# Cloud Computing and Big Data – Fall 2022

# Homework Assignment 1

## Assignment:

Host a static website using AWS S3 and build the API layer using API gateway.

## Outline:

This assignment is to help you understand essentially two AWS services - S3 (Simple Storage Service) and API gateway. You are required to host a static website using an S3 bucket and create API's using API gateway and integrate both.

1. Hosting a static website:

- Repurpose the following frontend starter application user interface. https://github.com/ndrppnc/cloud-hw1-starter
- Navigate to S3 in the AWS Console.
- Create an S3 bucket.
- Add the required Bucket Policy and then save.
- Add the permissions required to make your S3 bucket publicly accessible.
- Upload files to S3 bucket.
- Configure static website hosting in AWS S3 bucket.
- Validate by accessing your website using S3 URL.

2. Build the API for the application:

- Use API Gateway to setup your API.
- Use the following API/Swagger specification for your API https://github.com/001000001/aics-columbia-s2018/blob/master/aics-swagger.yaml
- Use https://editor-next.swagger.io/ visualize this file
- You can import the Swagger file into API Gateway.
- Create a Lambda function (LF0) that performs the operation. Use the request/response model (interfaces) specified in the API specification above.
- For now, just implement a boilerplate response to all search queries. Ex. User says anything, Lambda response should be: "Application under development. Search functionality will be implemented in Assignment 2".
- Deploy the API.

- Integrate your API with your front-end code.
- Notes:
    a. You will need to enable CORS on your API methods. (Refer this)
    b. API Gateway can generate an SDK for your API, which you can use in your frontend. It will take care of calling your API, as well as session signing the API calls -- an important security feature. (Refer this)

## Acceptance criteria:

1. Your website should be publicly accessible via the S3 bucket URL.
2. Your API Gateway should be correctly configured, and the API can be invoked from the front end and should be able to provide the response as stated above.

## Submission Instructions:

1. This assignment is to be done individually.
2. Please upload your files (frontend files, Lambda function code and API gateway swagger file) on GitHub and create a release. No changes to the repository after the assignment deadline.
3. Submit a document with your name, S3 URL to your website and GitHub link on Brightspace.