

SER517 Fall2023 Team2 – System Implementation Feasibility Study

Understanding requirements.....	2
Plausible user roles:	2
Users - Key points:.....	2
Proposed Software Architecture.....	3
Advantages:.....	3
Disadvantages:	3
GitHub Architecture Change.	4
GitHub Organization.....	4
github.com/ser517-fall2023-team2	4
Azure Prototype Deployment	5
Reservations about HostGator:.....	6
Disclaimer.....	7

Understanding requirements.

- The client is currently using a WordPress website with HostGator as host.
- From the project description the primary objective of the application is to market the client's business - run email campaigns, publish blogs, etc.
- Based on the meeting with client on 11-Sep-2023, the current traffic on the website is not very high (1-3 users per day).

Plausible user roles:

User Role	Interactions
Admin (client)	Publish blogs. Run email campaigns. Share blogs to social media.
Unsubscribed User	Access public blogs. Interact with chatbot. Access client's social media links.
Subscribed User	<All functionalities of Unsubscribed user> Access subscriber-only blogs.

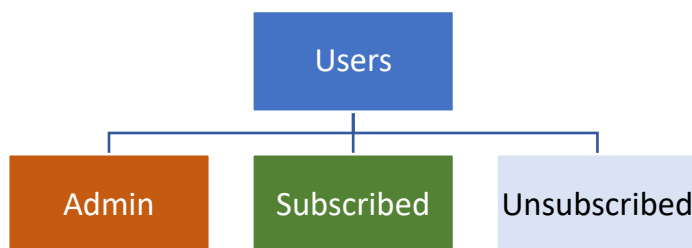


Figure 1: User Roles

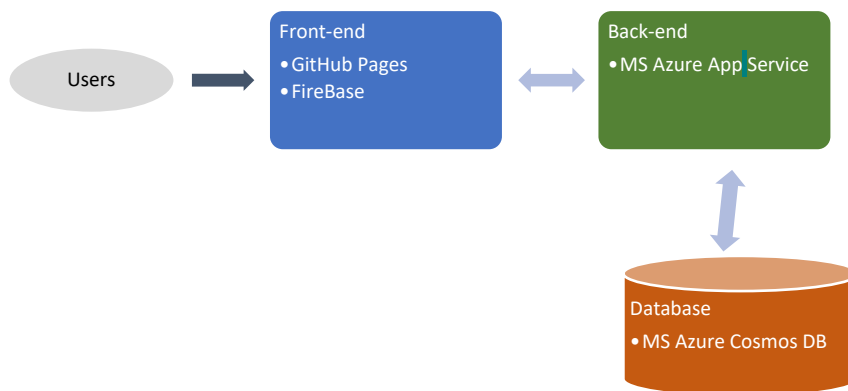
Users - Key points:

Software needs interfaces for the above user roles.

1. A dashboard with integration to do automation with HubSpot might be needed.
2. Business logic to manage 'subscribed' and 'unsubscribed' content.
3. A database to store blogs and manage users.

Proposed Software Architecture

- Instead of deploying a single monolithic application, we would recommend moving towards micro-services like architecture - splitting front-end and back-end.
- The two components can be deployed on discrete servers.



Advantages:

- Microservices-like architecture. Only the required server needs to be scaled.
- Supports CI/CD pipeline (Continuous Integration/ Continuous Deployment).
- Less coupling. If the client decides to overhaul the application's UI in the future, the development work would be easier for the UI/UX team.
- Team members based on their expertise can create split the work to produce high quality software.
- Based on the client's budget and requirements two different hosting services can be used.

Disadvantages:

- Changes must be made in ASU Canvas submitted URLs.

GitHub Architecture Change.

- Currently source code is deployed on a GitHub personal account.
- GitHub personal accounts only allow 1 admin user.
- GitHub organization is a good alternative.

GitHub Organization

- Very similar to a GitHub personal account.
- Multiple users/collaborators can be assigned as admins.
 - This can help individual users configure GitHub pages and GitHub Actions to configure CI/CD pipelines.
- Supports multiple repositories (repo).
 - Repo for front-end and back-end can be stored under same organization.
 - GitHub Actions can be configured to run when an event happens on individual repo - segregation of front and backend teams.
 - Easier for Grader and Professor to evaluate the progress of each team member.

github.com/ser517-fall2023-team2

I have created GitHub organization in the following organization to facilitate the transition.

Following repositories has been created:

1. Backend
<https://github.com/SER517-Fall2023-Team2/backend>
2. Frontend
<https://github.com/SER517-Fall2023-Team2/frontend>

Other Repositories:

1. Prototype for Sprint 1 deployed in Azure.
<https://github.com/SER517-Fall2023-Team2/prototype-sprint1>

Note:

The visibility is currently set to 'Public' as no team member is part of it. Once finalized it can be changed to 'private'.

Azure Prototype Deployment

A prototype on the from the repo [Sprint1 Prototype](#) has been deployed on Microsoft Azure. It can be viewed using the following URL.

<https://ser517-fall2023-team2.azurewebsites.net/>

Note:

The Azure server cold-start time could take up to 7 minutes. Please reload the page if it is not loaded.

Reservations about HostGator:

1. Based on my [research](#) in order to host a React server on HostGator the client may have to purchase additional services (starting \$23.95 per month). The client's existing software may be limited to hosting.
2. Could not find much documentation about integrating CI/CD pipelines to GitHub actions.

Disclaimer

I have tried my best to thoroughly research all aspects, however, there could additional factors that I missed. Services were selected based on their current pricing. It is necessary to keep in mind that there could be changes in the pricing of these services.