5 minutes after sending



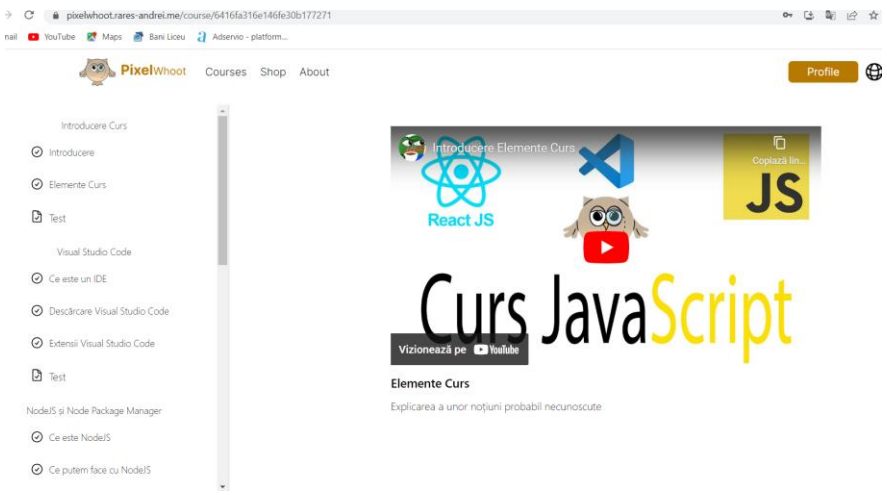
If the account already exists and I forgot the password, it can be recovered:



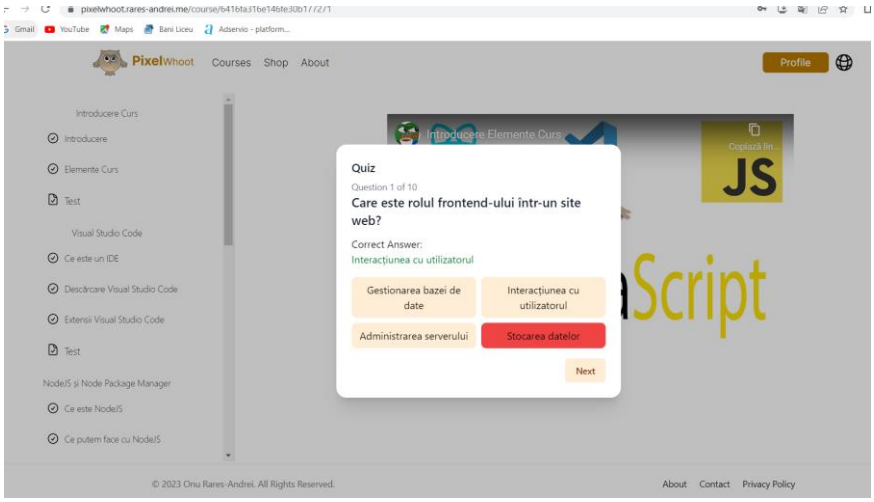
The Node.Js and React.Js course is posted in the **Courses section.**



The lessons are presented on video and are followed by tests:

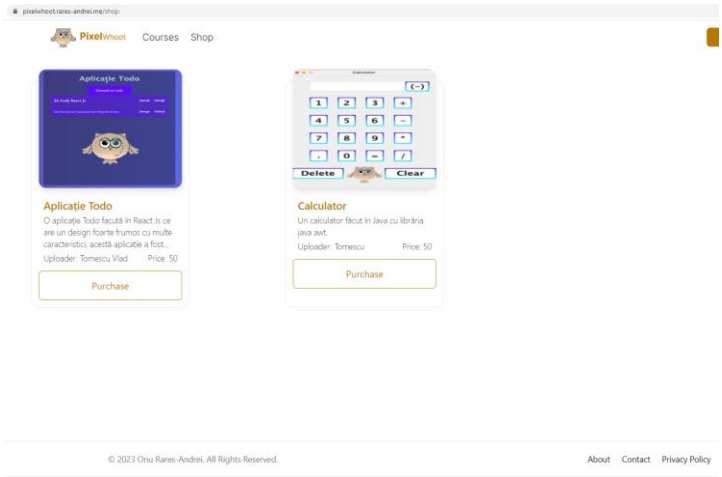


The tests are single-choice items:



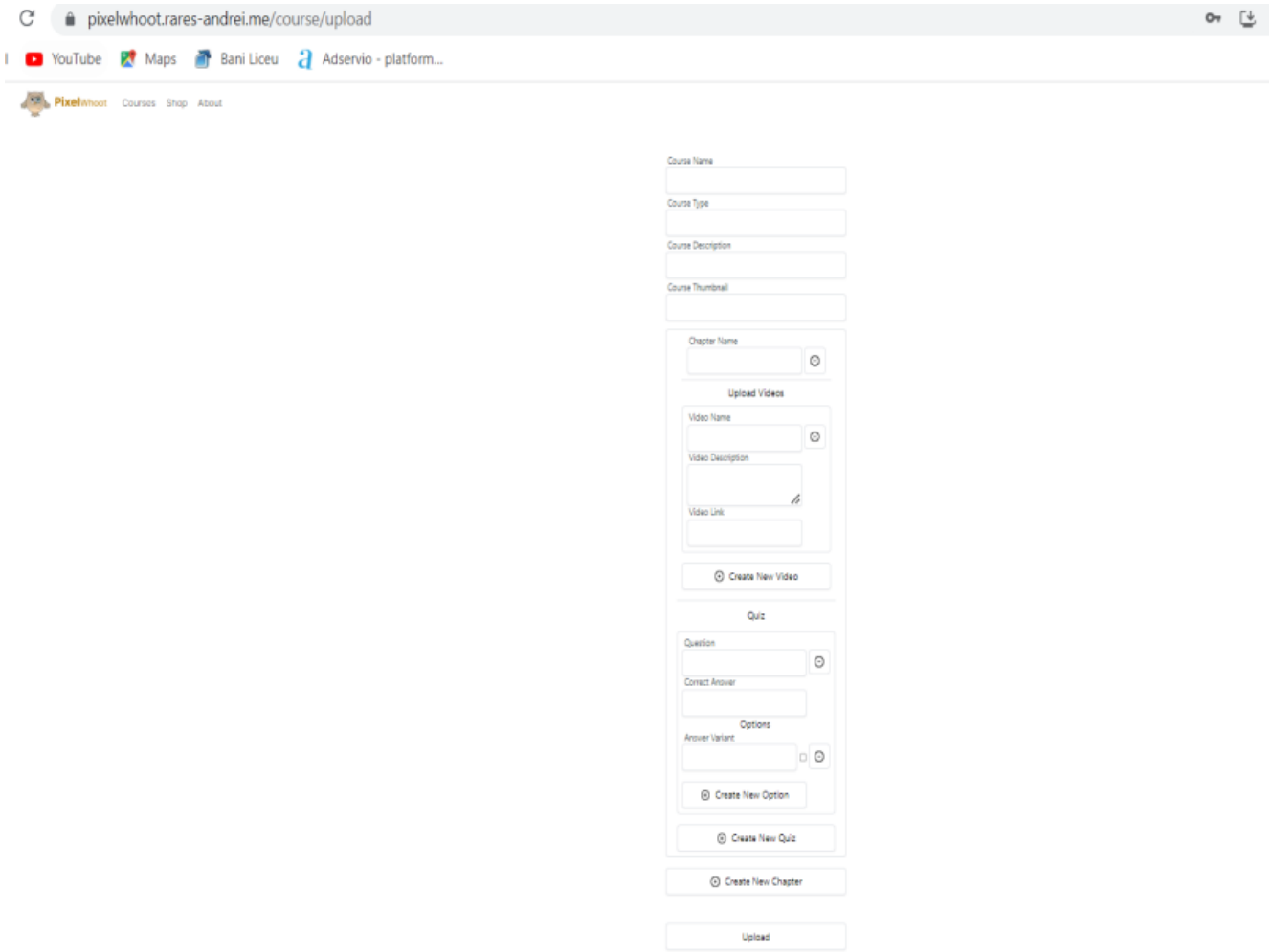
To pass to the next course sequence, the student must achieve a minimum of 50% of the score. Passing the test will also earn him a number of points that will count. With these points the student will be able to buy applications from **the Shop page.** For now we only have one app uploaded for sale, the TODO app.

Shop page :

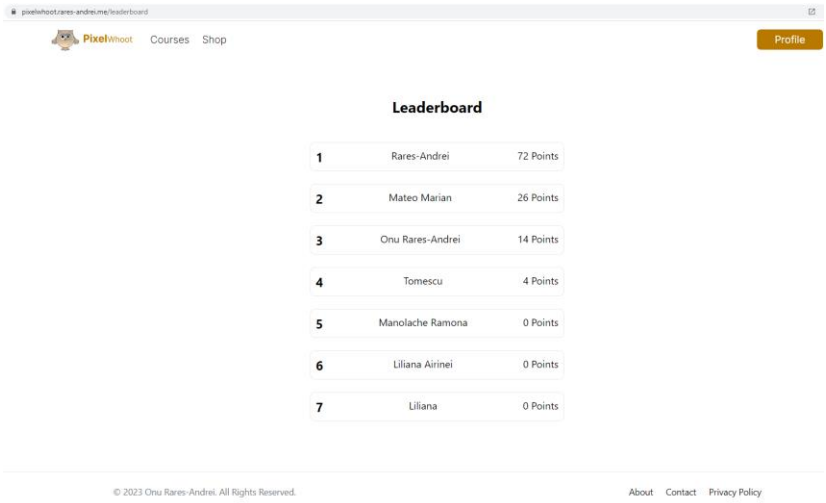


Profile menu counts the points accumulated by the user, allows uploading a course, viewing the active course, access to the administration module, the shopping cart (Purchased Items), the leaderboard, the Settings module and Logout:

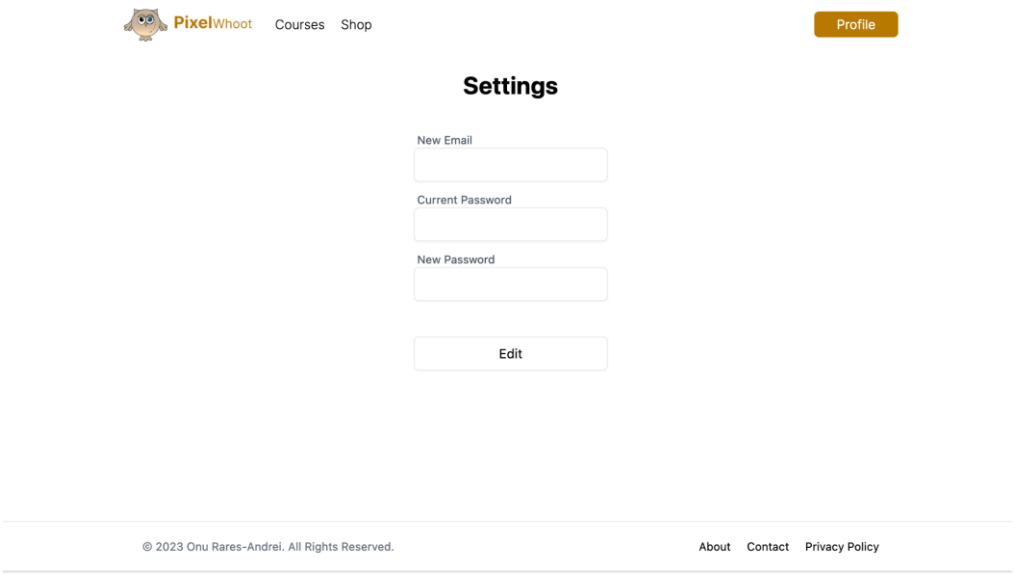
Upload Course module - includes options for uploading a new course, lessons and tests:



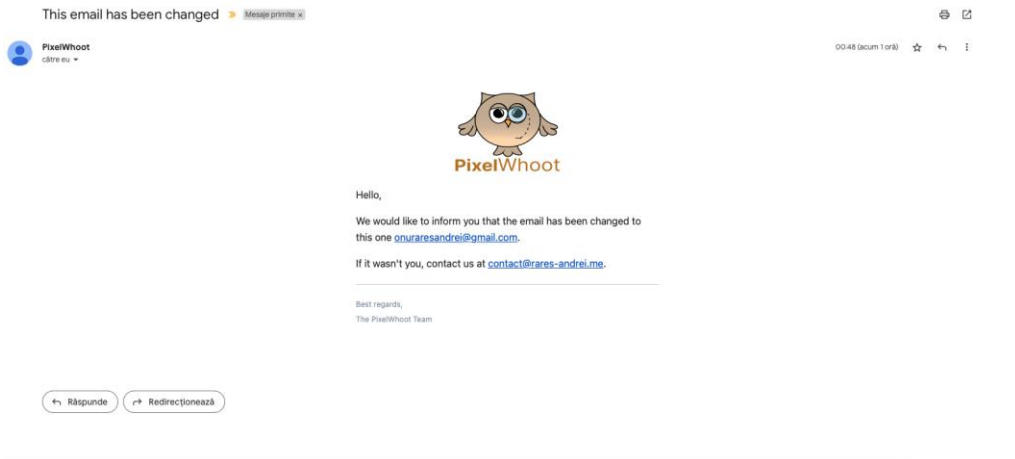
Leaderboard user test results ranking :



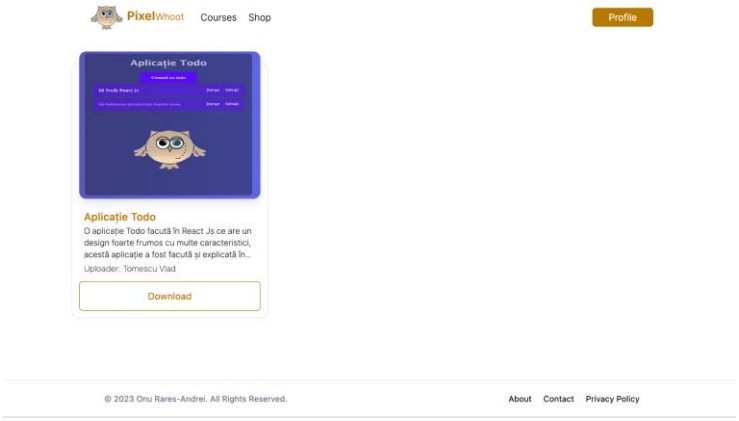
Each user can change their password and email in **the settings**



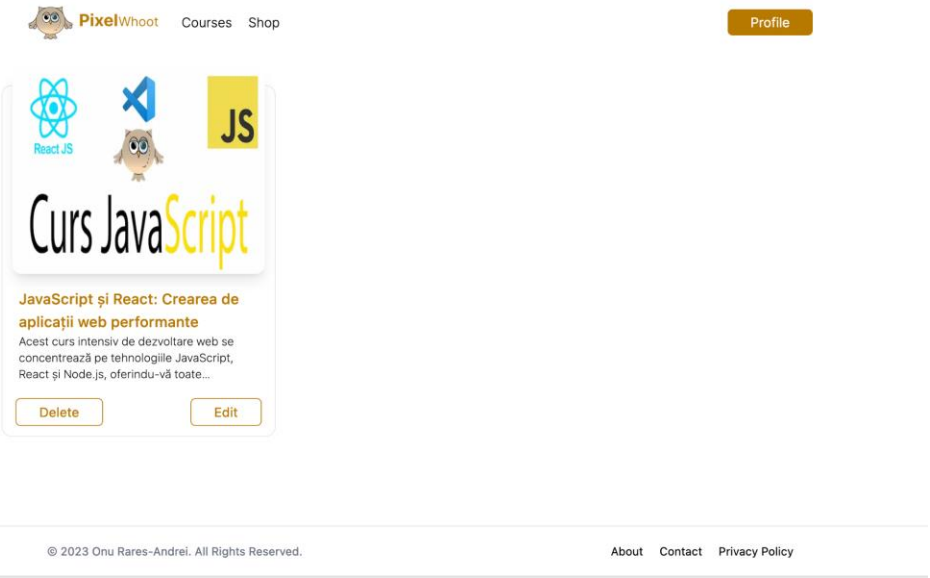
After we change the email with a new one, we will receive a verification email on the new one and a warning email on the old one



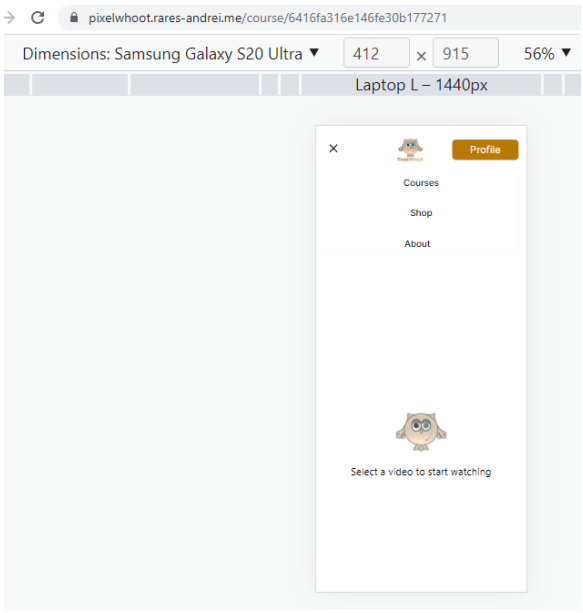
List of items purchased from the **shop**



The list where the creator can see the courses uploaded to the site



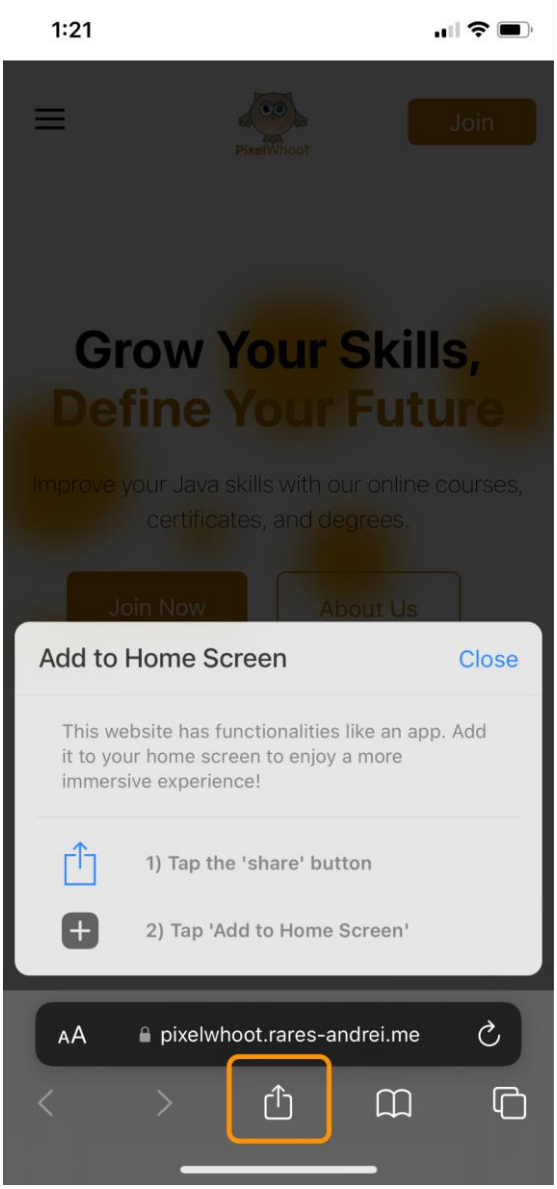
The application can also be used and installed on the phone:


pixelwhoot.rares-andrei.me/course/6416fa316e146fe30b177271
Dimensions: Samsung Galaxy S20 Ultra
412
915
56%
Laptop L – 1440px
Profile
Courses
Shop
About
Select a video to start watching

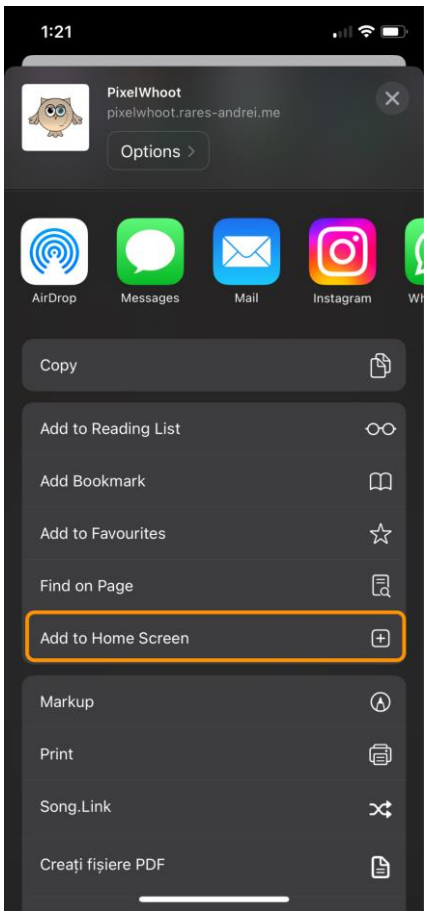
2. Installation on mobile devices

Installation For iOS:

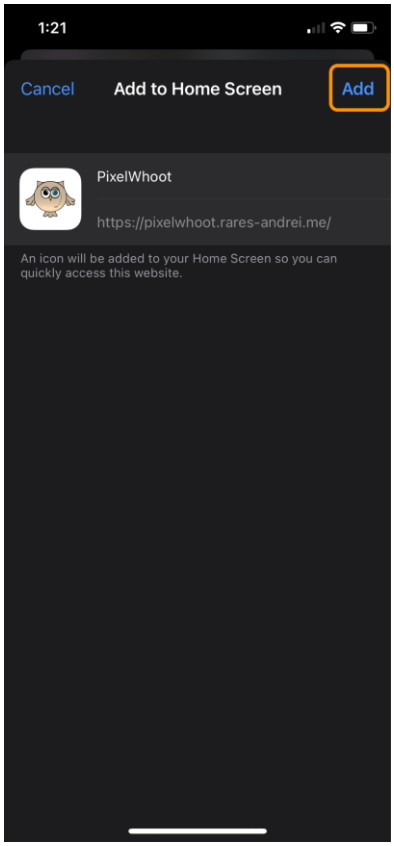
We access the web address https://pixelwhoot.rares-andrei.me/ and press the ***Share button***



Add to home screen button :



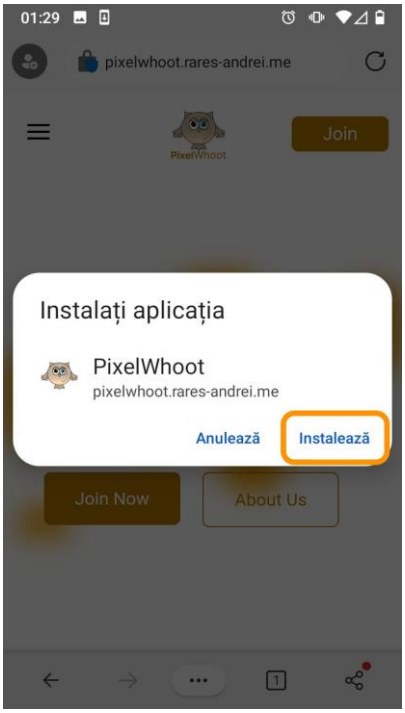
Then click the ***Add button:***



Installation for Android:

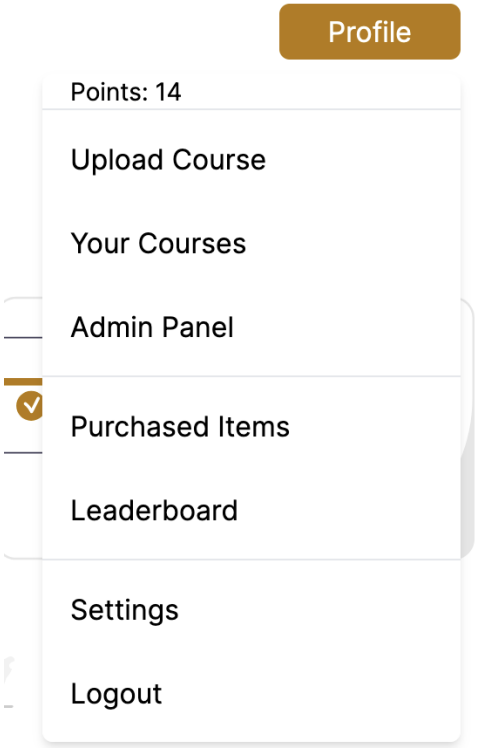
We go to the web address https://pixelwhoot.rares-andrei.me/ and press the ***Add PixelWhoot to your home screen button*** :

Click on the ***Install button***



3. Administration module

To access the administrators page we need an account that has administrator rank on it.



After clicking on the "Admin Panel" button, we will be redirected to the administrators page where we can see a list of all users, all courses and items

PixelWhoot Courses Shop Profile

Users Courses Items

Name	Email Verified	Creator	Points	
Rares-Andrei	true	false	0	Edit
Tomescu	true	true	4	Edit
Manolache Ramona	false	false	0	Edit
Rares-Andrei	true	true	14	Edit
Liliana Airinei	true	false	0	Edit
Mateo Marian	true	false	26	Edit
Liliana	true	false	0	Edit

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PixelWhoot Courses Shop Profile

Users Courses Items

Image	Name	Author	Type	
	JavaScript și React: Crearea de aplicații web performante	Onu Rares-Andrei	Javascript	Edit

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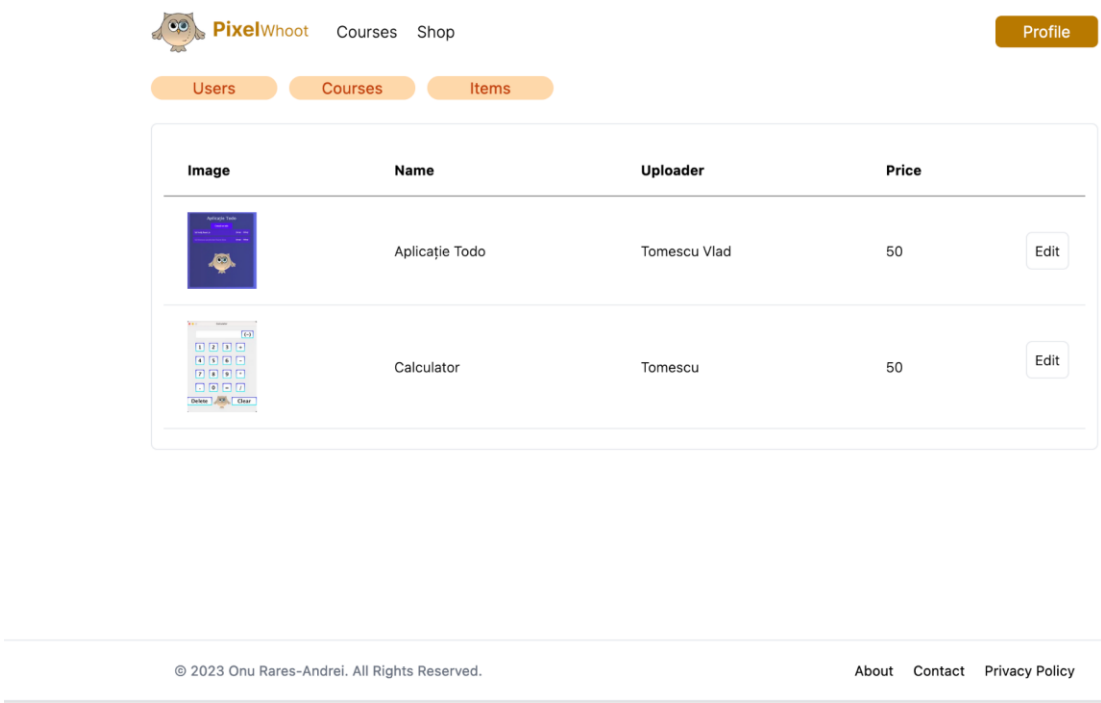
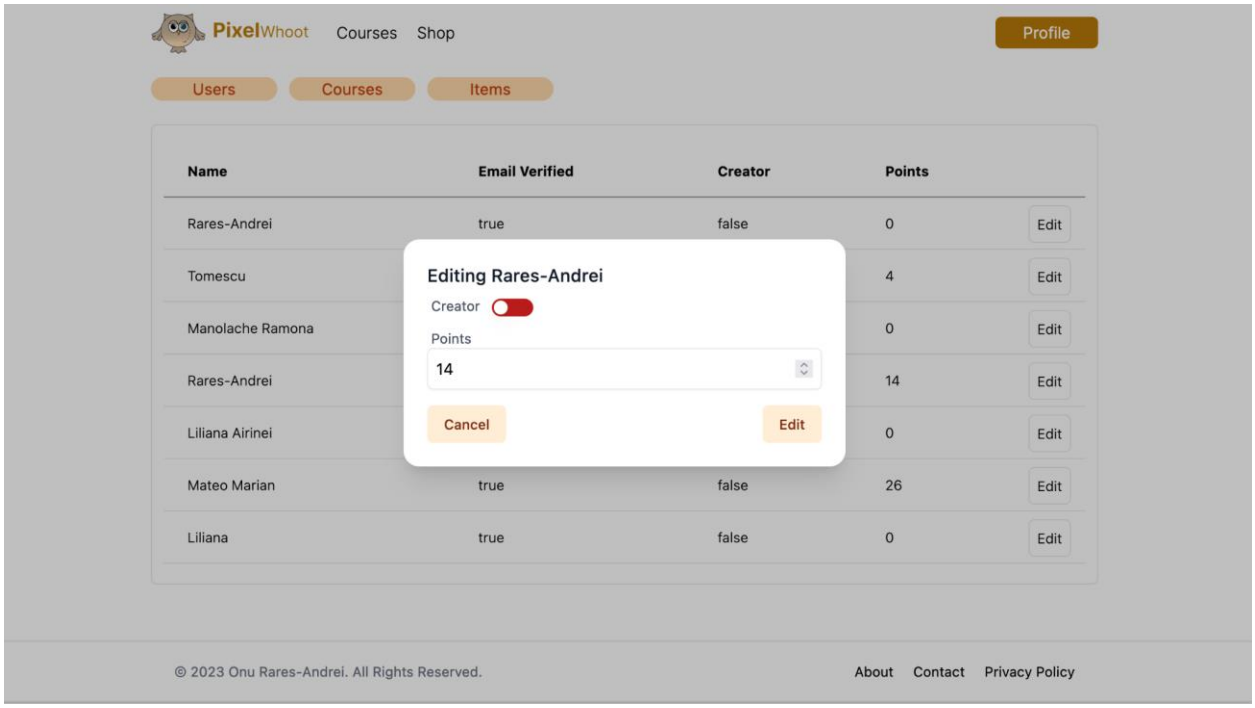
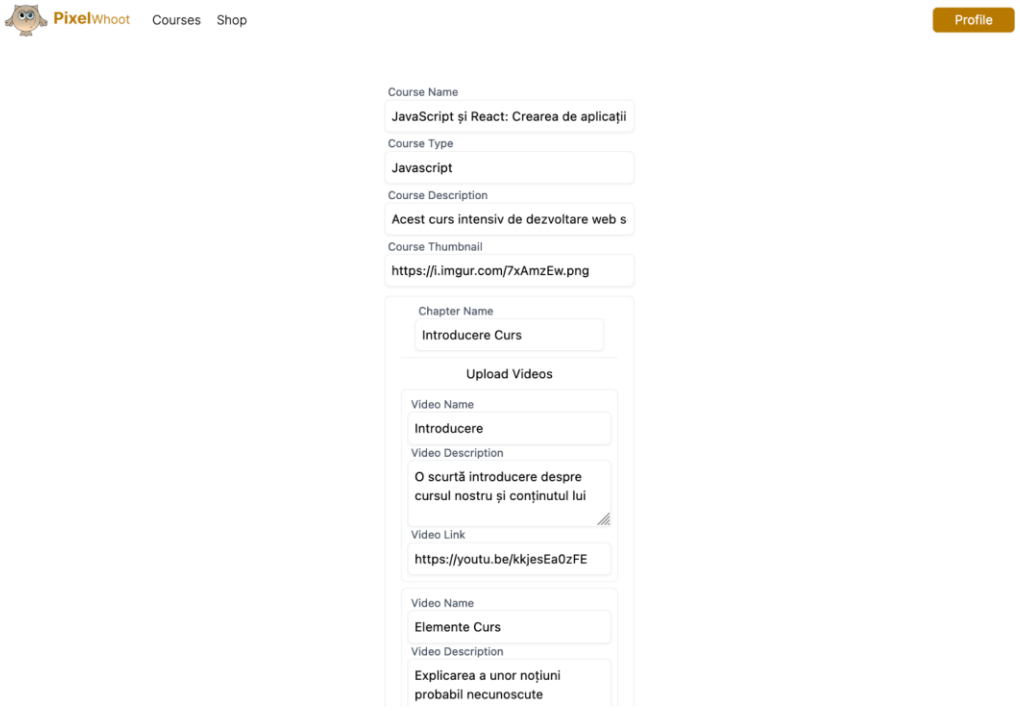


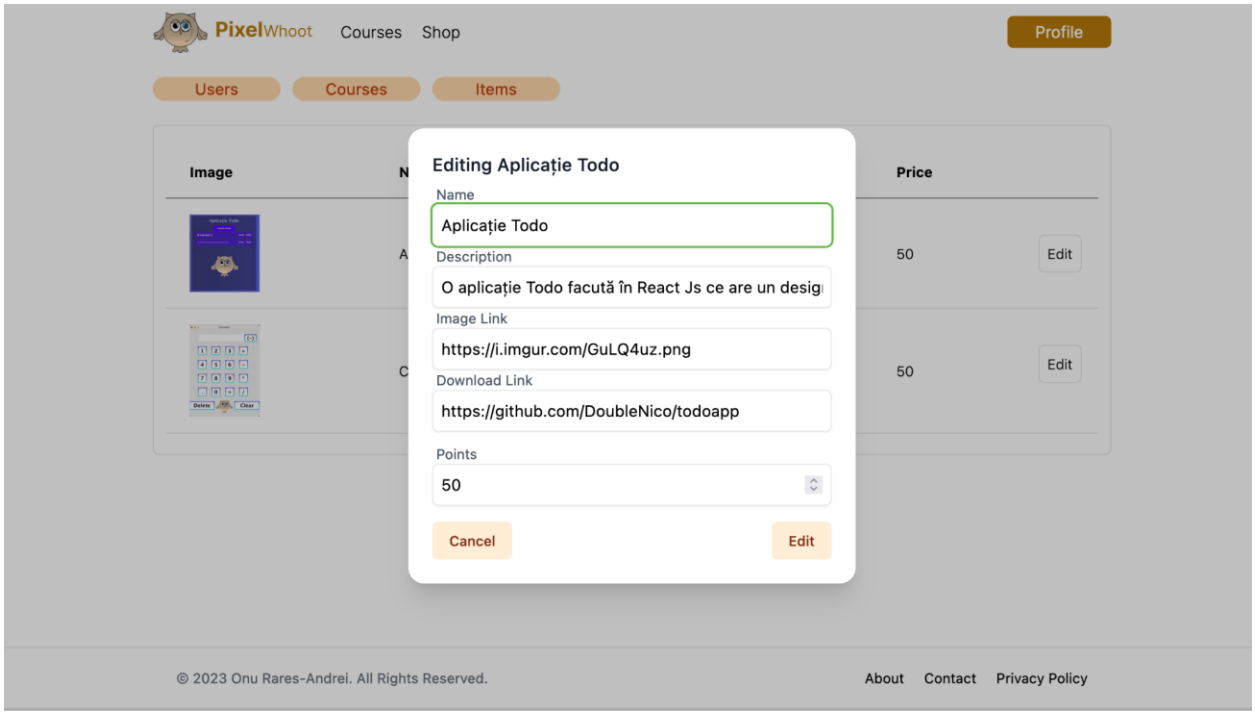
With admin status on the account, we can promote users to creator status so that they can also upload courses and items to the site and we can add/remove points to them.



We can edit every course that is on the site



And we can also edit each existing item



4. Application architecture

The javascript library is React.js supported by the Next.js framework

The component library is called Headless UI which is used together with Tailwind CSS

Icons are created by Heroicons

The video player is React-Player

The information from the API is retrieved with the help of SWR

Progressive webapp(PWA) was created with Next-PWA

The logo was created by Cerbu Ionut

The images are uploaded to Imgur

The forms were created with Formik

Emails are sent using Nodemailer

The token in the email is created with JWT

The token expiration time is currently being checked

The ORM is Prisma which uses the MongoDB database

User authentication and registration is done through an API created with ExpressJS

Passwords were encrypted with Bcrypt

The login system was created with PassportJS

The session is made with JWT

Authentication API source code

PixelWhoot source code

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