

Homework 3

AWS Lambda function with API Gateway integration

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Course: SDEV 400 6980

Date: 7/25/2021

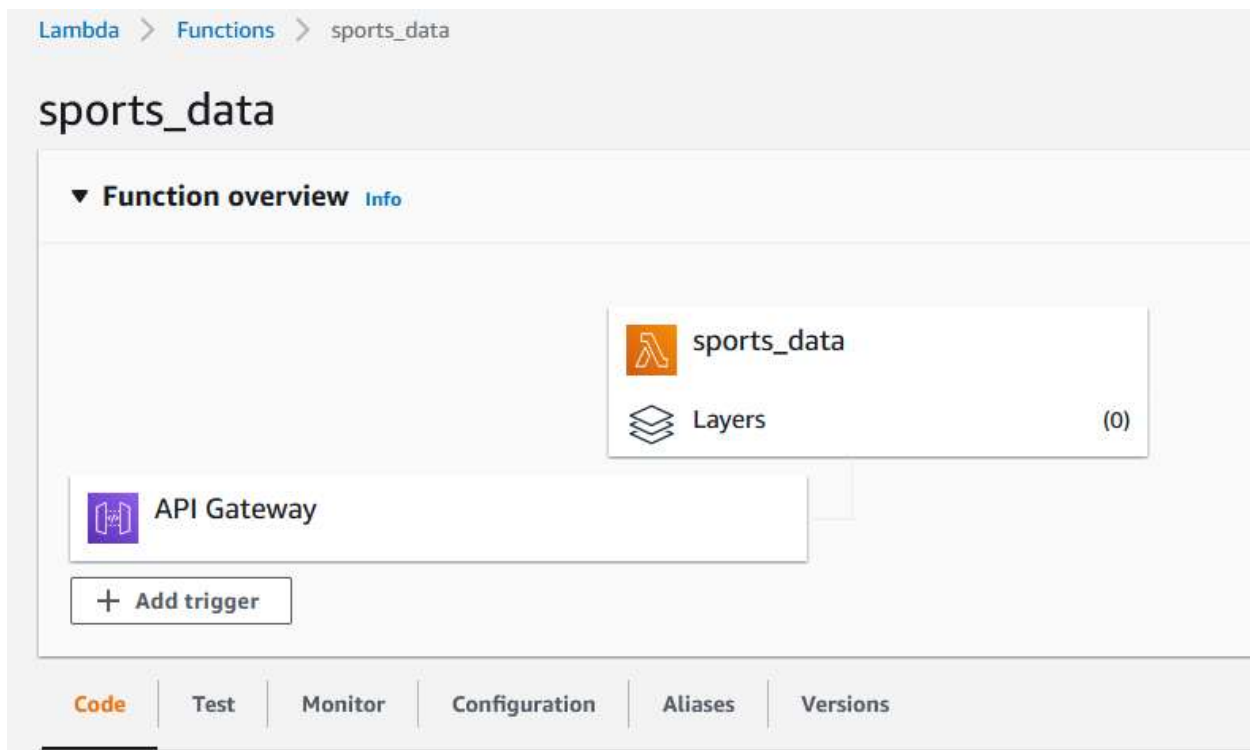
Professor: Dr. Craig Poma

1. (80points) Using your AWS Educate classroom environment, create a REST API with a Lambda backend service that provides the results of the last 5 games in a specific sport for a specific team entered by the user.

Lambda function `sports_data()` created and code attached to project. Lambda function includes API integration, as seen in below screen shot. The Lambda function reads JSON files from S3 to retrieve data on sports teams. The Lambda Python code was modified from code provided by University of Maryland Global Campus (2021).

Figure 1

Screen capture showing Lambda function with API Gateway integration.



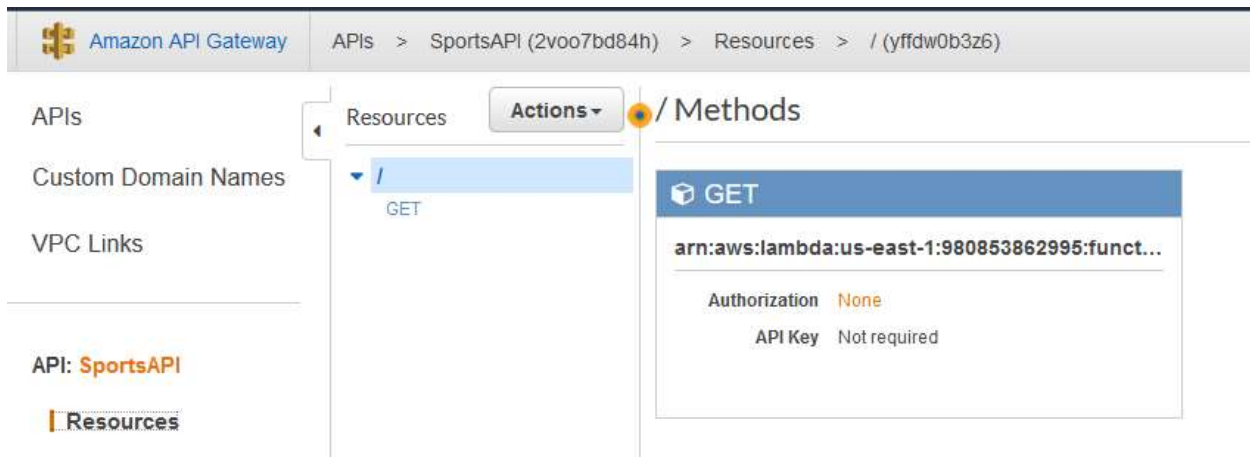
Note. From AWS Lambda console.

2. (20 points) Describe the API including detailed descriptions and screen captures of your API Resources and Stage. Discuss how and show results of your testing the Lambda function and resulting API that uses the Lambda function backend. Include your API Endpoint URL to be run by the professor in your documentation.

I created an API connection called SportAPI which integrates with my Lambda function `sports_data()`. The API consists of a GET method which takes in keyword arguments and passes them to the Lambda function. The Lambda function code was taken from See screen shots below:

Figure 2

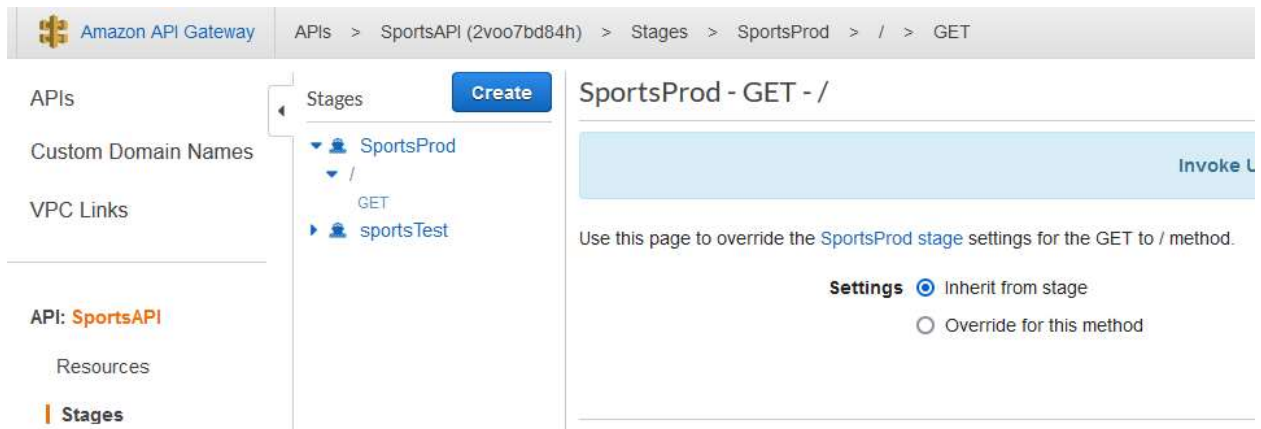
Screen capture showing API Gateway Resources.



Note. From AWS API Gateway.

Figure 3

Screen capture showing API Gateway Stages.



Note. From AWS API Gateway.

The API endpoint can be found at the following URL: <https://2voo7bd84h.execute-api.us-east-1.amazonaws.com/SportsProd/>

To test the API, add search terms for the team and sport by adding a string to the end of the given URL such as the following:

?team=chi&sport=nfl

The added string will search for team 'chi', meaning the Chicago Bears, in the sport NFL. What follows is a detailed test case table showing the URL active with various inputs.

Test Case Table

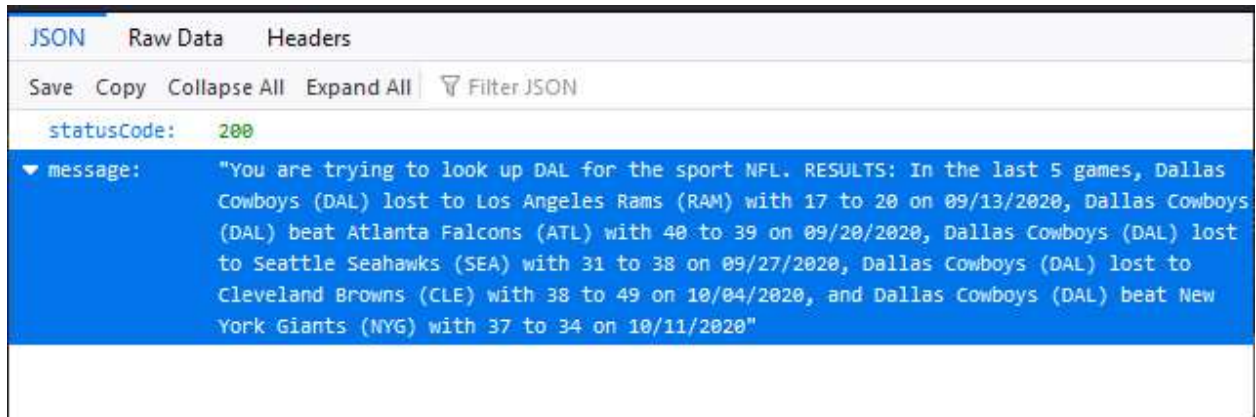
Test Case	Input	Expected Output	Actual Output	Figure Reference
1	?team=dal&sport=nfl	The last 5 games played by the Dallas Cowboys, including scores, dates for the games, the opposing team, and which team won.	In the last 5 games, Dallas Cowboys (DAL) lost to Los Angeles Rams (RAM) with 17 to 20 on 09/13/2020, Dallas Cowboys (DAL) beat Atlanta Falcons (ATL) with 40 to 39 on 09/20/2020, Dallas Cowboys (DAL) lost to Seattle Seahawks (SEA) with 31 to 38 on 09/27/2020, Dallas Cowboys (DAL) lost to Cleveland Browns (CLE) with 38 to 49 on 10/04/2020, and Dallas Cowboys (DAL) beat New York Giants (NYG) with 37 to 34 on 10/11/2020	4
2	?team=dasd&sport=nfl	Message saying that the team was not found along with a list of available teams to search.	Team DASD not found. Try one of the following teams: {'BUF', 'SEA', 'NWE', 'CLT', 'PHI', 'CRD', 'KAN', 'NYG', 'CLE', 'SFO', 'CHI', 'RAI', 'WAS', 'DAL', 'DEN', 'NOR', 'JAX', 'NYJ', 'RAM', 'MIN', 'DET', 'CAR', 'RAV', 'GNB', 'PIT', 'ATL', 'SDG', 'MIA', 'OTI', 'CIN', 'HTX', 'TAM'}	5
3	?team=&sport=asdh	Message saying that sport is not found along with a list of available sports to search.	Sport is not recognized. Please try either NBA, NHL, or NFL.	6
4	?sport=	Message saying that sport and team search terms are required along with a suggested search query.	sport and team parameters are required. Try adding the following to the URL: ?team=WAS&sport=NBA	7
5	?team=orl&sport=nba	The last 5 games played by Orlando, including scores,	In the last 5 games, Orlando (ORL) beat Miami (MIA) with 113 to 107 on	8

		dates for the games, the opposing team, and which team won.	12/23/2020, Orlando (ORL) beat Washington (WAS) with 130 to 120 on 12/26/2020, Orlando (ORL) beat Washington (WAS) with 120 to 113 on 12/27/2020, Orlando (ORL) beat Oklahoma City (OKC) with 118 to 107 on 12/29/2020, and Orlando (ORL) lost to Philadelphia (PHI) with 92 to 116 on 12/31/2020	
6	?team=van&sport=nhl	The last 5 games played by Vancouver Canucks, including scores, dates for the games, the opposing team, and which team won.	In the last 5 games, Vancouver Canucks (VAN) beat Edmonton Oilers (EDM) with 5 to 3 on 01/13/2021, Vancouver Canucks (VAN) lost to Edmonton Oilers (EDM) with 2 to 5 on 01/14/2021, Vancouver Canucks (VAN) lost to Calgary Flames (CGY) with 0 to 3 on 01/16/2021, Vancouver Canucks (VAN) lost to Calgary Flames (CGY) with 2 to 5 on 01/18/2021, and Vancouver Canucks (VAN) beat Montreal Canadiens (MTL) with 6 to 5 on 01/20/2021	9

Test Case 1

Figure 4

Screen capture showing results of search.



Note. From Firefox web browser.

Test Case 2

Figure 5

Screen capture showing results of search.

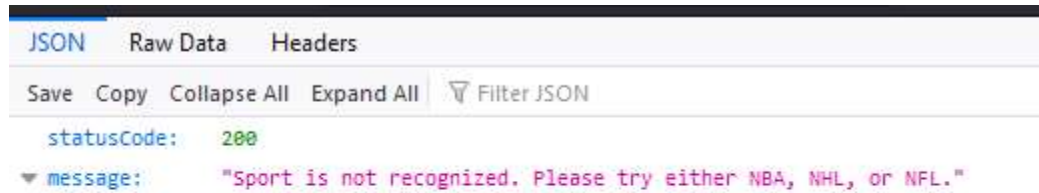


Note. From Firefox web browser.

Test Case 3

Figure 6

Screen capture showing results of search.



Note. From Firefox web browser.

Test Case 4

Figure 7

Screen capture showing results of search.

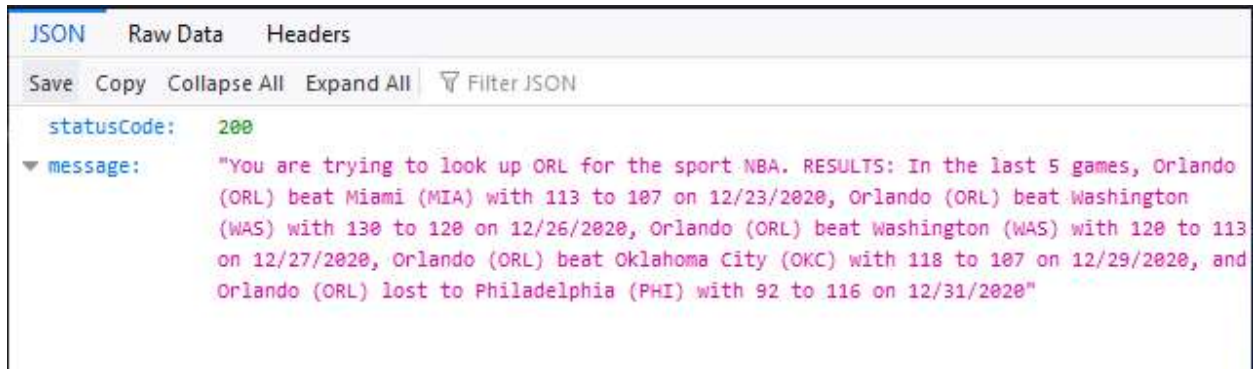


Note. From Firefox web browser.

Test Case 5

Figure 8

Screen capture showing results of search.

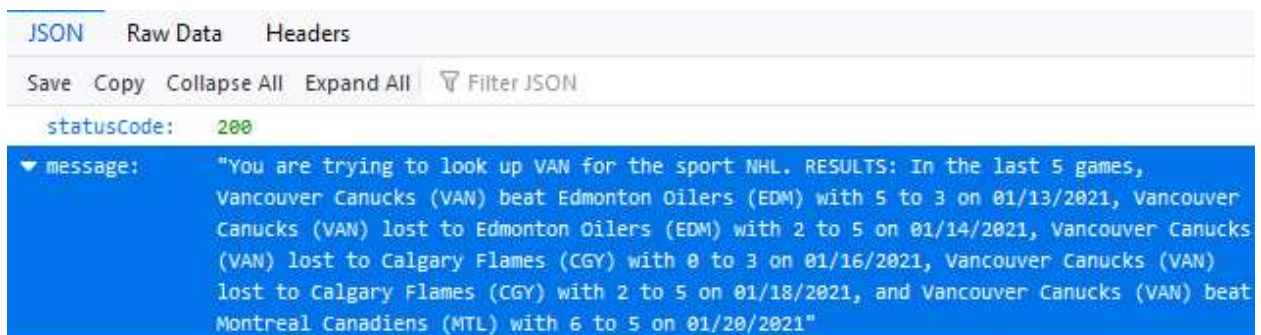


Note. From Firefox web browser.

Test Case 6

Figure 9

Screen capture showing results of search.



Note. From Firefox web browser.

References

Python Lambda code. (2021). [Python code provided by UMGC that integrates AWS Lambda function with API Gateway]. UMGC.