REVAMPING THE OSC WEBSITE AS A LEARNING EXPERIENCE USING FLASK

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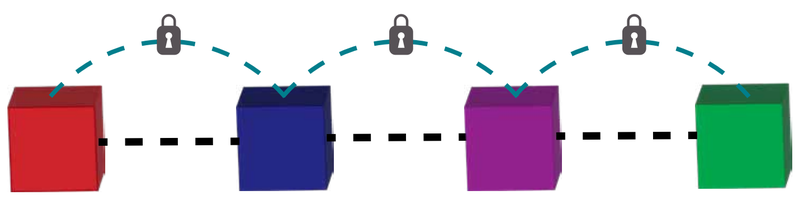
ABSTRACT

In a digital-first world, secure data sharing is a fundamental part of any project. Open Science Chain (OSC), an NSF funded project, is a consortium blockchain platform that allows researchers to access and update scientific datasets along with their metadata and verification information. OSC provides a user-friendly web-portal for easy data registration, and verification capabilities, along with client tools to access the platform, making the website an integral part of their project.

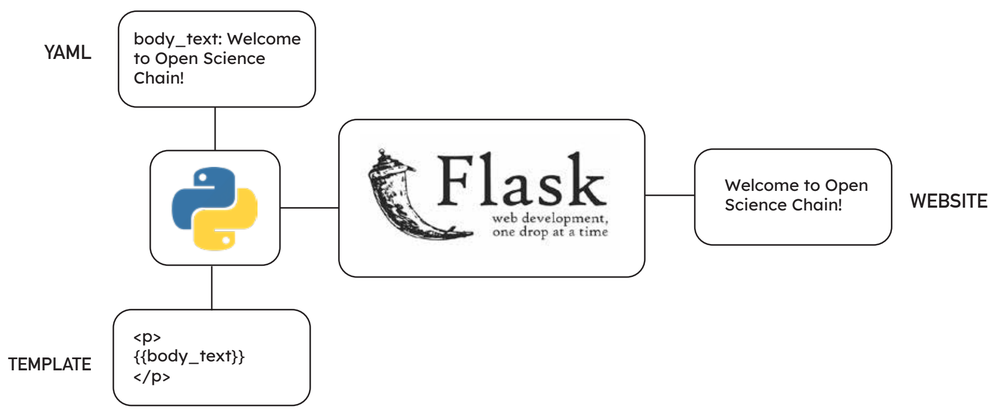
As part of my internship, I explored various ways to redesign the website and chose Flask as the templating engine. Flask allowed me to present a redesigned website addressing design, scalability and performance.



Blockchain: distributed ledger shared across computer nodes. Use of linked blocks allows transparant and secure data sharing.

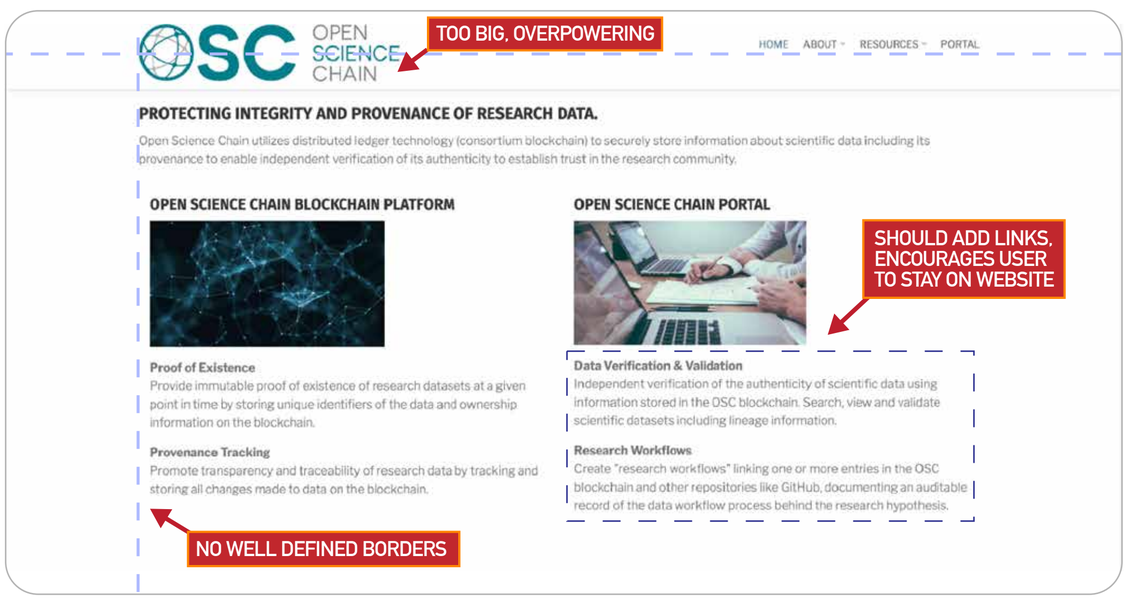
INTRODUCTION

Flask, a templating engine, is a software that enables the use of variables, expression, and logic in HTML code. This encourages the reuse of code, eliminating any redundant pieces. An HTML template file is made, with variables inserted, instead of hardcoded text. Flask replaces the placeholders in the template with data, and generates a HTML file.

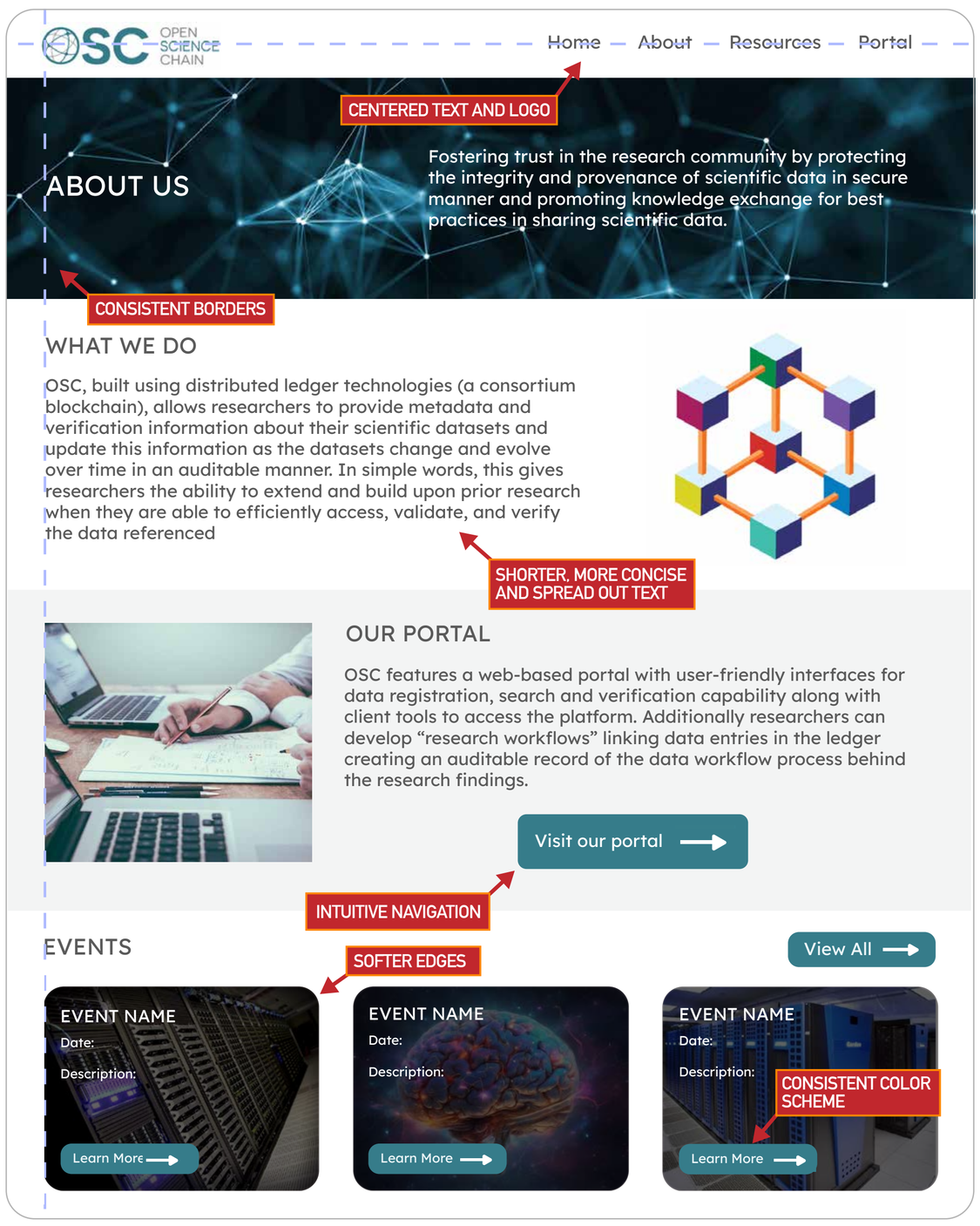


RESULTS

OLD DESIGN



UPDATED DESIGN



Design Focus Aspects:

1. Consistency: Made the website consistent through all the web-pages, improves usability, and imprints the brand's identity in the users' minds.
2. Intuitive navigation: Added several buttons throughout the website, with a responsive header, encourages the user to keep browsing the website.
3. Short Concise Text: Many users don't read, they skim. They should be able to get the main idea of your website after skimming the website.
4. Softer Edges: Creates a more pleasing and welcoming visual experience. Softens the UI/UX.
5. Simplicity: Reduces visual clutter, and increases focus on main content

```python
#go through all the YAML files and render the HTML file for them
@app.route("/<string:file_names>/")
def all_pages(file_names):
    more_data = {}

    if ("each_" + file_names in all_files_names):
        more_data = all_files_data["each_" + file_names]

    return render_template("general_page.html",
                           title=file_names.title() + " | Open Science Chain",
                           css_file_names=css_files_names,
                           data=all_files_data[file_names],
                           more_data=more_data)
```

Functionality Focus Aspects:

1. Static Web-Pages: Since the website wasn't going to be updated a lot, static web-pages, would be faster and more responsive since they don't require server-side processing.
2. Use of Flask: Use of variables, and loops eliminated redundant code. Flask automatically rendered a web-page for all the YAML files, making it super easy to add new pages, or delete old ones.

SUMMARY

Through these weeks, I explored Flask and it's capabilities. Flask allowed for the re-usability of code, and scalability of the website. Looking ahead, I would love to dive deeper into other templating engines, and also work on refining the images, and graphics. Additionally, I would like to focus more on the content of the website.

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