

Creating a Serverless Web Application:

GitHub Repo: https://github.com/chirag1912/Serverless_Assignment

1. Serverless application has been deployed using the framework of Chalice, where in the application fetches the latest google News feed from the News API and displays the contents in JSON format using the serverless lambda service of AWS.
2. Steps taken to create a serverless Application and to deploy the application:

Configuring the AWS credentials to CLI command line:

```
$ aws configure
```

```
AWS Access Key ID [*****OI3G]:
```

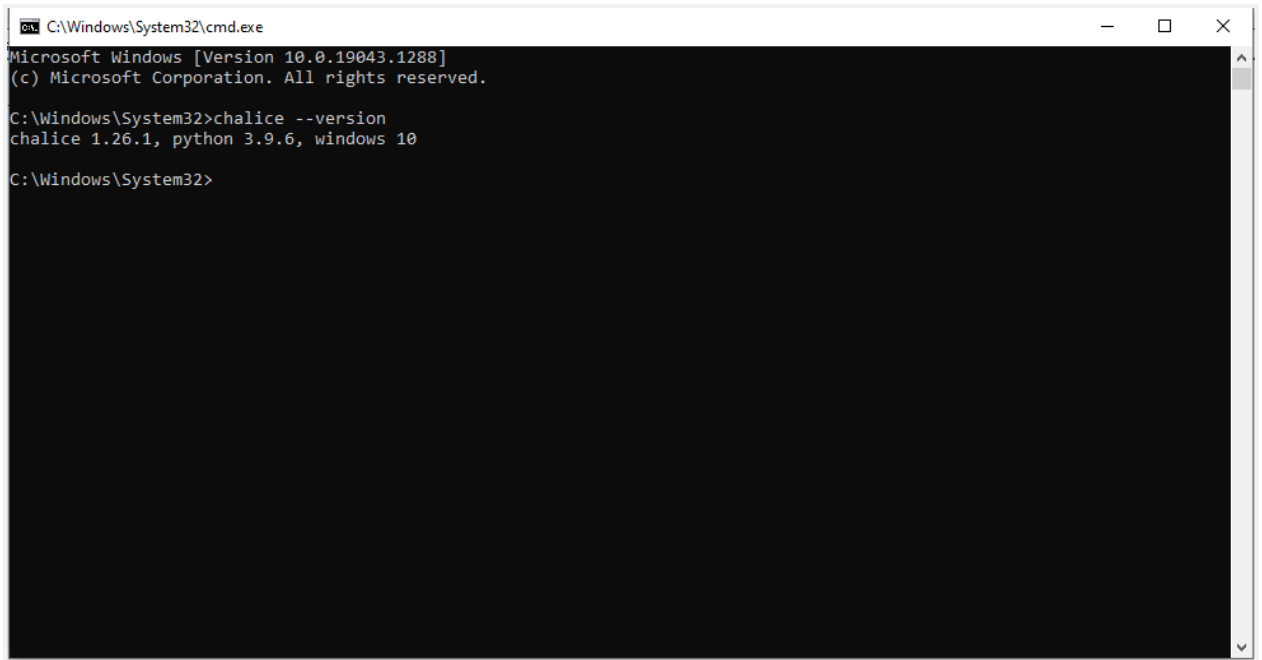
```
AWS Secret Access Key [*****weRu]:
```

```
Default region name [us-west-2]:
```

```
Default output format [None]:
```

3. Installing chalice environment for the project:

```
python3 -m pip install chalice command.
```



```
C:\Windows\System32\cmd.exe
Microsoft Windows [Version 10.0.19043.1288]
(c) Microsoft Corporation. All rights reserved.

C:\Windows\System32>chalice --version
chalice 1.26.1, python 3.9.6, windows 10

C:\Windows\System32>
```

4. Creating a new project for news-update in the Serverless Assignment folder.

```
Administrator: C:\Windows\System32\cmd.exe
Microsoft Windows [Version 10.0.19043.1288]
(c) Microsoft Corporation. All rights reserved.

C:\WINDOWS\system32>chalice new-project news-update
Your project has been generated in ./news-update

C:\WINDOWS\system32>cd news-update

C:\Windows\System32\news-update>cd "C:\Users\Checkout\Desktop\Andrew Bond Class 272\Serverless_Assignment"

C:\Users\Checkout\Desktop\Andrew Bond Class 272\Serverless_Assignment>
C:\Users\Checkout\Desktop\Andrew Bond Class 272\Serverless_Assignment>
C:\Users\Checkout\Desktop\Andrew Bond Class 272\Serverless_Assignment>chalice new-project news-update
Your project has been generated in ./news-update

C:\Users\Checkout\Desktop\Andrew Bond Class 272\Serverless_Assignment>
C:\Users\Checkout\Desktop\Andrew Bond Class 272\Serverless_Assignment>
C:\Users\Checkout\Desktop\Andrew Bond Class 272\Serverless_Assignment>cd news-update

C:\Users\Checkout\Desktop\Andrew Bond Class 272\Serverless_Assignment\news-update>
```

5. The src code for python serverless application is deployed in git repo.
6. To get the new feed from the google's RSS feed library of BeautifulSoup is used and for parsing the XML data lxml is used.
\$ python3 -m pip install bs4
\$ python3 -m pip install lxml
7. News feed from the API and publication date is filtered out to get the results, creating a list of news items.
8. Requirement libraries of the serverless application have been added to the requirements.txt folder. The framework packs the requirements and deploys to the lambda function during deployment.
9. Following code is used to deploy the function to AWS content storage bucket:

Microsoft Windows [Version 10.0.19043.1288]
(c) Microsoft Corporation. All rights reserved.

```
C:\Windows\System32>cd "C:\Users\Checkout\Desktop\Andrew Bond Class  
272\Serverless_Assignment\news-update"
```

```
C:\Users\Checkout\Desktop\Andrew Bond Class  
272\Serverless_Assignment\news-update>code .
```

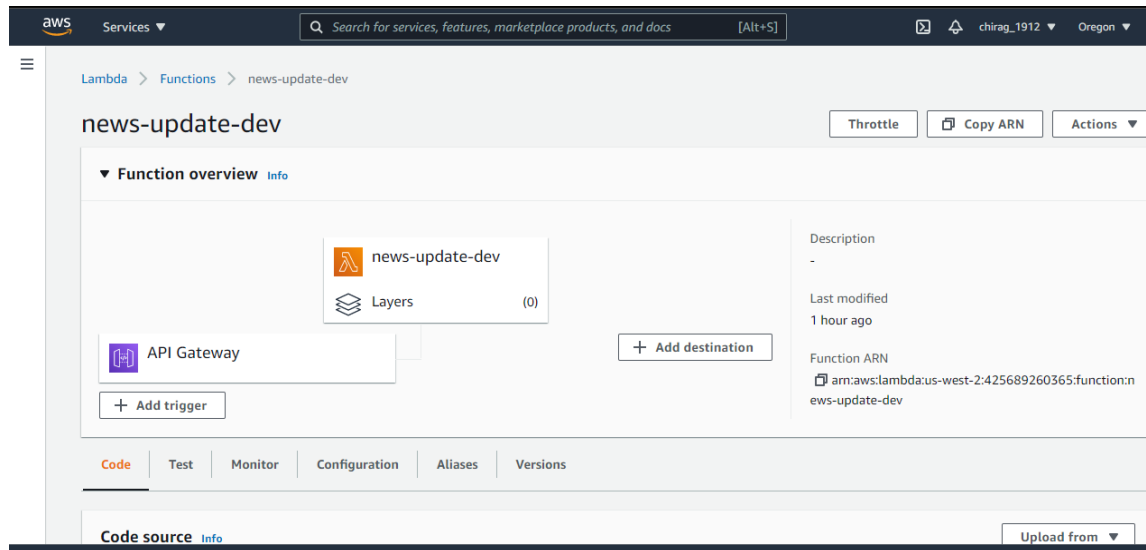
```
C:\Users\Checkout\Desktop\Andrew Bond Class  
272\Serverless_Assignment\news-update>chalice deploy  
Creating deployment package.  
Creating IAM role: news-update-dev  
Creating lambda function: news-update-dev
```

Creating Rest API

Resources deployed:

- Lambda ARN: `arn:aws:lambda:us-west-2:425689260365:function:news-update-dev`
- Rest API URL: <https://o0x3iv5tff.execute-api.us-west-2.amazonaws.com/api/>

10. Lambda function is created with name: news-update-dev in aws console:



11. CLI command to deploy the application to the serverless lambda function.

```
C:\Windows\System32\cmd.exe
Installing collected packages: soupsieve, beautifulsoup4, bs4
Successfully installed beautifulsoup4-4.10.0 bs4-0.0.1 soupsieve-2.2.1
WARNING: You are using pip version 21.1.3; however, version 21.3.1 is available.
You should consider upgrading via the 'C:\Users\Checkout\AppData\Local\Programs\Python\Python39\python.exe -m pip install
--upgrade pip' command.

C:\Users\Checkout\Desktop\Andrew Bond Class 272\Serverless_Assignment\news-update>
C:\Users\Checkout\Desktop\Andrew Bond Class 272\Serverless_Assignment\news-update>
C:\Users\Checkout\Desktop\Andrew Bond Class 272\Serverless_Assignment\news-update>python -m pip install lxml
Collecting lxml
  Downloading lxml-4.6.3-cp39-cp39-win_amd64.whl (3.5 MB)
    | 3.5 MB 1.7 MB/s
Installing collected packages: lxml
Successfully installed lxml-4.6.3
WARNING: You are using pip version 21.1.3; however, version 21.3.1 is available.
You should consider upgrading via the 'C:\Users\Checkout\AppData\Local\Programs\Python\Python39\python.exe -m pip install
--upgrade pip' command.

C:\Users\Checkout\Desktop\Andrew Bond Class 272\Serverless_Assignment\news-update>
C:\Users\Checkout\Desktop\Andrew Bond Class 272\Serverless_Assignment\news-update>
C:\Users\Checkout\Desktop\Andrew Bond Class 272\Serverless_Assignment\news-update>chalice deploy
Creating deployment package.
Updating policy for IAM role: news-update-dev
Updating lambda function: news-update-dev
Updating rest API
Resources deployed:
- Lambda ARN: arn:aws:lambda:us-west-2:425689260365:function:news-update-dev
- Rest API URL: https://o0x3iv5tff.execute-api.us-west-2.amazonaws.com/api/

C:\Users\Checkout\Desktop\Andrew Bond Class 272\Serverless_Assignment\news-update>
```

12. Application deployed can be checked on lambda API URL:
<https://o0x3iv5tff.execute-api.us-west-2.amazonaws.com/api/>

13. API gives the resultant news from the Google's News API:

```
["result":[{"title":"Powerful storm brings heavy rain, flooding and mud flows to Northern California - NPR","date":"Sun, 24 Oct 2021 22:19:00 GMT"},{"title":"Colombia's president hails capture of cartel boss Dairo Antonio Gu\u00e1rdula - The Guardian","date":"Sun, 24 Oct 2021 14:59:00 GMT"},{"title":"Nancy Pelosi briefly forgets Donald Trump's name on CNN's 'State of the Union' - Fox News","date":"Sun, 24 Oct 2021 21:58:21 GMT"},{"title":"Biden Meets With Manchin and Schumer to Iron Out Spending Bill - The New York Times","date":"Sun, 24 Oct 2021 23:58:45 GMT"},{"title":"Facebook's Internal Chat Boards Show Politics Often at Center of Decision Making - The Wall Street Journal","date":"Sun, 24 Oct 2021 18:34:00 GMT"},{"title":"Top Florida health official asked to leave meeting with lawmaker for refusing to wear mask | TheHill - The Hill","date":"Sun, 24 Oct 2021 18:17:11 GMT"},{"title":"Family blames Halyna Hutchins' death on prop team's 'negligence' - Business Insider","date":"Sun, 24 Oct 2021 19:37:06 GMT"},{"title":"Trial of Charlottesville 'Unite the Right' rally organizers set to start - The Hill","date":"Sun, 24 Oct 2021 22:40:33 GMT"},{"title":"What Biden is keeping secret in the JFK files - POLITICO","date":"Sun, 24 Oct 2021 18:43:21 GMT"},{"title":"4.7M earthquake recorded off the Oregon Coast - KATU","date":"Sun, 24 Oct 2021 18:02:31 GMT"},{"title":"Moscow decries U.S. move to call Russians 'homeless' for visa purposes - Reuters","date":"Sun, 24 Oct 2021 17:59:00 GMT"},{"title":"Lira Drops to Record After Erdogan's Threat Against Envoys - Bloomberg","date":"Sun, 24 Oct 2021 20:03:09 GMT"},{"title":"Shin Bet, Foreign Ministry rep heading to US over outlawed Palestinian groups - The Times of Israel","date":"Sun, 24 Oct 2021 20:41:37 GMT"},{"title":"Gottlieb: Latest variant not contagious enough to change virus 'trajectory' in US | TheHill - The Hill","date":"Sun, 24 Oct 2021 16:12:54 GMT"},{"title":"Big Tech companies report earnings: What to know this week - Yahoo Finance","date":"Sun, 24 Oct 2021 21:06:53 GMT"},{"title":"Vellen says Americans haven't experienced current inflation rate 'in a long time' - Fox Business","date":"Sun, 24 Oct 2021 15:01:58 GMT"},{"title":"Chinese EV maker Xpeng launches upgraded semi-autonomous driving features in a challenge to Tesla - CNBC","date":"Sun, 24 Oct 2021 13:18:28 GMT"},{"title":"Fauci predicts COVID vaccines for kids 5-11 will be available early November - New York Post","date":"Sun, 24 Oct 2021 16:01:00 GMT"},{"title":"Apple Says Notch is a 'Smart Way' to Give Users More Space for Content on New MacBook Pros - MacRumors","date":"Sun, 24 Oct 2021 19:35:39 GMT"},{"title":"This Week in Apps: Google Play lowers commissions, Apple drops anti-steering rule, Pinterest clones TikTok, Android 12 arrives - TechCrunch","date":"Sat, 23 Oct 2021 18:00:45 GMT"},{"title":"AirPods 3: Apple's 2021 wireless headphones are missing a few big features - CNET","date":"Sun, 24 Oct 2021 12:00:20 GMT"},{"title":"When it comes to solar farms, sheep are great groundskeepers - Ars Technica","date":"Sun, 24 Oct 2021 21:26:45 GMT"},{"title":"James Michael Tyler, Gunther from 'Friends,' Dead at 59 from Cancer - TMZ","date":"Sun, 24 Oct 2021 21:15:00 GMT"},{"title":"Angelina Jolie attends 'u2018Eternals' u2019 premiere in Italy with Shiloh and Zahara - Page Six","date":"Sun, 24 Oct 2021 20:49:00 GMT"},{"title":"'J Balvin Apologizes for 'u201cPerra' u201d Video - Pitchfork","date":"Sun, 24 Oct 2021 22:27:15 GMT"},{"title":"'u2018Saturday Night Live' u2019 Ratings Rise With Host Jason Sudeikis - Deadline","date":"Sun, 24 Oct 2021 20:36:00 GMT"},{"title":"'49ers vs. Colts inactives: Trent Williams is out; Jaylon Moore makes his first career start - Niners Nation","date":"Sun, 24 Oct 2021 22:58:51 GMT"},{"title":"Patrick Mahomes clears concussion protocol, but Chiefs' struggles continue in blowout loss - ESPN","date":"Sun, 24 Oct 2021 22:28:37 GMT"},{"title":"'NFL Week 7 grades: Bengals get an 'A' for destroying Ravens, Chiefs get an 'F' for blowout loss to Titans - CBSSports.com","date":"Mon, 25 Oct 2021 00:15:00 GMT"},{"title":"'Recruits react to Illini's win at No. 7 Penn State: 'Illinois is on the verge of something big' - 247Sports","date":"Sun, 24 Oct 2021 20:45:00 GMT"},{"title":"'Ancient Traces of Life Discovered Encased in a 2.5 Billion-Year-Old Ruby - SciTechDaily","date":"Sun, 24 Oct 2021 19:51:11 GMT"},{"title":"'Want to hear what it sounds like on Mars? NASA's Perseverance rover gives you the chance. - Yahoo News","date":"Sun, 24 Oct 2021 18:42:17 GMT"},{"title":"'NASA plans to launch Artemis I Moon mission in February 2022 - Engadget","date":"Sat, 23 Oct 2021 16:42:29 GMT"},{"title":"'Ancient asteroids struck Earth frequently, delayed rise of life - study - The Jerusalem Post","date":"Sun, 24 Oct 2021 15:34:00 GMT"},{"title":"'Pensacola rallies together to make strides against breast cancer - HEARST","date":"Sat, 23 Oct 2021 21:29:01 GMT"},{"title":"'A nurse created a baby registry for a new father after his unvaccinated wife died of Covid-19 before meeting their baby - CNN","date":"Sun, 24 Oct 2021 15:45:00 GMT"},{"title":"'Brain fog in COVID-19 patients can persist for months, even in those who were not hospitalized, study finds - KSL.com","date":"Sun, 24 Oct 2021 16:52:30 GMT"},{"title":"'Pregnant women pass fewer coronavirus antibodies to unborn boys: study - Business Insider","date":"Sat, 23 Oct 2021 08:47:00 GMT"}]]
```

14. JSON objects on filtering:

WEPI Print

one.SJSU

Email SJSU

Google

JSON

Raw Data

Headers

Save

Copy

Collapse All

Expand All

Filter JSON

result:

0:

title:

"Powerful storm brings heavy rain, flooding and mud flows to Northern California - NPR"

date:

"Sun, 24 Oct 2021 22:19:00 GMT"

1:

title:

"'You beat me': Colombia's most-wanted drug lord caught - Reuters Canada"

date:

"Sun, 24 Oct 2021 23:58:00 GMT"

2:

title:

"Brian Laundrie found: Parents may have just missed discovering son themselves - Fox News"

date:

"Sun, 24 Oct 2021 17:51:14 GMT"

3:

title:

"Facebook employees tried to suppress conservative news outlets, report shows - New York Post "

date:

"Sun, 24 Oct 2021 22:17:00 GMT"

4:

title:

"Nancy Pelosi briefly forgets Donald Trump's name on CNN's 'State of the Union' - Fox News"

date:

"Sun, 24 Oct 2021 21:58:21 GMT"

5:

title:

"Biden Meets With Manchin and Schumer to Iron Out Spending Bill - The New York Times"

date:

"Sun, 24 Oct 2021 23:58:45 GMT"

6:

title:

"This scene led to Alec Baldwin shooting on 'Rust' set - Los Angeles Times"

date:

"Sun, 24 Oct 2021 22:48:25 GMT"