

Progress Report

Puerto Rico NASA Space Grant / PR NASA EPSCoR

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Title of the project: Performance & Value Calculator Development

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Summary:

This calculator tool was built in Dataiku and then shifted to Visual Studio Code (VS Code) for incorporation into the Aerosciences Evaluation and Test Capabilities (AETC) website. The integration enables users to conduct data visualization tests that do not have performance or value factor constraints peculiar to National Wind Tunnel facilities.

During development, the following activities were undertaken:

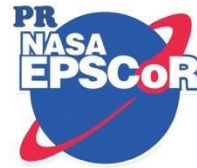
Initial Development: In order to visualize formulas as well as insert parameters like weight, old total facility score, new total facility score and attribute type (performance or value), this tool was first developed and tested in Dataiku using Excel.

GUI Design: Many GUI designs were created using Excalidraw with the final design being chosen based on user-friendly approach along with selection, dropdown, insertion, data/graph visualization parameters.

Optimization in Dataiku: The chosen GUI design was implemented and optimized within Dataiku. The platform capabilities allow it to run code in real-time as well as visualize GUIs.

Transition to VS Code: The optimized tool was moved to VS Code where adjustments were made for compatibility reasons. GitLab Workflow was included so as enhance collaboration and code management among project collaborators.

Finalization: Final reviews of the GUI design and performance were conducted, with the tool ready for deployment on the AETC website.



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Activities carried out:

Orientation and Onboarding:

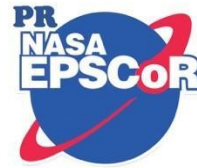
Traveled to NASA Glenn Research Center to receive orientation, onboarding, and initial work process instructions.

AETC Retreat Participation:

Attended the AETC retreat at UPR-Mayaguez, where I participated in work meetings and an information session regarding internships for students.

Development and Integration:

Calculator tool was developed within Dataiku and later transferred to Visual Studio Code (VS Code) to enhance accessibility on the Aerosciences Evaluation and Test Capabilities (AETC) website. Excel was used to practice visualizing formulas and inserting key values such as weight, old and new total facility scores, attribute types, and their respective scores. The graphical user interface (GUI) was designed and optimized using Excalidraw and Dataiku, ensuring compliance with parameters for selection, dropdowns, insertion, and data/graph visualization. The developed code was modified to meet VS Code compatibility requirements, and a GitLab Workflow was integrated to enhance collaboration and code management. Finally, the GUI design was reviewed and finalized in preparation for publication on the AETC website.



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Task completed:

Development of Calculator Tool:

Developed a calculator tool within Dataiku, enabling data visualization testing for National Wind Tunnel facilities. Transferred the tool to Visual Studio Code (VS Code) to ensure it could be accessed via the Aerosciences Evaluation and Test Capabilities (AETC) website.

Formula Visualization and GUI Design:

Utilized Excel to practice and visualize key formulas, including weight, old and new total facility scores, and attribute types. Designed and iterated on various GUI layouts in Excalidraw, selecting the most user-friendly design that met all specified requirements.

Code Development and Optimization:

Implemented the finalized GUI design into Dataiku, where code development and optimization were carried out. Ensured automatic GUI visualization and optimization within Dataiku's platform.

VS Code Integration:

Modified the developed code for compatibility with VS Code and integrated GitLab Workflow to facilitate collaboration among project collaborators.

Finalization of GUI Design:

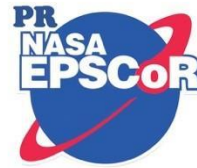
Completed final reviews and adjustments to the GUI design, ensuring it met performance and design specifications for deployment on the AETC website.

Orientation and Onboarding:

Completed orientation and onboarding at NASA Glenn Research Center, gaining essential knowledge and insights for the project.

Participation in AETC Retreat:

Successfully participated in work meetings and an internship info session during the AETC retreat at UPR-Mayaguez.



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Milestones reached:

Development of Calculator Tool in Dataiku:

The initial development of the calculator tool within Dataiku was completed, marking a major milestone towards enabling data visualization for National Wind Tunnel facilities.

Successful Transfer to Visual Studio Code (VS Code):

The calculator tool was successfully transferred from Dataiku to Visual Studio Code (VS Code), ensuring it could be accessed on the Aerosciences Evaluation and Test Capabilities (AETC) website.

Completion of Formula Visualization and GUI Design:

Key formulas were successfully visualized in Excel, and the most user-friendly GUI design was finalized using Excalidraw.

Optimization of GUI in Dataiku:

The finalized GUI design was implemented and optimized within Dataiku, meeting the project's functionality and user experience requirements.

Integration of GitLab Workflow:

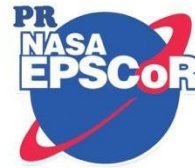
GitLab Workflow was integrated into the project, facilitating enhanced collaboration and efficient code management among project collaborators.

Finalization of GUI for AETC Website Deployment:

Final reviews and adjustments to the GUI design were completed, preparing the tool for its upcoming deployment on the AETC website.

Orientation and Onboarding at NASA Glenn Research Center:

Successfully completed orientation and onboarding, gaining critical knowledge for contributing effectively to the project.



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Participation in AETC Retreat at UPR-Mayaguez:

Actively participated in key work meetings and an internship info session, further integrating into the AETC project and community.

Results of project implementation

Enhanced Data Visualization Capabilities:

The calculator tool, developed and integrated into Visual Studio Code (VS Code), now provides enhanced data visualization capabilities for the National Wind Tunnel facilities. Users can efficiently test performance and value attributed directly through the Aerosciences Evaluation and Test Capabilities (AETC) website, without limitations.

Streamlined Formula Application and GUI Design:

The successful application of key formulas and the development of a user-friendly graphical user interface (GUI) have streamlined the process for users to input and analyze data. This has resulted in more accurate and accessible visualization of facility scores, weights, and attribute types.

Improved Collaboration and Code Management:

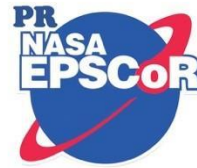
The integration of GitLab Workflow has significantly improved collaboration among project contributors. Efficient code management and version control ensure that all collaborators are aligned, reducing errors and increasing productivity.

Optimized Performance and User Experience:

The finalized GUI design, optimized in Dataiku and VS Code, has led to an improved user experience. The tool's performance on the AETC website is now robust, offering a seamless and efficient interface for data testing and visualization.

Successful Deployment on AETC Website:

The project culminated in the successful deployment of the calculator tool on the AETC website, making it readily available to users. This fulfills the project's objective of providing accessible data visualization resources for the National Wind Tunnel facilities.



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