CS 524 Lab Assignment #5

Do not wait until the last day to start this lab.

In this lab, you will learn to create a simple microservices architecture.

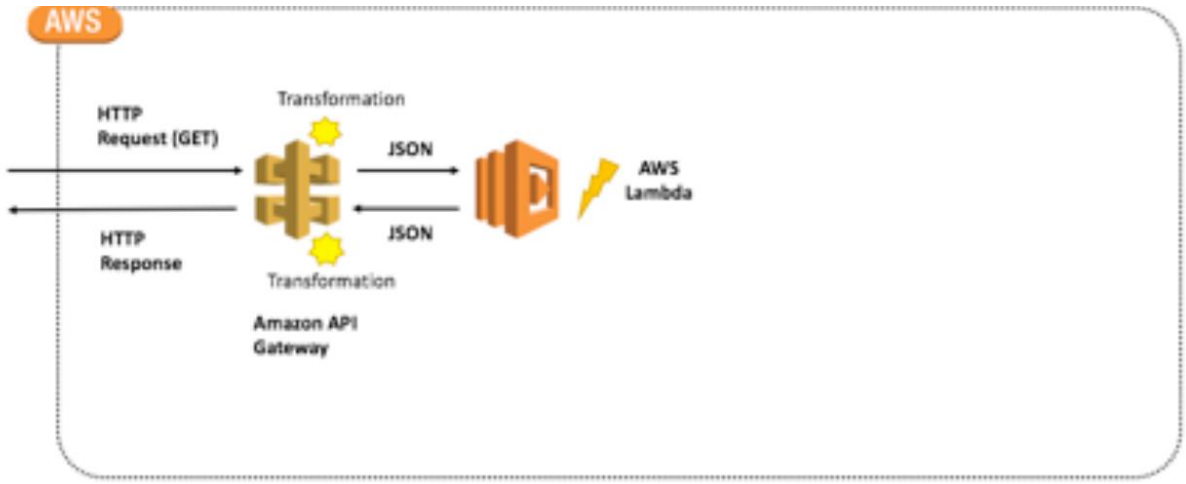
The microservice will return a JSON object containing a random question and answer pair (about Avengers) using an Amazon API Gateway endpoint that would invoke an AWS Lambda function.

A total of 100 points will be given to you if you successfully implement the outlined steps. In addition, at the discretion of course assistant, you can be given extra points (up to the maximum of 50) for devising and programming extra features.

As before, remember to double check the Amazon SLAs and ensure that you take all the necessary steps not to exceed the resource.

First, you need to ensure that you understand the concept sof Microservices Architecture, Application Programming Interface (API), RESTFul API. This has already been covered in the lecture.

The diagram below which would help you understand the purpose of the task:



The HTTP Response will consist of questions and answers based on the popular Marvel Avengers series.

Make sure you understand the purpose before proceeding. ALL steps should be well-documented and should have your unique AWS Account id.

After you implement the lab, make sure to include a conclusion of your findings.

The outline of your work is as follows:

1) Create a Lambda function named “Avengers.” *(a Lambda function* is a serverless compute service which helps you run your code without requiring you to manage your server.)

2) Copy and paste the following code in your Code source window:

```
var json = {
 "service": "lambda",
 "reference": "https://aws.amazon.com/lambda/avengers/",
 "questions": [{
  "q": "What is the real name of the Scarlet Witch?",
  "a": "Wanda Maximoff"
 },{
  "q":"Which film did The Aether first appear in?",
  "a":"Thor: The Dark World"
 },{
  "q":"Which of the infinity stones is hidden on Vormir?",
  "a":"Soul Stone"
 },{
  "q":"What is Captain America's shield made of?",
  "a":"Vibranium"
 },{
  "q":"Which country is Black Panther next in line to be king of?",
  "a":"Wakanda"
 },{
  "q":"What is the real name of Black Widow?",
  "a":"Natasha Romanoff"
 },{
  "q":"What is the name of the axe created for and then used by Thor in Avengers: Infinity War?",
  "a":"Stormbreaker"
 },{
```

```
    "q":"What is Loki's title?",
    "a":"God of Mischief"
  },{
    "q":"What is the name of the organisation which is revealed to have infiltrated S.H.I.E.L.D. in Captain America: The Winter Soldier?",
    "a":"Hydra"
  },{
    "q":"What nickname does Captain America know the Winter Solider as?",
    "a":"Bucky"
  },{
    "q":"What food do the Avengers go to eat after the Battle of New York in the first Avengers film at Tony Stark's suggestion?",
    "a":"Shawarma"
  },{
    "q":"What type of radiation caused Bruce Banner to become the Hulk?",
    "a":"Gamma rays"
 },{
    "q":"What is the name of the treaty the Avengers are asked to sign which divide the Avengers, bringing us to Captain America: Civil War?",
    "a":"The Sokovia Accords"
 },{
    "q":"Who has directed the most MCU movies?",
    "a":"The Russo Brothers"
 }
  ]
}


exports.handler = function(event, context) {
    var rand = Math.floor(Math.random() * json.questions.length);
    console.log("Quote selected: ", rand);
```

```
    var response = {
        body: JSON.stringify(json.questions[rand])
    };
    console.log(response);
    context.succeed(response);
};
```

Step 2) After deploying the above code, add an API Gateway as the trigger to your Lambda service. It should be a REST API.

Step 3) Test your Lambda function by copying your API Gateway endpoint URL and pasting it into your browser.

Step 4) Invoke the Lambda function and view CloudWatch logs for this function.

Step 5) Write a report with the conclusion.