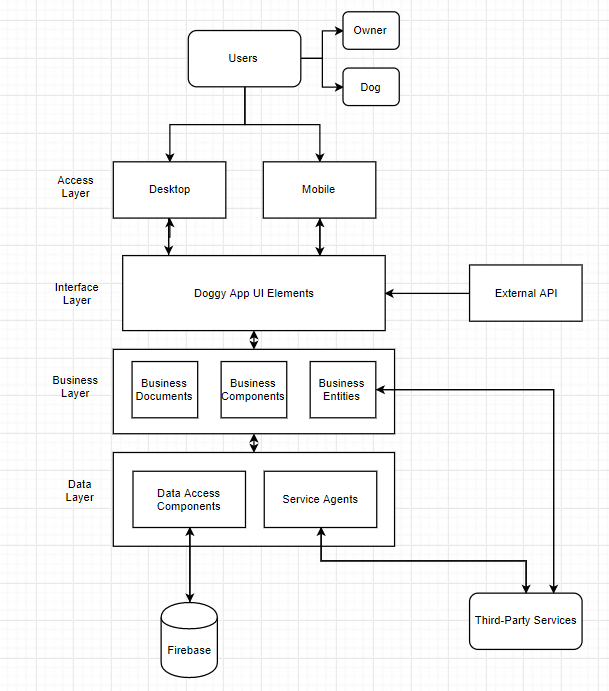
Architecture and Design Document

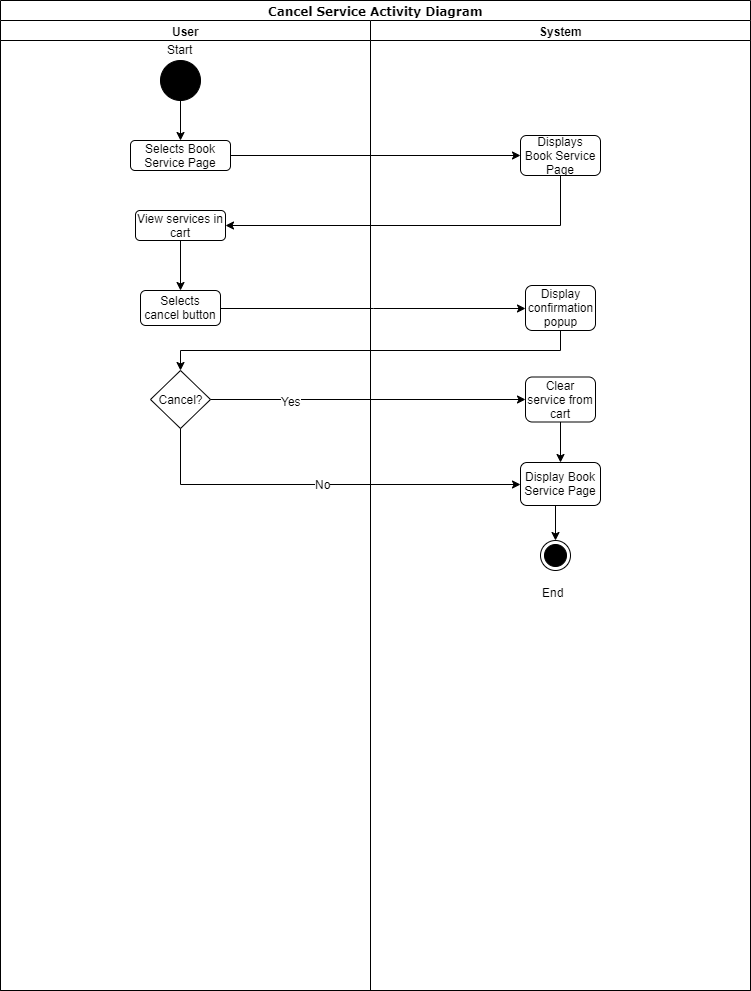
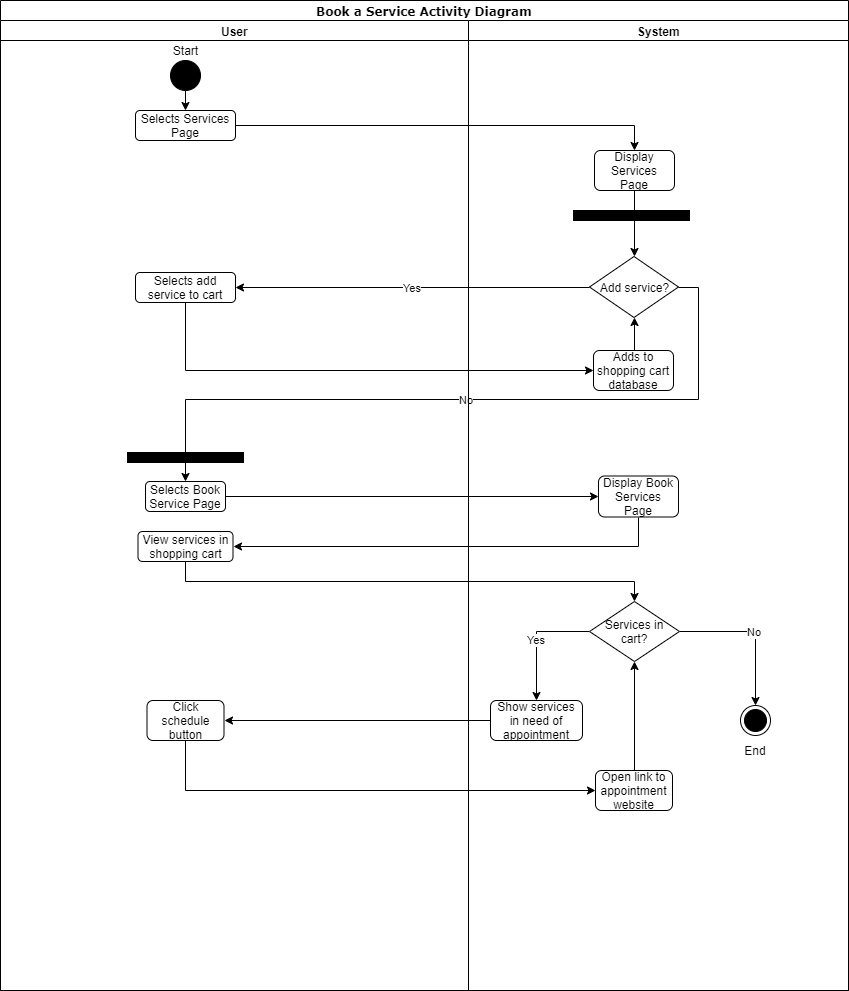
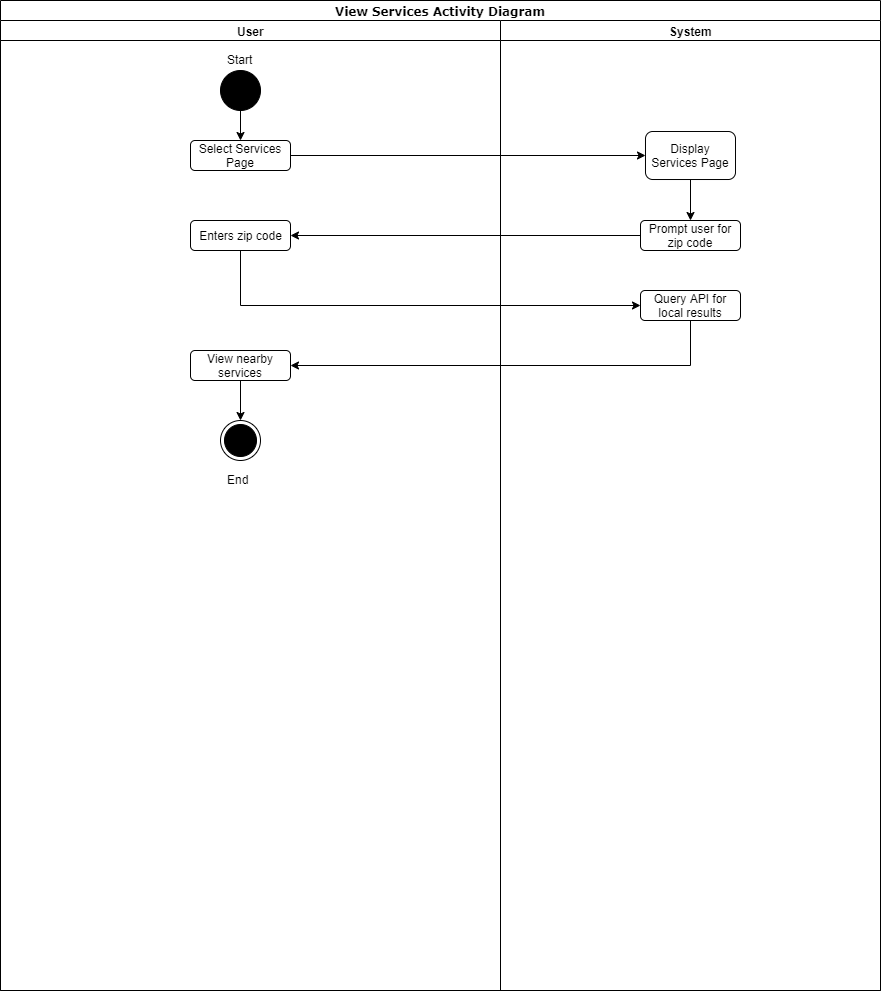
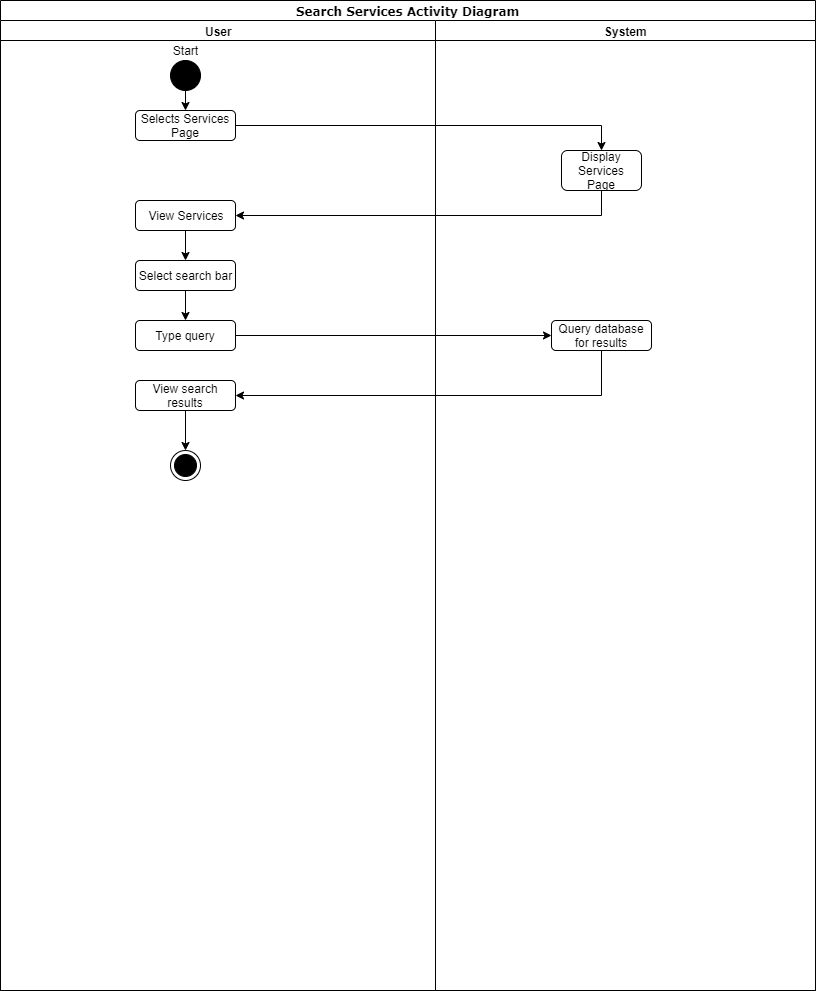
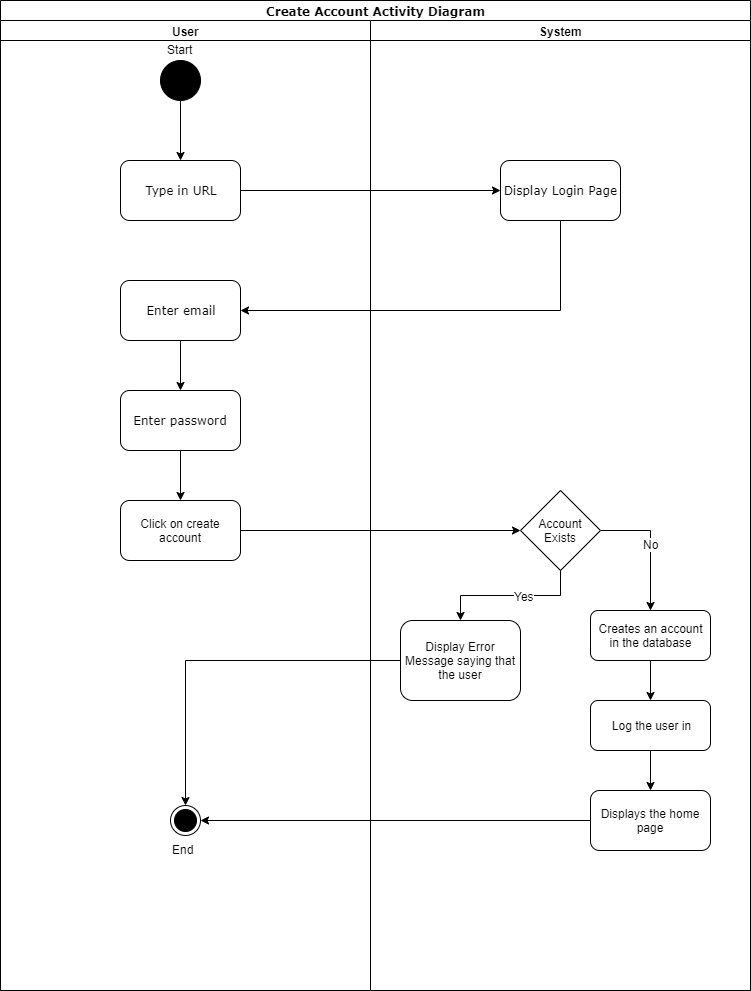
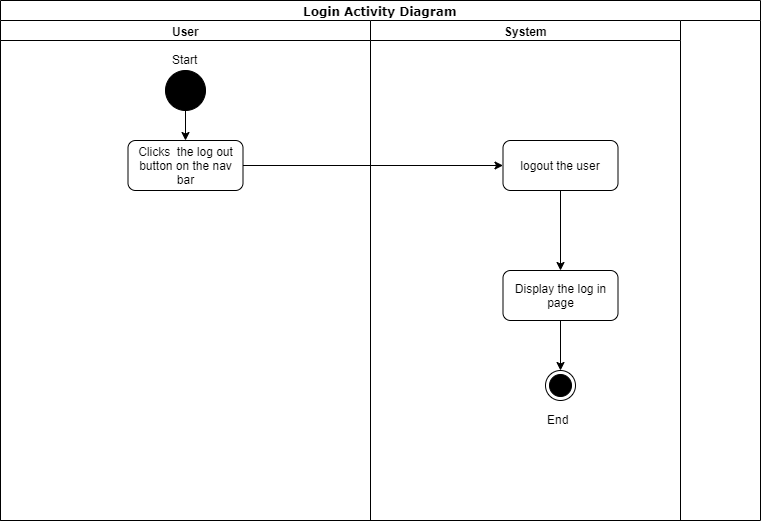
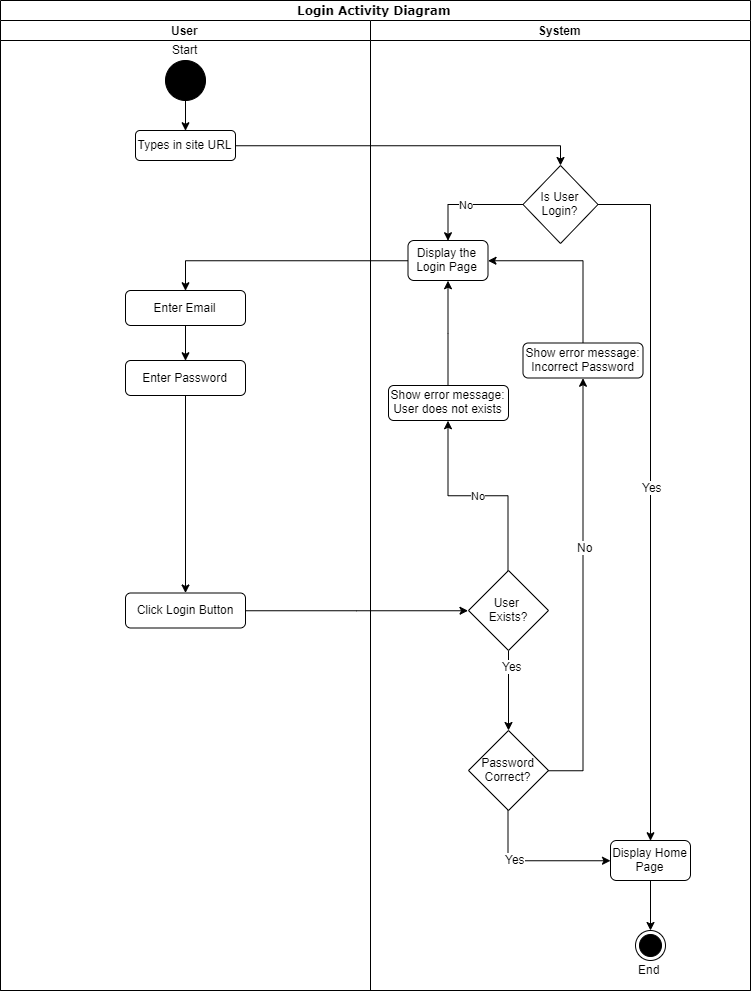
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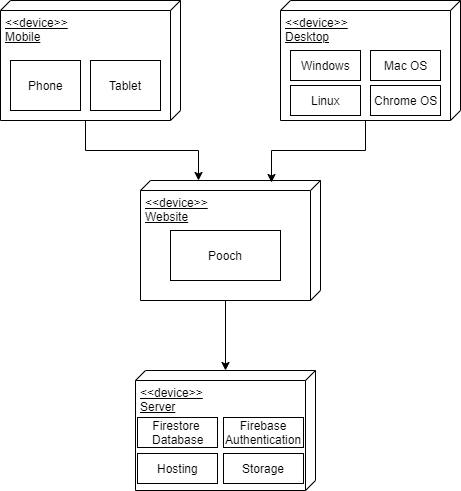
It illustrates how different aspects of the application are wired together.



1. Analysis Diagrams

Activity Diagrams

Data Flow Diagram



1. Object and Method Identification

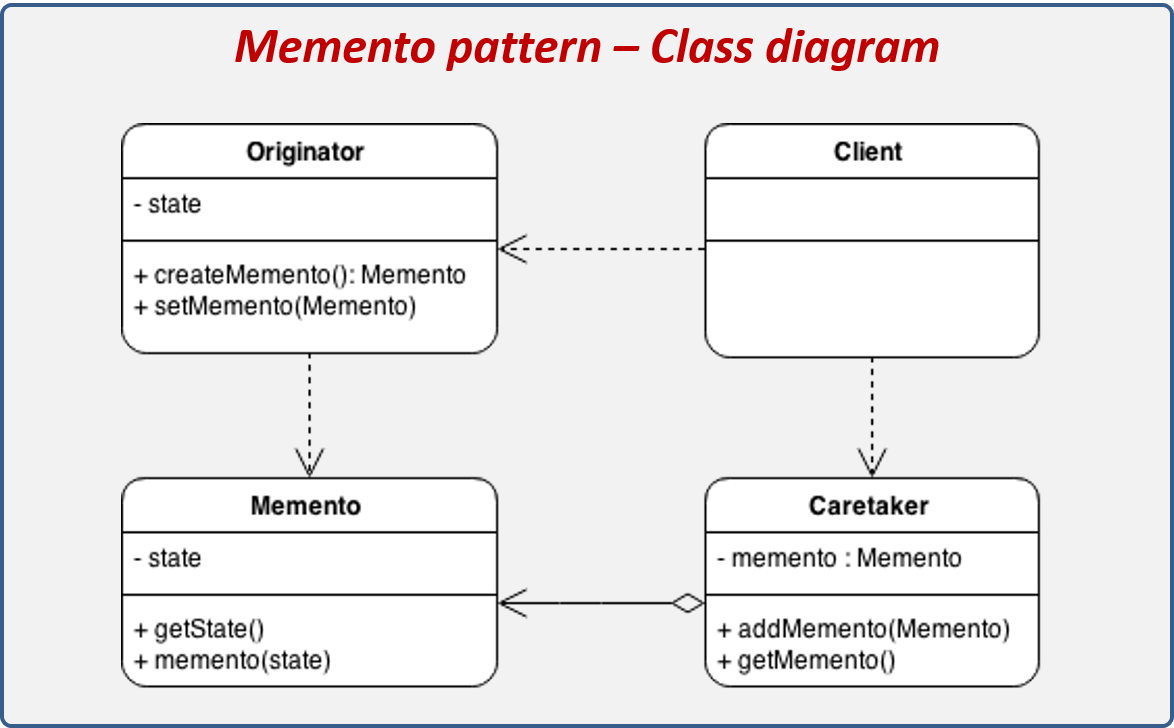
|  |  |
| --- | --- |
| Object: | Implementation: |
| User | Dog Owners, Dogs |
| Website | Pooch Web App |
| Database | Firebase |

|  |  |
| --- | --- |
| Method: | Implementation: |
| User Story #1 | Sign in with social media |
| User Story #2 | Sign in |
| User Story #3 | Sign up/Add profile |
| User Story #4 | Visit home page |
| User Story #5 | Logout |
| User Story #6 | Navigate through pages |
| User Story #7 | View services |
| User Story #8 | Search services |
| User Story #9 | Book services |
| User Story #10 | Cancel services |

1. Design Patterns

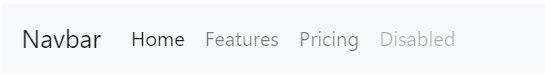
Memento:

Even after deleting important data, like the user profile, Pooch will continue to hold the information so that the user can restore their account at a later date



NavBar:

Common UI navigation feature which routes to different pages



Button:

A link hidden behind an image, which can match the overall theme of the application



1. Trade-off Analyses

|  |  |  |
| --- | --- | --- |
| Decision: | Benefit: | Cost: |
| Use Firebase for backend of the application | Hosting and authentication external to application. Less work for developers. Better security. | No control over hosting or ownership. Must trust Google to protect user data. |
| Create web app instead of android application (more work) or desktop application (less work) | Accessible from any device | Not accessible without the internet. May not be formatted correctly for all mobile devices. |
| Link to services instead of charging customers on services’ behalf | Increased scalability. Faster distribution. | Loss of potential profits by taking a cut of revenue directly |

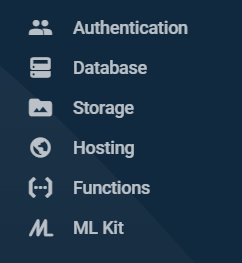
1. External Server Application

What is Firebase?



A realtime database and website hosting service, owned by Google, to simplify the backend for web developers. By using Firebase, developers can focus on the UI and application logic, without having to worry about implementing their own security or database rules.

Capabilities:

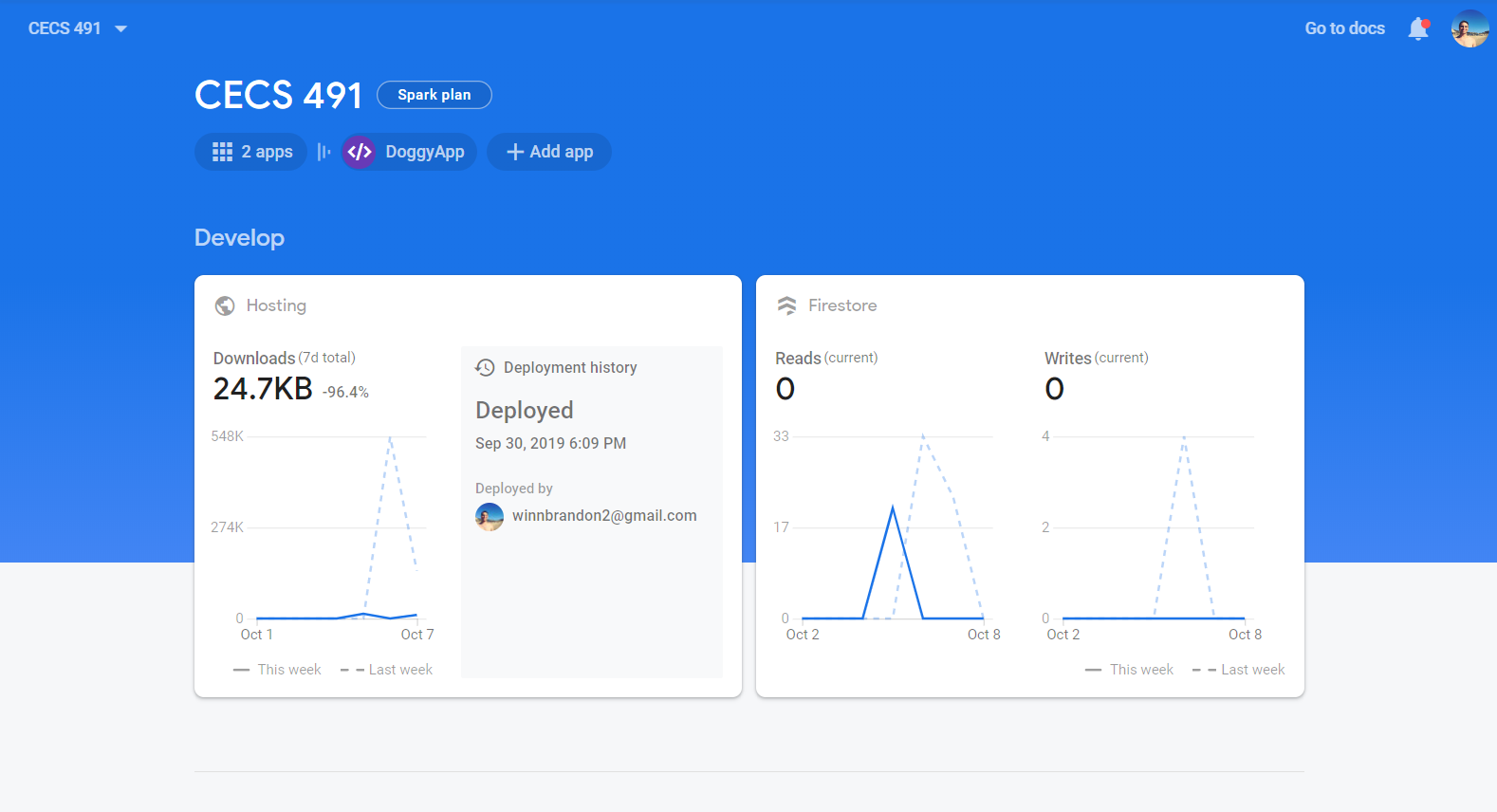


Firebase simplifies the login process by enabling developers to easily implement social media sign in functionality. The database aspect allows for the creation of collection, tables, and documents in a NoSQL server. The Firestore cloud storage access allows developers to store limited files in the cloud that are relevant for their application. This can entirely mitigate the need for users to download anything locally for the web app to run properly. Hosting by Firebase means developers of small applications do not have to pay for website hosting. The functions section will not be used for this application, but allows quick access to customizable Firebase cloud console functions. Finally, the machine learning kit grants developers access to many Google machine learning tools.

Architecture and Language:

Firebase utilizes a server-client architecture. Firebase runs on javascript and has SDKs available in Node.js, Java, Python and Go.

Interface Design:



The interface of Firebase allows tight integration between the users’ data, the developers application, and other Google services.