Server host options and limits

1. **Heroku**: Heroku offers a platform as a service (PaaS) solution that supports hosting for javascript code projects and PostgreSQL databases. It's straightforward to deploy and manage, and it offers a free tier with certain limitations.
    - Limited Dyno Hours: The free tier provides a limited number of dyno hours per month. Dynos are containers that run your application. Once you exceed the free tier limits, your application may experience downtime until the next month or you upgrade to a paid plan.

    - Sleeping Dynos: Applications on the free tier may have dynos that go to sleep after a period of inactivity. When a dyno sleeps, it takes time to wake up when accessed, causing increased response times for users initially.

    - Limited Database Resources: The free tier databases on Heroku have limited resources, including storage space, connections, and performance. As your application grows and your database usage increases, you may need to upgrade to a paid plan for better performance and additional resources.

    - Usage Limits: Heroku imposes certain limits on the free tier, such as the number of concurrent connections, request processing time, and data transfer. Exceeding these limits can lead to degraded performance or temporary suspension of your application.

    - No Custom Domain: The free tier does not allow you to use a custom domain for your application. You'll have to use a subdomain provided by Heroku (e.g., yourapp.herokuapp.com) unless you upgrade to a paid plan.

2. **AWS (Amazon Web Services)**: AWS provides a range of services suitable for hosting web applications and databases. We can use AWS Elastic Beanstalk for hosting the map/navigation application and Amazon RDS (Relational Database Service) for PostgreSQL as your database solution. AWS offers a free tier for new users for both services.
    - Limited Time: The Free Tier is available for new AWS customers for 12 months following their AWS sign-up date. After the 12-month introductory period, standard rates apply.

    - Usage Limits: AWS Free Tier services are subject to usage limits, which vary depending on the service. These limits include compute, storage, and data transfer resources. If you exceed these limits, standard rates will apply for the additional usage.

    - Resource Restrictions: Certain services in the Free Tier have limited capabilities compared to their standard counterparts. For example, Amazon RDS (Relational Database Service) in the Free Tier has restrictions on instance types, storage, and database engine options.

3. **Firebase**: Firebase by Google offers a comprehensive backend infrastructure for mobile and web applications. It provides real-time database solutions and authentication services, which could be suitable for the application running on mobile devices. Firebase has a free tier with certain usage limits.

- Storage: Firestore, Firebase's newer database offering, provides 1GB of storage in the free tier.

- Simultaneous Connections: Firestore also has a limit on the number of simultaneous connections, but like the Realtime Database, it's generally high enough for small applications.

- Authentication: Firebase Authentication provides a generous quota for the number of monthly active users (MAUs) for free. However, there may be additional costs if you exceed certain thresholds or if you use certain features like phone authentication.

- Hosting: Firebase Hosting allows you to host your web assets, including HTML, CSS, JavaScript, and other static content. There are limits on bandwidth and storage, but these are generally sufficient for small applications with low to moderate traffic.

- Firebase is closely integrated with Google Cloud Platform (GCP), so using more than one in conjunction may cause overages (we are using the google maps API which may

4. **DigitalOcean**: DigitalOcean provides cloud infrastructure services including virtual private servers (droplets) where we can deploy our application and database. DigitalOcean offers competitive pricing and straightforward setup processes.
  - Not free.