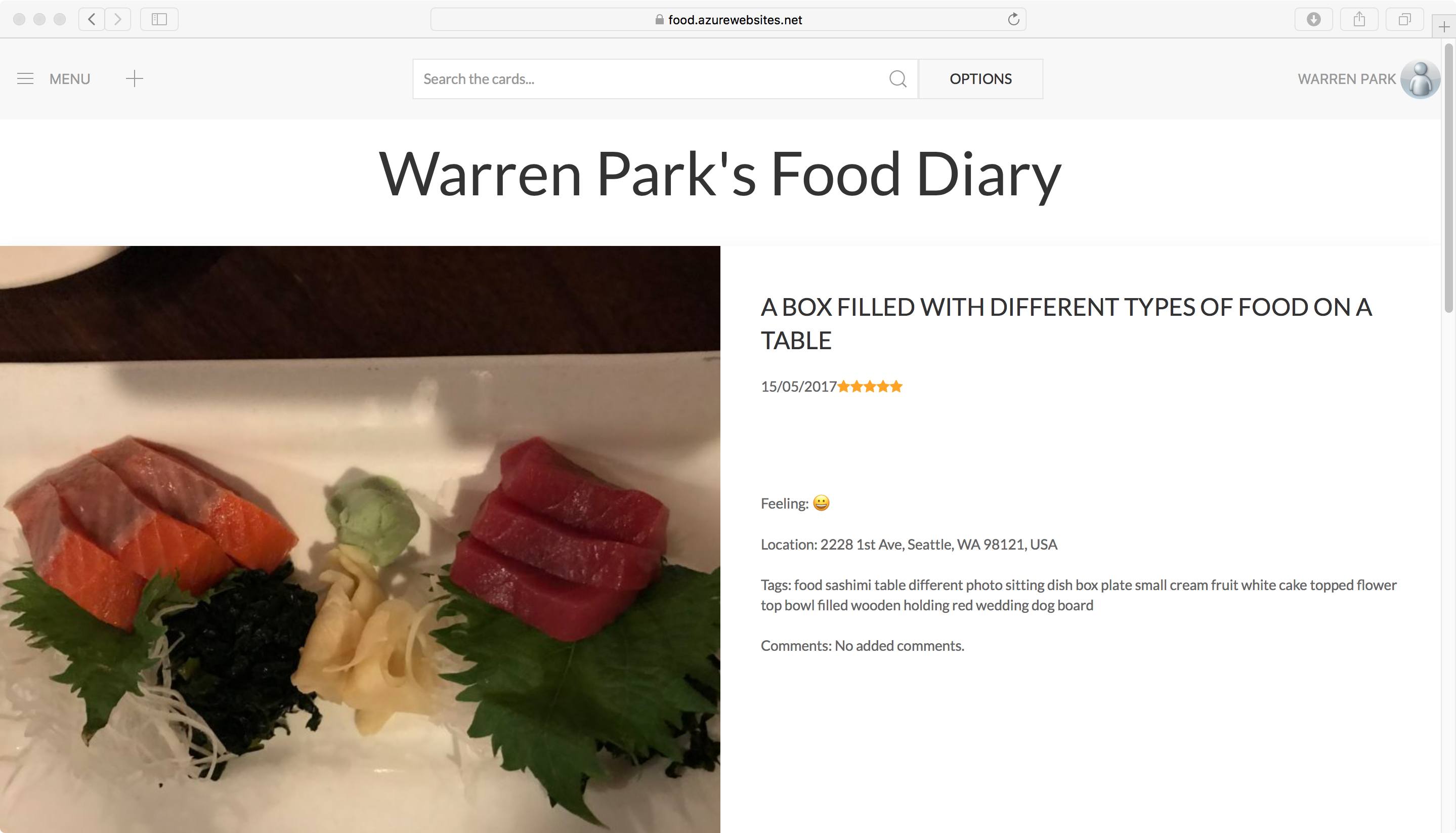
Food Diary web app powered by Microsoft Cognitive services

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I am a first-year student at UCL studying computer science. As part of the course, I was being assigned to a team and had to develop an application for Microsoft.

The title of the project was “Microsoft Cognitive Node.js app with cloud storage support”, and I was the team leader. After having a meeting with the client (Anze Vodovnik from Microsoft), me and my team members have decided to make a food diary web app for people who need to record the food that they have eaten on a day due to their allergies, or for people who are interested in recording the foods that they have eaten daily.

My team has got many ideas for the application, and decided to develop a web app that retrieves a food image and a face image pair from cloud storage providers (OneDrive, Google Drive and Dropbox), analyses the image by using Microsoft Vision API (for generating tags and food title) and Face API (for determining the feeling in the face to determine the degree of satisfaction about the food), and then shows the analysis result on the web app in the form of card like below:

1 An example card generated by the web app.

I was responsible for dealing with the Vision API and Face API. Therefore, I firstly started from reading documentation from the Microsoft website.

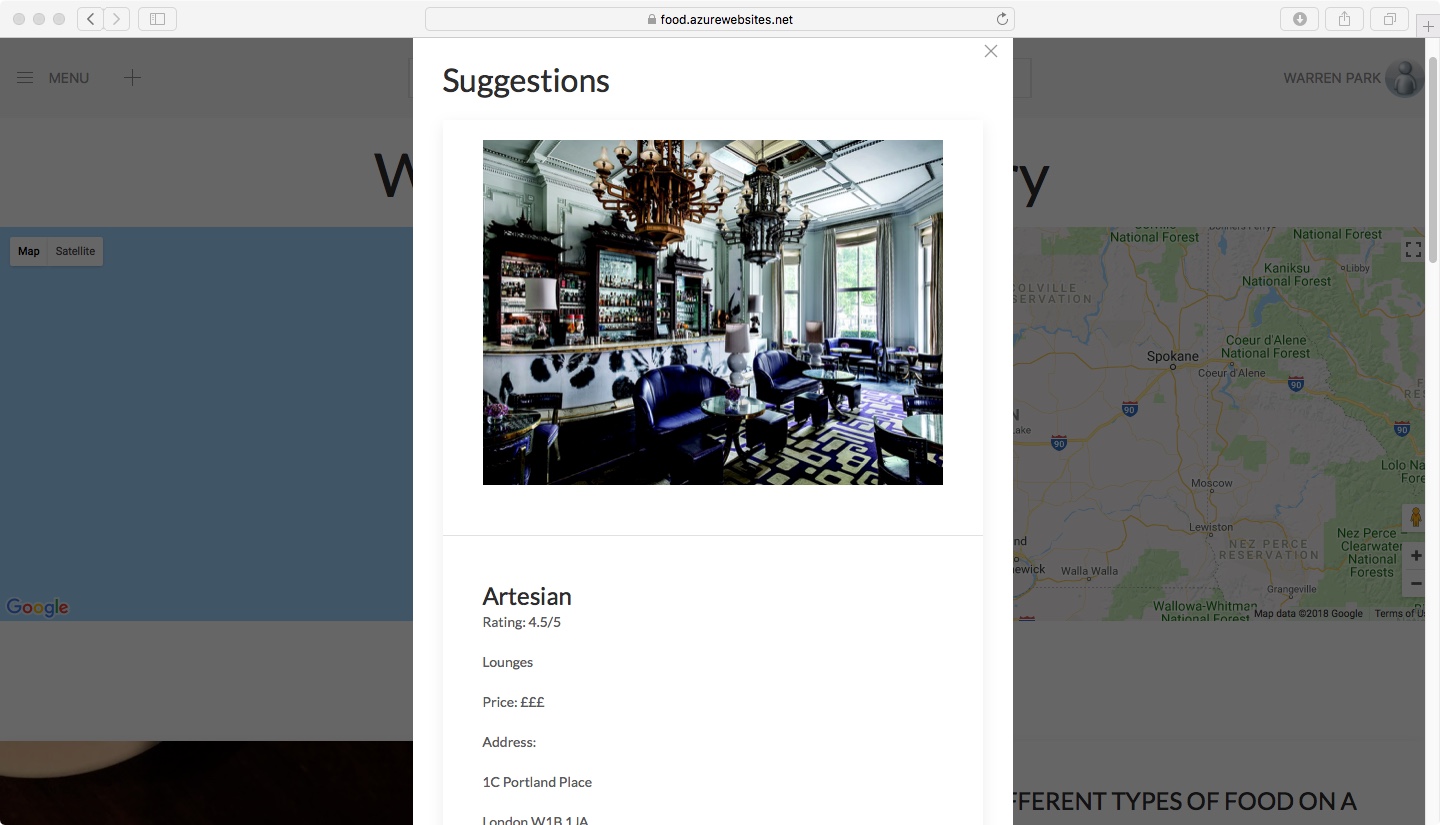
I have read the documentation and have found that the Microsoft Cognitive services are very easy to use since most of them happen in a simple HTTP request. Sending images using octet stream or URL was implemented quickly in the web app.

Then, I have implemented all of the Microsoft Cognitive services needed for the application and found that if I use an npm library called “cognitive-services”(https://www.npmjs.com/package/cognitive-services), implementation can be done even more concisely. The npm library can handle most of the Microsoft Cognitive services and can handle various functionalities of each API separately. I have decided to use this library instead of pure HTTP request and was able to develop the app quicker.

When most of the backend development had been finalised, I had to find a storage provider that can handle images securely and easily. As the staff from Microsoft has recommended, I have tried to utilise Azure storage especially the Blob storage.

Using Blob storage, I was able to upload image files directly without conversions to the storage and also was able to directly download image files from the storage. Since there were no conversion steps were required, it was easier for me to handle images. Microsoft had provided an npm module called “azure-storage”( https://www.npmjs.com/package/azure-storage) to enable developers to use Azure storage services with predefined upload and download functions, so there was no need for me to write separate functions that handle uploading and downloading.

Finally, me and my team members were able to develop a web app that can create a card that includes a single food diary entry with the analysis results from the Microsoft Cognitive services, search through the cards, suggest a restaurant based on the accumulated food eating history and preset default location, and show feeling trends over time.



2 Example restaurant suggestion generated by the application. Suggestion uses Yelp Fusion API.

When the deployable version of the web app has been developed, my team needed a web hosting service that can handle our web application. I have found that Azure provides effective Node.js web hosting service, and I have tried to deploy the web app by using the Github repository.

Using Github repository, Azure web app service automatically set up the application that I did not have to “npm install” from the console. It was able to show “Failed” if there was something wrong with the deployment as well as the log generated by the system, which was helpful for debugging the web app.

Overall, it was a fascinating development experience for my team. I think this development would not have been possible if Azure or Cognitive services was not existing. Thus, I highly recommend Azure services to any person who wants to develop AI enabled services or services that handle images.

\*The web app developed is available on https://food.azurewebsites.net

\*Public Github repository including all the source codes and report is available on https://github.com/Warren-Park/UCL-Cognitive-TEAM45-\_Food\_Diary-