



**University of Arkansas – CSCE Department  
Capstone II – Final Report –Fall 2021**

**Programming Challenges**

**Jozef Dusenka, Mark Alexraj, Rafael Valadez Alvarado**

**Abstract**

This project is a website that provides a solution for the programming student to access centralized place for programming challenges of different levels.

**1.0 Problem**

Nowadays there is not really a place on the internet that would truly prepare a programming student for life after graduation. Most students do find a job in the programming field, but there is still a minority that are in search of a job to put their programming skills to use.

**2.0 Objective**

The objective of this project was to create a website that accommodates programming challenges of different levels that helps students polish their skills in specific areas of programming that they would want to further pursue.

**3.0 Background**

**3.1 Key Concepts**

Since this project is solely software based, we did not need to use any type of physical technology. We decided to use the Heroku cloud platform to deploy our website instead of the previously planned UARK Turing system due to the fact that the Turing system was not able to compile and run our back-end python files.

**3.2 Related Work**

There are multiple websites that specialize in educating programming enthusiasts, however they either specialize in one primary subject rather than all of them combined or they only provide a general overview of many programming subjects.

**4.0 Design**

**4.1 Requirements and/or Use Cases and/or Design Goals**

User being able to create an account.

User being able to log into their account at any time after account creation.

After logging in, user is able to see the challenges of their choice.

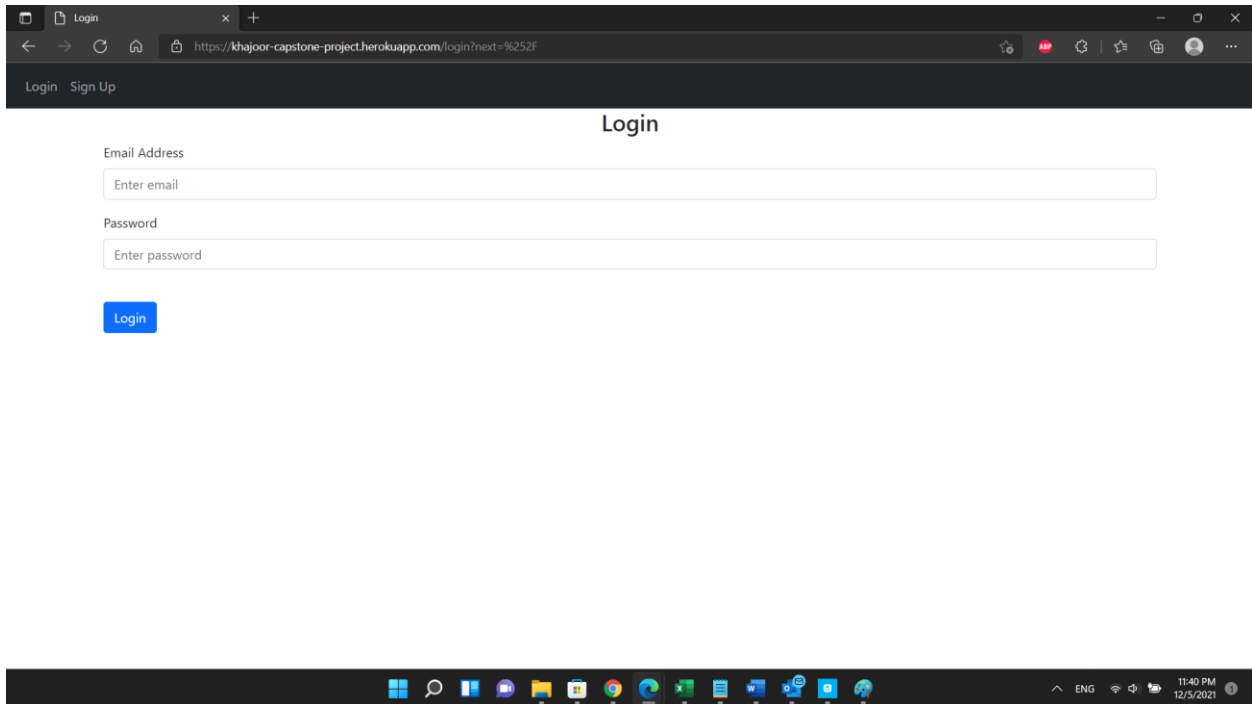
User being able to choose the challenges of their programming skill level.

User being able to write notes that are saved into his account.

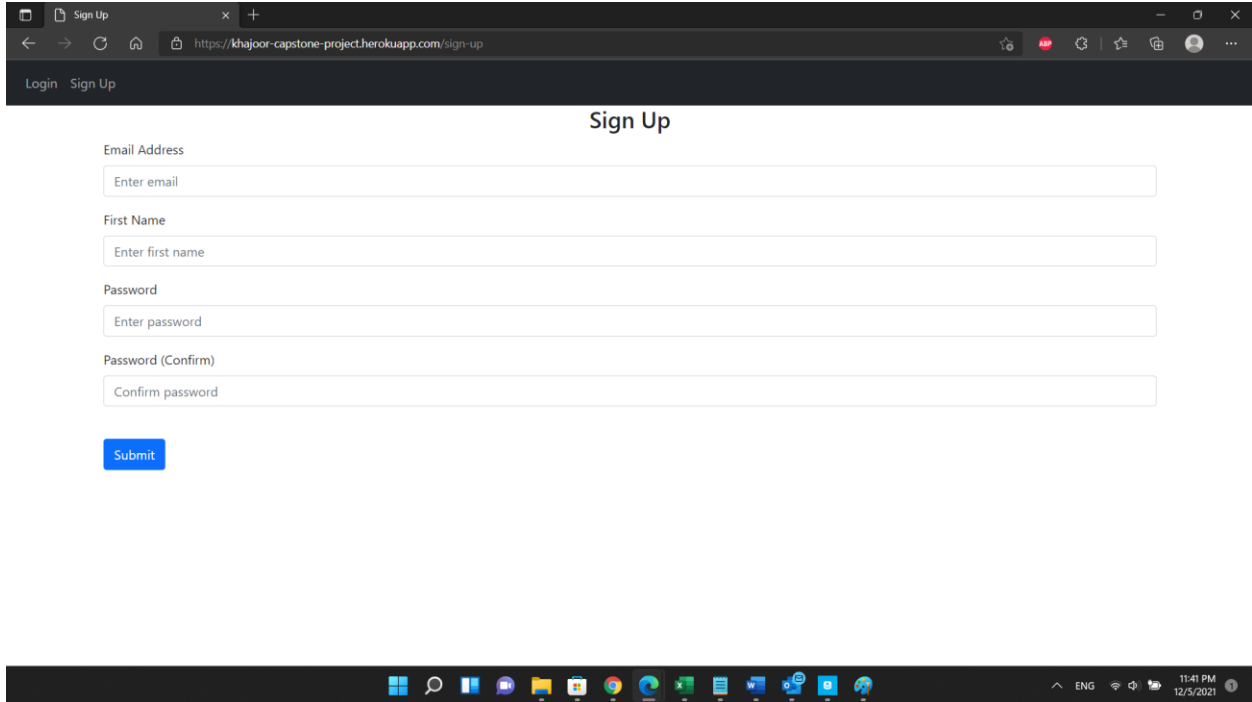
User being able to upload their own files of the specific type that are saved into his account.

User being able to contact the website developers through the website.

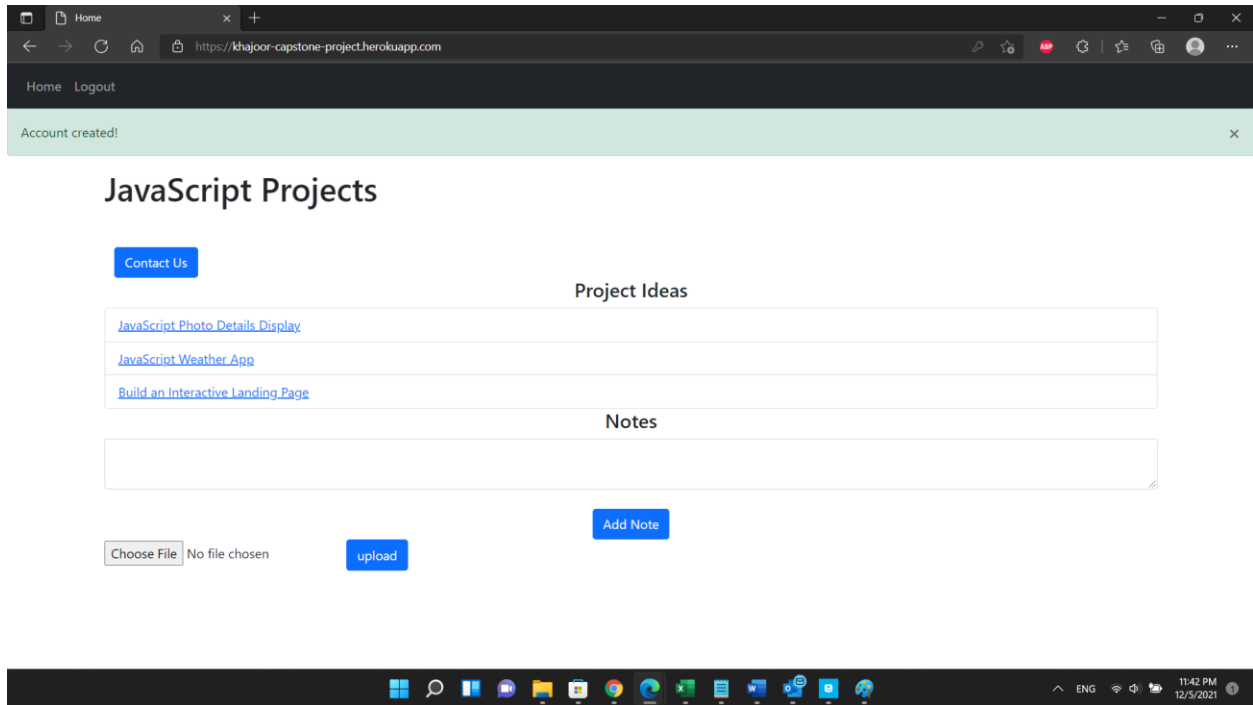
## 4.2 [High Level / Detailed] Architecture



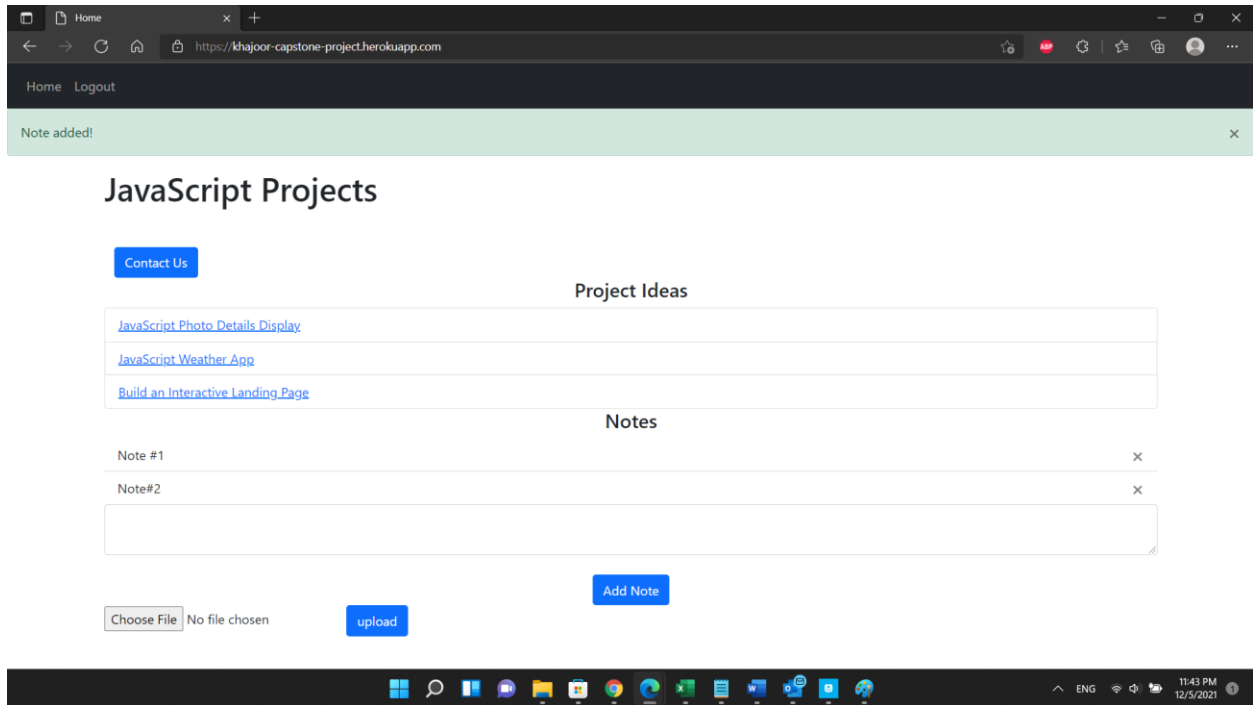
User starts with the main page that lets user log in. If the user does not have an account It can be created by clicking on the Sign up button.



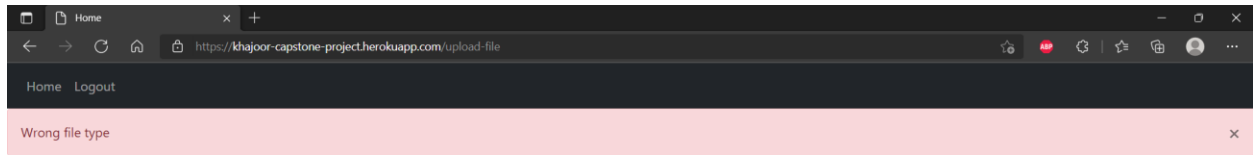
The sign up page lets user create their own account. It requires an email adress, first name and a password that is at least 7 alphanumerical values.



After account creation or logging in, users are transferred to their default page where they can choose from different programming types, challenges, ideas, etc.



This page also lets users create notes that are saved to their accounts and are available to be accessed at any time after logging in in the future.



## JavaScript Projects

Contact Us

### Project Ideas

- [JavaScript Photo Details Display](#)
- [JavaScript Weather App](#)
- [Build an Interactive Landing Page](#)

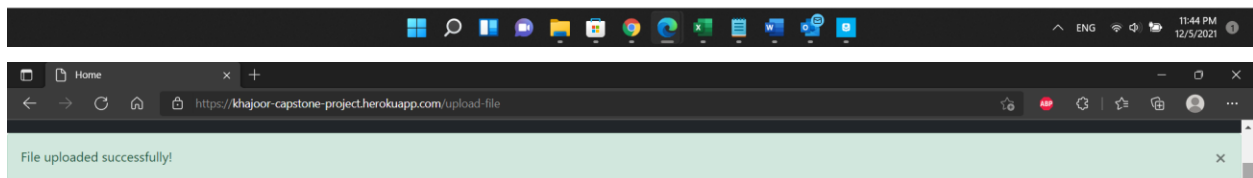
### Notes

- Note #1 ×
- Note#2 ×

Choose File No file chosen

upload

Add Note



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### Notes

- Note #1 ×
- Note#2 ×

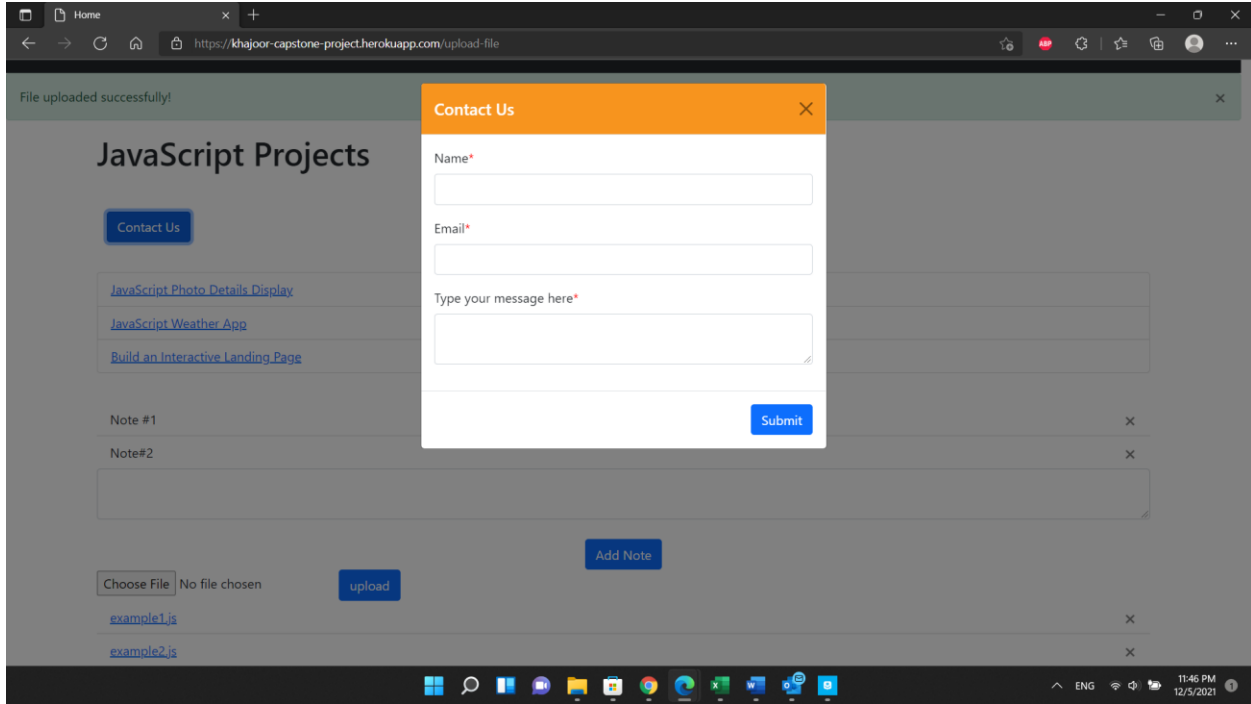
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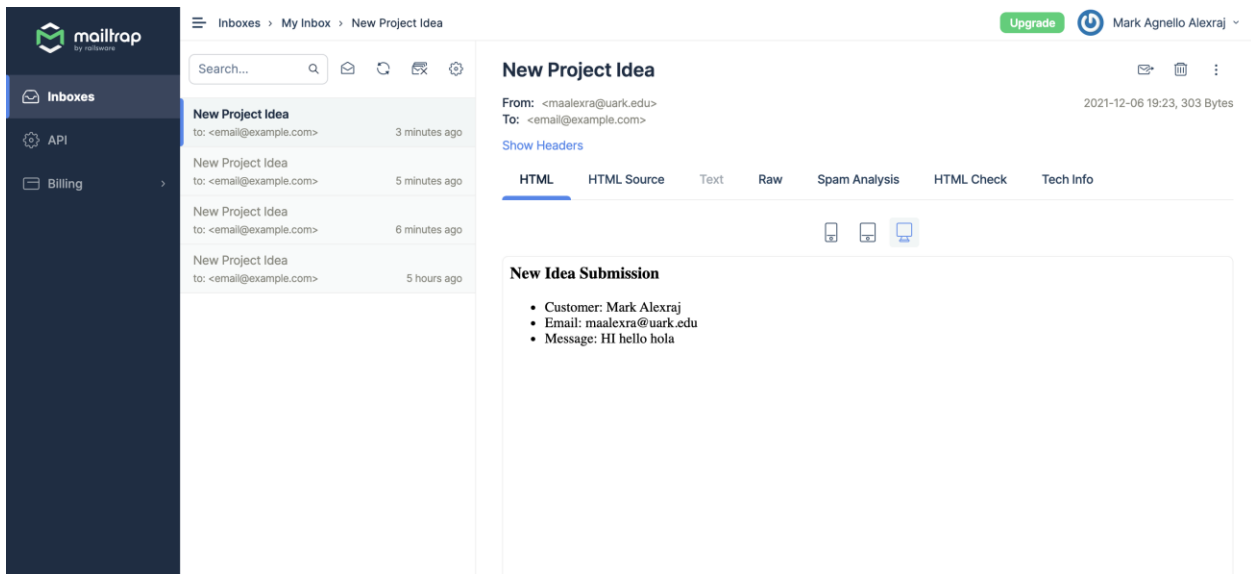
Add Note

- [example1.js](#) ×
- [example2.js](#) ×

Users are also able to upload their own files of specific type, depending on the type of challenges/projects. In this case the website only lets user upload only Javascript files. These files are also saved and are able to be accessed at any time after logging in in the future.



Users also have an option to communicate with developers using the Contact Us button. After filling all the fields an email is sent to developers. We used a specific host, username, password and port to ensure that the developers are protected against spam.



### 4.3 Risks

Risk	Risk Reduction
Uploading a website	Using Heroku cloud platform


#### 4.4 Deliverables

- Design Document: Heroku
- Database scheme and initial data: SQLAlchemy from flask
- Web site code: We are using HTML, Bootstrap 5 and JavaScript for the front-end. For the back-end we are using Python and flask
- Final Report

#### 5.0 Key Personnel

**Student name** – Jozef Dusenka, Mark Alexraj, Rafael Valadez Alvarado. All majoring in Computer Science at the University of Arkansas.

#### 6.0 Facilities and Equipment

Heroku cloud platform

#### 7.0 References

[https://www.youtube.com/watch?v=dam0GPOAvVI&t=19s&ab\\_channel=TechWitchTim](https://www.youtube.com/watch?v=dam0GPOAvVI&t=19s&ab_channel=TechWitchTim)

[https://www.youtube.com/watch?v=w25ea\\_I89iM&t=2258&ab\\_channel=TraversyMedia](https://www.youtube.com/watch?v=w25ea_I89iM&t=2258&ab_channel=TraversyMedia)

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