ADMI24 HACKATHON
ASSOCIATION OF COMPUTER SCIENCE DEPARTMENTS AT MINORITY INSTITUTIONS

Team Goals and Project Plan

SGX3
Extend. Expand. Exemplify.

Omnibond
Engineering • Trust • Identity
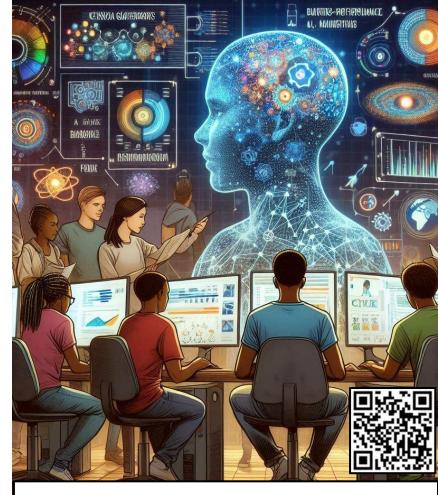
TACC
TEXAS ADVANCED COMPUTING CENTER

HackHPC
Hackathons and Codeathons

https://hackhpc.github.io/sgx3admi24

Team Name: Data Detectives

- Team Mentor(s): Reggie Kelley

- Team Members: Jean-Dominique Anoh, Paris Coleman, Dickson Acheampong, Jace Lespinasse

- Team Theme Song Name: (FREE FOR PROFIT) Erykah Badu x Jazz x Neo Soul Type Beat - "SPRING"

Link to the theme song:
https://www.youtube.com/watch?v=Jmzk_QqnC3A

Goals

Target Science Gateway: HPC-ED Metadata

Issue to be addressed: HPC-ED wants to create a database to ensure an easier learning environment for HPC (problem 3)

Project Goal(s):

1. Create flask app to digest information off websites

2. Develop means to transfer information from sites to the app

3. Transfer information from app to database

Potential Pitfalls/Bottlenecks: Learning/understanding python coding for data

Project Plan

Deliverables

Github Lead: Jace Lespinasse

Presentation Lead: Jean Anoh

Poster Lead: Paris Coleman

Code Lead: Dickson Acheampong

Project Plan

Goal 1: Create flask database to digest information off websites
- Task 1: Make new project in Eureka/Jupiter
- Task 2: Develop flask app
- Task 3: Identify which websites to use

Goal 2: Develop means to transfer information from sites to the app
- Task 1: Develop HTML file to connect to websites
- Task 2: Add validation to ensure data quality
- Task 3: Establish the form submission endpoint

Goal 3: Transfer information from app to HPC-ED database
- Task 1: Ensure the data is easily user readable
- Task 2: Handle and store incoming form data
- Task 3: Transmit stored data to the HPC portal

Team Name: Pandora's Programmers

- Team Mentor(s): Charlie

- Team Members: LeahMonet Morgan, Catalina Tovar, Chris Henry, Jesutofarati Ajala

- Team Theme Song Name: Greek Mythology Music - Pandora's Box

Link to the theme song:
https://youtu.be/s4nt8M85pyE?si=7tXLEFQDYB-vhohD

https://hackhpc.github.io/sgx3admi24

Goals

Target Science Gateway: HPC-ED

Issue to be addressed: Choice 3

Project Goal(s):

1. Set Up Flask Project

2. Create the Data Entry Form

3. Use flask to create a webform to store the websites and push them to the HPC-ED website

Potential Pitfalls/Bottlenecks: A lot of our strengths and weaknesses are similar as a group.

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Project Plan

Deliverables

Github Lead: Christian Henry

Presentation Lead: LeahMonet Morgan

Poster Lead: Catalina Tovar

Code Lead: Jesutofarati Ajala

Project Plan

Goal 1: Set up flask project
- Task 1- Create project directory
- Task 2- Initialize flask application
- Task 3- Configure routes

Goal 2: Create data entry form
- Task 1- Design HTML form
- Task 2- Style the form
- Task 3- Implement checks to insure data meets criteria

Goal 3: Store and push data to HPC-ED website
- Task 1- Set up form submission route
- Task 2- Process and store form data
- Task 3- Push data to HPC-ED website

root@hack2024:~/NLC^2 $ cat Team_Name.txt

root@hack2024:~/NLC^2 $ ls Team_Mentors

'Teniola Oluwaseyitan'

root@hack2024:~/NLC^2 $ ls Team_Members

'Chandler Campbell'   'Christian Johnson'   'Lisha Ramon'   'Nole Stites'

root@hack2024:~/NLC^2 $ cat Team_Theme_Song.mp3

'https://uppbeat.io/Melifluous-Mirage'

File   Edit   View   Search   Terminal   Help

root@hack2024:~/NLC^2 $ cat Project_Problem

Many institutions don't have an easy way to categorize or present their training resources. Currently, HPC-ED utilizes a command-line interface (CLI) to add training material to and query data from a database which is not at all user friendly or intuitive. Many people don't know how to use a CLI, so they don't get the opportunity to use the institution's training resources.

Furthermore, most people go to Google for their needs which isn't the best way to search. A given Google query might return thousands of results, making it hard to know which ones are worth looking at because the quality of sources vary.

:wq

root@hack2024:~/NLC^2 $ cat HPC-ED_Gateway

Our Targeted Science Gateway is the HPC-ED Gateway. HPC-ED (High-Performance

Computing - Education) is a project to create and share metadata for HPC educational

materials, making it easier to discover, access, and publish these resources through a

federated catalog system.

:wq

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root@hack2024:~/NLC^2 $ cat Project_Goals

1. Create a user-friendly website template for institutions to store and query training

   resources that don't use a CLI

2. Connect a database to the website that stores the training resources and supports the

   CRUD operations

3. Allow a user to download a JSON file for a given training resource returned from a search

   query

:wq

root@hack2024:~/NLC^2 $ cat Potential_Pitfalls_and_Bottlenecks

1. <u>Time</u>: only having a week to complete our desired goals can cause stress and anxiety

2. <u>Gold plating</u>: getting too distracted by the finer details at the beginning can prohibit
    us from getting important work done

3. <u>Test data</u>: getting enough data to test the corner and edge cases might be difficult

:wq

```
SG3X|SGCI@linux-desktop: /tmp/tutorial

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root@hack2024:~/NLC^2 $ cat Project_Plan_Delivery

Deliverables

Github Lead:  Nole Stites

Presentation Lead: Christian Johnson

Poster Lead: Lisha Ramon

Code Lead: Chandler Campbell




:wq
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root@hack2024:~/NLC^2 $ cat Project_Breakdown_Website

Website Pages:

- Home: Initial presentation, connects other pages via links

   ○ Guides how to utilize template

- Search: User will query the database. May have the option of applying filters for specific results.

- Admin: Accessed by persons with privileges to perform CRUD [Create Read Update Delete] operations on database material.

- About: Provides info about the vision of the mission to achieve

:wq

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root@hack2024:~/NLC^2 $ cat Project_Breakdown_Database

Database:

- Utilize Global Search API: Stores all data, set privileges on data visibility, as well as retrieve data through search queries.

- Rather than creating a DB, utilize a resource that provides one for us(HPC-ED API)

- (For group) Read up on Github's documentation for open community:

    ○ github.com/readthedocs/readthedocs.org

    ○ readthedocs.org

    ○ docs.globus.org/api/search/

:wq

File   Edit   View   Search   Terminal   Help

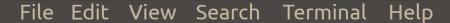root@hack2024:~/NLC^2 $ cat Project_Breakdown_Backend_Code

Backend Code:

- Bridges between the database (DB) and frontend website

- User submits a search query to backend code -> Accesses DB via API

- DB returns query results to backend code -> Displays back on website via API return

:wq

File   Edit   View   Search   Terminal   Help

root@hack2024:~/NLC^2 $ cat Project_Ideas

- Relevant and meaningful search results

  ○ Generate summaries of data and order results in a meaningful priority

- Smart/predefined search features

  ○   Show results published from a user's institution or about their area of expertise

- Dynamically generated list of search filters

  ○ Create filter options based on the metadata in the database entries

- Google authentication to allow for admin users and standard users

  ○ Restrict admin actions like adding/removing database entries to specific users.

- Suggest resources to add to the database

  ○   AI resource suggestions based on a given text

:wq

Team Name

- Team Mentor(s)
- Team Members

- Team Theme Song Name
  Link to the theme song

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