Campstone Project

Nanodegree 9990 - Cloud developer.

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Jorgefernandez3000@gmail.com

Overview - Domain Background

In my free time I'm part of a triathlon team. This team is very humble and is composed of neighbors and friends.

In this domain I intend to generate a dynamic web page, with private and public areas. To be a little more specific, this web page will offer several services like, pictures of competitions, races calendars, training plannings, federation news, etc..

Problem Statement and Goals

It is not a secret that hosting a web page of this characteristic is not free. But thanks to the advantages that Cloud services offer, it could be a good approach to use it. In this case AWS is the chosen one.

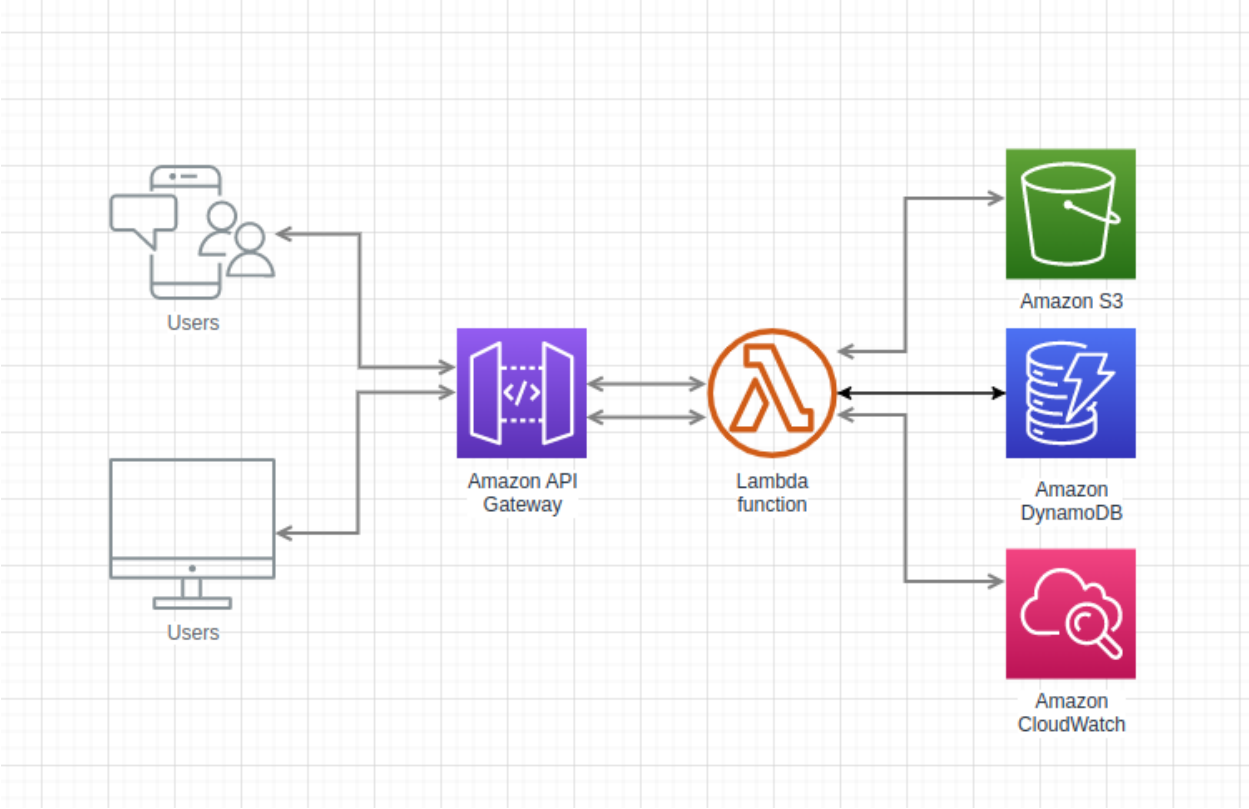
Topics to be in consideration:

- Billing
- Development time
- Maintainability

Architecture proposal

Step 1. First iteration of architecture

As a first milestone, I want to deploy the static content in buckets, use lambda functions with flask as apis and a dynamoDB as backend.



Step 2. Iteration adding security

Second milestone is to implement a private area, in which each user can have several options. I have yet to land on some details of the functionality I intend to provide, but I am thinking of providing the following options.

- Pictures of different competitions.
- Internal messaging with other users.
- Create a training plan (for sprint, olympic, half, and full ironman distances)
- Possibility of planning a meet in the calendar to train in a group.

- Integrate the training plan with Strava, Training peak, garmin connect, goldencheetah, and other.
- etc.

Technical scopes

To improve the code development I'm going to use the next technologies.

Front-end

Front will be coded in html5 responsive, with help of php. In the future I'll incorporate vue, angular or some technologies which adjust at project needs. (to evaluate)

Deployed in S3 buckets.

Back-end

DynamoDB as database, and lambdas as API rest. Coded with python.

CI/CD

Jenkins is the best option to accomplish this task. I will develop a pipeline integrating docker, in each stage to do tests, build and deploy the code.

Branch model

Github, using the git-flow model. (At the beginning I think I'll work directly on the main branch, because I'm the only person in this project, but I hope it might change.)

Future and roadmap

In other iterations, I will intend to apply some ML method to detect, and improve the trainings, give recommendations, or anything that can help the user.