Stephen Johnson
D424 -Capstone for Software Engineering
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Task 4

A. Deploy your full stack (mobile or web) software product to a cloud service provider of your choice.

1. To deploy the Data Center Management Dashboard, I used **GitHub Pages** with **Firebase** for authentication and real-time database services. This combination was selected due to the following reasons:

- **GitHub Pages**:
    - **Ease of Deployment**: GitHub Pages provides a straightforward and efficient way to host static websites directly from a GitHub repository. Since the application's front-end is primarily HTML, CSS, and JavaScript, GitHub Pages is an ideal choice.
    - **Free Hosting**: GitHub Pages offers free hosting for static sites, perfect for deploying the application's front end without incurring additional costs.
    - **Integration with GitHub**: The seamless integration with GitHub allows for easy version control and automated deployment through continuous integration, ensuring that the latest version of the application is always live.

- **Firebase**:
    - **Authentication**: Firebase Authentication is utilized to manage user logins, offering a secure and reliable method for handling user authentication without building and maintaining a custom authentication system.
    - Firebase Realtime Database provides a scalable and efficient backend for storing and retrieving data, such as task information and user roles. It supports real-time data synchronization, which is crucial for the dynamic nature of the application.
    - **Scalability and Security**: Firebase's infrastructure is designed to scale automatically, ensuring the application can handle increased traffic and data load as needed. It also provides robust security rules to protect data.

This combination allows for a lightweight, cost-effective, and easily maintainable deployment solution well-suited to the application's requirements.

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2. In this project, container images were not utilized for several reasons:

- **Simplicity of the Application**: The application uses static files for the front end, hosted on GitHub Pages, with Firebase handling the backend services. This architecture's simplicity does not necessitate containerization, which is typically employed for more complex, multi-service applications requiring isolated environments.

- **Cloud-Native Services**: Leveraging Firebase's managed services for authentication and database management eliminates the need for custom server environments (containers provided). Firebase automatically handles scaling, security, and maintenance, reducing container needs.

- **Cost and Complexity**: Containers introduce an additional layer of complexity regarding setup, management, and orchestration (e.g., using Kubernetes). For this project, which is efficiently served by static hosting and managed backend services, the benefits of using containers do not justify the additional overhead.

In summary, the decision not to use container images is based on the streamlined nature of the application, the benefits provided by the selected cloud services, and the goal of minimizing unnecessary complexity while maintaining robust performance and scalability.

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B. Export your project from GitLab as a compressed file, including the scripts created to automate deployment.

C. Provide a Panopto video recording that includes a demonstration of your software product deployment.

https://wgu.hosted.panopto.com/Panopto/Pages/Viewer.aspx?id=2be3ee0c-6132-4774-bf21-b1d4002b36ef#

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D. Acknowledge sources, using in-text citations and references, for content that is quoted, paraphrased, or summarized.

I did not use any outside sources.

E. Demonstrate professional communication in the content and presentation of your submission.

I demonstrated professional communication in the content and presentation of my project.