

ASSIGNMENT 2

(Tutorial 1)

Step 1: run the given commands on the terminal

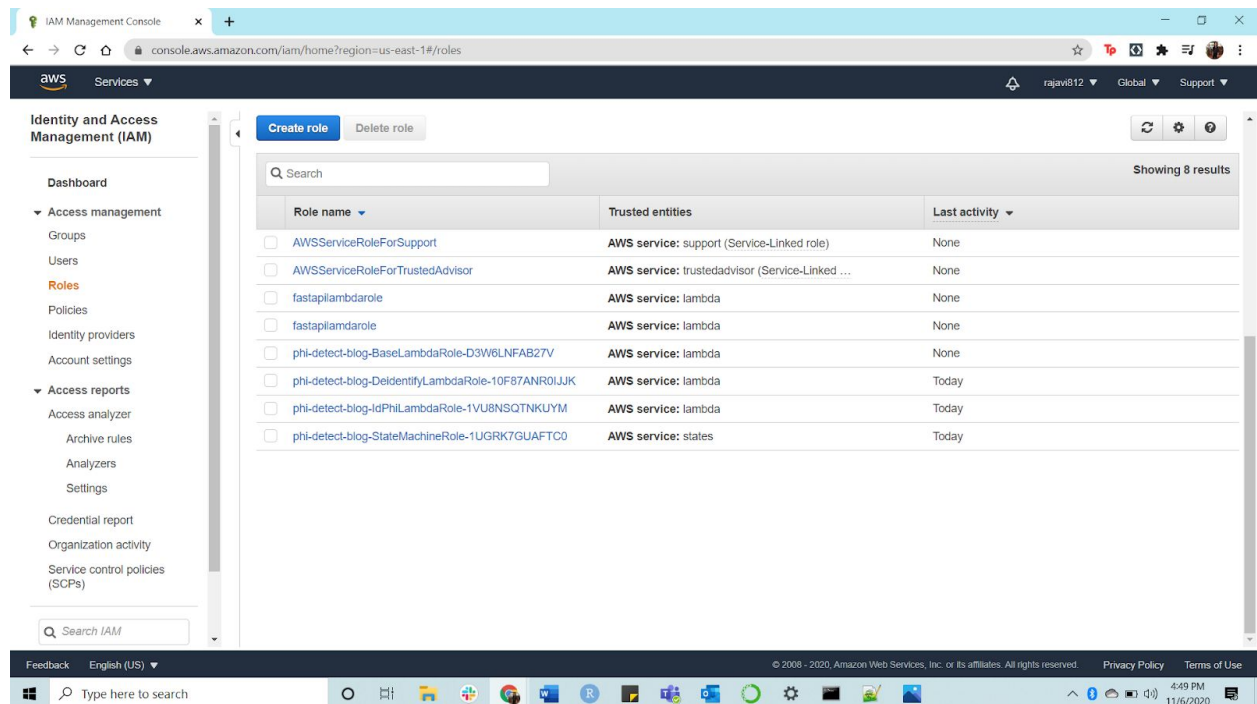
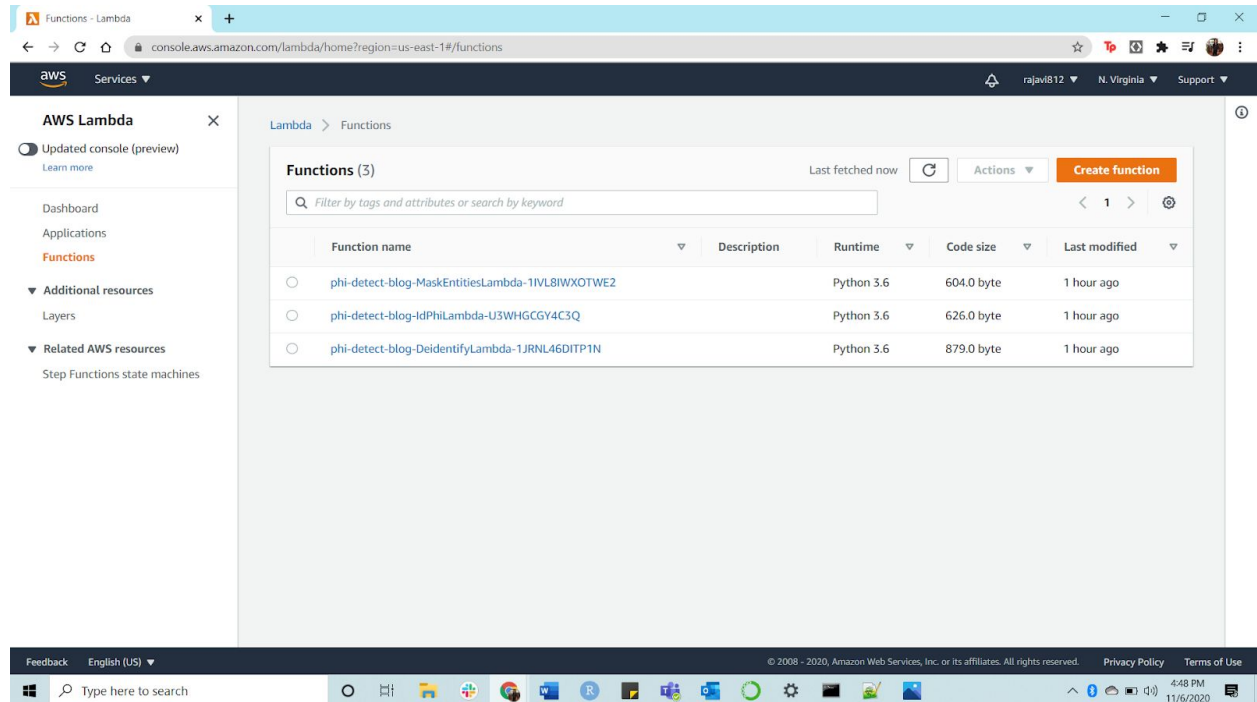
```
Microsoft Windows [Version 10.0.19041.572]
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C:\Users\Rajavi Mehta>pip install boto3 --target python/.
Collecting boto3
  Using cached boto3-1.16.12-py2.py3-none-any.whl (129 kB)
Collecting botocore<1.28.0,>=1.19.12
  Using cached botocore-1.19.12-py2.py3-none-any.whl (6.7 MB)
Collecting jmespath<1.0.0,>=0.7.1
  Using cached jmespath-0.10.0-py2.py3-none-any.whl (24 kB)
Collecting s3transfer<0.4.0,>=0.3.0
  Using cached s3transfer-0.3.3-py2.py3-none-any.whl (69 kB)
Collecting urllib3<1.26,>=1.25.4; python_version <= "3.4"
  Using cached urllib3-1.25.11-py2.py3-none-any.whl (127 kB)
Collecting python-dateutil<3.0.0,>=2.1
  Using cached python_dateutil-2.8.1-py2.py3-none-any.whl (227 kB)
Collecting six>=1.5
  Using cached six-1.15.0-py2.py3-none-any.whl (10 kB)
Installing collected packages: urllib3, jmespath, six, python-dateutil, botocore, s3transfer, boto3
Successfully installed boto3-1.16.12 botocore-1.19.12 jmespath-0.10.0 python-dateutil-2.8.1 s3transfer-0.3.3 six-1.15.0 urllib3-1.25.11
WARNING: Target directory C:\Users\Rajavi Mehta\python\boto3 already exists. Specify --upgrade to force replacement.
WARNING: Target directory C:\Users\Rajavi Mehta\python\boto3-1.16.12.dist-info already exists. Specify --upgrade to force replacement.
WARNING: Target directory C:\Users\Rajavi Mehta\python\botocore already exists. Specify --upgrade to force replacement.
WARNING: Target directory C:\Users\Rajavi Mehta\python\botocore-1.19.12.dist-info already exists. Specify --upgrade to force replacement.
WARNING: Target directory C:\Users\Rajavi Mehta\python\dateutil already exists. Specify --upgrade to force replacement.
WARNING: Target directory C:\Users\Rajavi Mehta\python\jmespath already exists. Specify --upgrade to force replacement.
WARNING: Target directory C:\Users\Rajavi Mehta\python\jmespath-0.10.0.dist-info already exists. Specify --upgrade to force replacement.
WARNING: Target directory C:\Users\Rajavi Mehta\python\python_dateutil-2.8.1.dist-info already exists. Specify --upgrade to force replacement.
WARNING: Target directory C:\Users\Rajavi Mehta\python\s3transfer already exists. Specify --upgrade to force replacement.
WARNING: Target directory C:\Users\Rajavi Mehta\python\s3transfer-0.3.3.dist-info already exists. Specify --upgrade to force replacement.
WARNING: Target directory C:\Users\Rajavi Mehta\python\six-1.15.0.dist-info already exists. Specify --upgrade to force replacement.
WARNING: Target directory C:\Users\Rajavi Mehta\python\six.py already exists. Specify --upgrade to force replacement.
WARNING: Target directory C:\Users\Rajavi Mehta\python\urllib3 already exists. Specify --upgrade to force replacement.
WARNING: Target directory C:\Users\Rajavi Mehta\python\urllib3-1.25.11.dist-info already exists. Specify --upgrade to force replacement.
WARNING: Target directory C:\Users\Rajavi Mehta\python\__pycache__ already exists. Specify --upgrade to force replacement.
WARNING: Target directory C:\Users\Rajavi Mehta\python\bin already exists. Specify --upgrade to force replacement.
WARNING: You are using pip version 20.2.1; however, version 20.2.4 is available.
You should consider upgrading via the 'c:\users\rajavi mehta\appdata\local\programs\python\python38\python.exe -m pip install --upgrade pip' command.

C:\Users\Rajavi Mehta>pip install botocore --target python/.
Collecting botocore
  Using cached botocore-1.19.12-py2.py3-none-any.whl (6.7 MB)
Collecting jmespath<1.0.0,>=0.7.1
  Using cached jmespath-0.10.0-py2.py3-none-any.whl (24 kB)
Collecting urllib3<1.26,>=1.25.4; python_version <= "3.4"
  Using cached urllib3-1.25.11-py2.py3-none-any.whl (127 kB)
Collecting python-dateutil<3.0.0,>=2.1
  Using cached python_dateutil-2.8.1-py2.py3-none-any.whl (227 kB)
Collecting six>=1.5
  Using cached six-1.15.0-py2.py3-none-any.whl (10 kB)
```


Step 2: Launch stack and give LayerVersionARN from the above command and create the stack.

This will create 3 lambda functions, 4 roles, a stack and a DynamoDB table



DynamoDB - AWS Console

console.aws.amazon.com/dynamodb/home?region=us-east-1#tables:

aws Services

DynamoDB

Dashboard

Tables

Backups

Reserved capacity

Preferences

DAX

Dashboard

Clusters

Subnet groups

Parameter groups

Events

Create table Delete table

Filter by table name

Choose a table group

Actions

1 to 1 of 1 Tables

Name	Status	Partition key	Sort key	Indexes	Total read capacity	Total write capacity
DeidentificationTable	Active	MessageHash (String)	EntityHash (String)	0	5	5

Feedback English (US)

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Step Functions Management Console

console.aws.amazon.com/states/home?region=us-east-1#statemachines

aws Services

Step Functions

State machines

Activities

Feature spotlight

Join our feedback panel

State machines (1)

Search for state machines

Any type

1

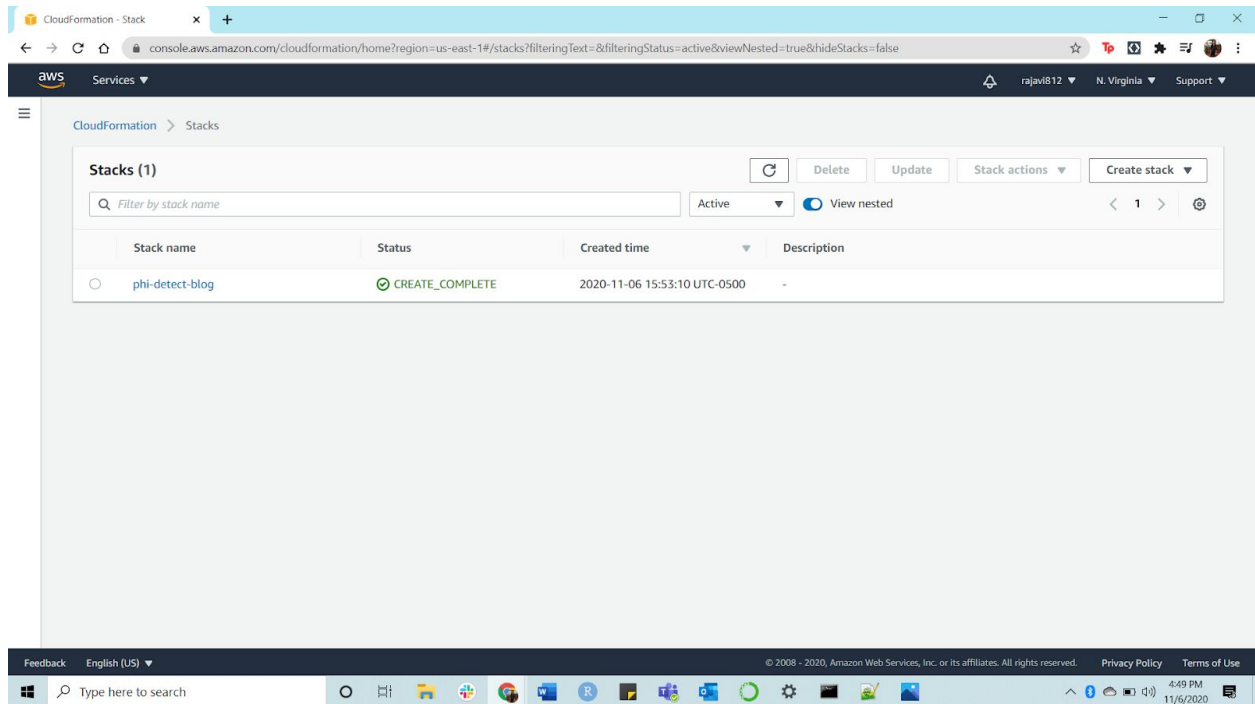
Name	Type	Creation date	Status	Logs	Running	Succeeded	Failed	Timed out	Aborted
DeldandMaskStateMachine-eVM74hXplyrX	Standard	Nov 6, 2020 03:53:57.735 PM	Active	-	0	1	0	0	0

Feedback English (US)

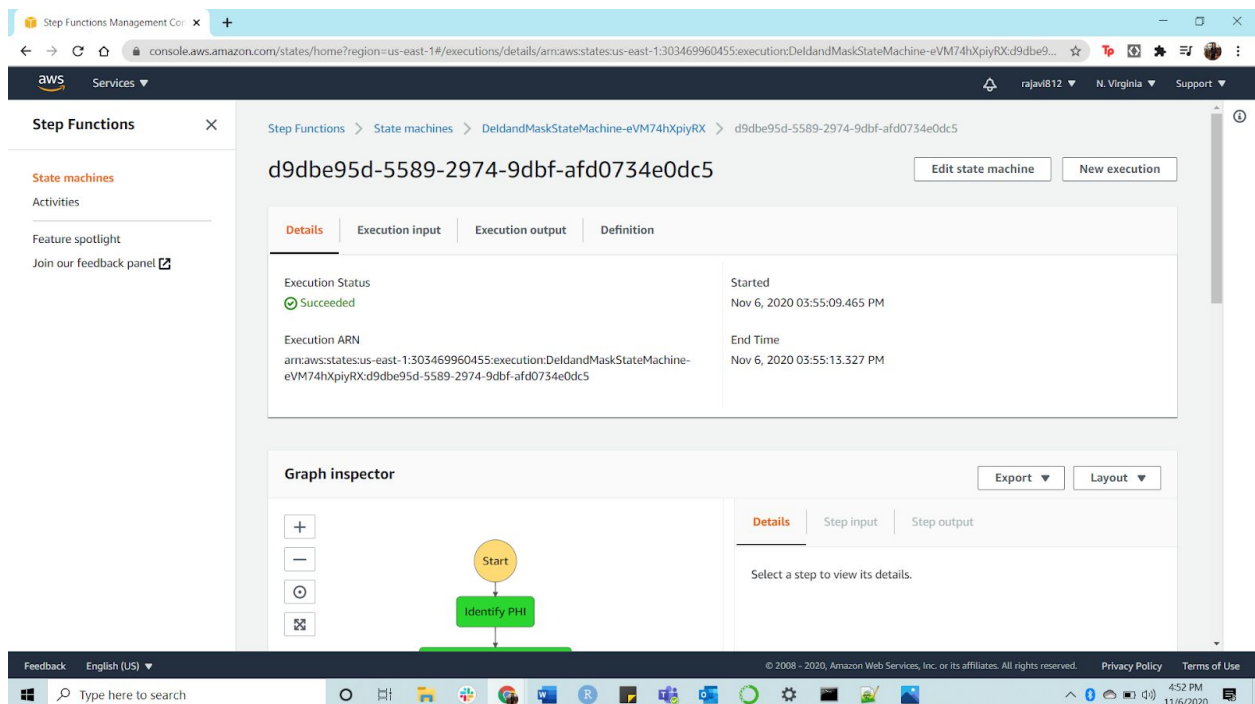
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Step 3: Execute the state machine by giving the input as json file



Step Functions Management Console

console.aws.amazon.com/states/home?region=us-east-1#/executions/details/amawsstates-us-east-1:303469960455:execution:DelidandMaskStateMachine-eVM74hXpiyRX:d9dbe9...

aws Services

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Step Functions

- State machines
- Activities
- Feature spotlight
- Join our feedback panel

Graph inspector

Export Layout

Details Step input Step output

Select a step to view its details.

```
graph TD; Start((Start)) --> IdentifyPHI[Identify PHI]; IdentifyPHI --> Choice[Anonymize Or De-identify]; Choice --> Anonymize[Anonymize]; Choice --> DeIdentify[De-identify]; Anonymize --> End((End)); DeIdentify --> End;
```

■ In Progress ■ Succeeded ■ Failed ■ Cancelled ■ Caught Error

Execution event history

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Step Functions Management Console

console.aws.amazon.com/states/home?region=us-east-1#/executions/details/amawsstates-us-east-1:303469960455:execution:DelidandMaskStateMachine-eVM74hXpiyRX:d9...

aws Services

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Step Functions

- State machines
- Activities
- Feature spotlight
- Join our feedback panel

■ In Progress ■ Succeeded ■ Failed ■ Cancelled ■ Caught Error

Execution event history

ID	Type	Step	Resource	Elapsed Time (ms)	Timestamp
▶ 1	ExecutionStarted		-	0	Nov 6, 2020 03:55:09.465 PM
▶ 2	TaskStateEntered	Identify PHI	-	46	Nov 6, 2020 03:55:09.511 PM
▶ 3	LambdaFunctionScheduled	Identify PHI	Lambda CloudWatch Logs	46	Nov 6, 2020 03:55:09.511 PM
▶ 4	LambdaFunctionStarted	Identify PHI	Lambda CloudWatch Logs	80	Nov 6, 2020 03:55:09.545 PM
▶ 5	LambdaFunctionSucceeded	Identify PHI	Lambda CloudWatch Logs	1511	Nov 6, 2020 03:55:10.976 PM
▶ 6	TaskStateExited	Identify PHI	-	1511	Nov 6, 2020 03:55:10.976 PM
▶ 7	ChoiceStateEntered	Anonymize Or De-identify	-	1521	Nov 6, 2020 03:55:10.986 PM
▶ 8	ChoiceStateExited	Anonymize Or De-identify	-	1521	Nov 6, 2020 03:55:10.986 PM
▶ 9	TaskStateEntered	De-identify	-	1621	Nov 6, 2020 03:55:11.086 PM
▶ 10	LambdaFunctionScheduled	De-identify	Lambda CloudWatch Logs	1621	Nov 6, 2020 03:55:11.086 PM
▶ 11	LambdaFunctionStarted	De-identify	Lambda CloudWatch Logs	1635	Nov 6, 2020 03:55:11.100 PM
▶ 12	LambdaFunctionSucceeded	De-identify	Lambda CloudWatch Logs	3862	Nov 6, 2020 03:55:13.327 PM
▶ 13	TaskStateExited	De-identify	-	3862	Nov 6, 2020 03:55:13.327 PM
▶ 14	ExecutionSucceeded		-	3862	Nov 6, 2020 03:55:13.327 PM

All events loaded

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Step 4: View the hashed values in the DynamoDB table

The screenshot displays the AWS DynamoDB console interface. The left sidebar shows the navigation menu with options like Dashboard, Tables, Backups, Reserved capacity, Preferences, DAX, and Events. The main content area is titled 'DeidentificationTable' and includes tabs for Overview, Items, Metrics, Alarms, Capacity, Indexes, Global Tables, Backups, Contributor insights, Triggers, Access control, and Tags. The 'Items' tab is selected, showing a list of items with columns for MessageHash, EntityHash, and Entity. The table contains 27 items, with the first few rows visible below.

MessageHash	EntityHash	Entity
4db42975ab9903e74443af296b7d215c81a36c851f6867b6dec36492ead110	0fc558c2a3eb0dce876c77d349cdf7724e78b2534b119fed959070459adc	ED
4db42975ab9903e74443af296b7d215c81a36c851f6867b6dec36492ead110	11b0f479511789b2adcaeb6352504d1efdb03bd230457d9e3d7cb0b949...	Diego
4db42975ab9903e74443af296b7d215c81a36c851f6867b6dec36492ead110	1c91f4b804d2e0bd7bb95c1ea8372da4bc3b56ce01ec84d820db09ed51fca	ED
4db42975ab9903e74443af296b7d215c81a36c851f6867b6dec36492ead110	2b17b98c3a4ff2a0300b711f02a6e5eb4263664b0977d942e0d5708622b2...	11/12/2011
4db42975ab9903e74443af296b7d215c81a36c851f6867b6dec36492ead110	307cb111bd0adde59b50fc54de429b0b208944b06bca4ed41c2da135c07f4d	Carlos
4db42975ab9903e74443af296b7d215c81a36c851f6867b6dec36492ead110	331e06d53e3b0603f9f47996277f1ce1ca2e63f99115f4da74f1089e63932fc	(770) 922-9800
4db42975ab9903e74443af296b7d215c81a36c851f6867b6dec36492ead110	3e0d7c3a8660ddfc8c6b161dd4f0eebe779662e47621000aa9d8c1a919fb...	Saamvi Sarkar
4db42975ab9903e74443af296b7d215c81a36c851f6867b6dec36492ead110	3f2a546be7c4e346b3a0ac137c8d8e254dd303d02b66b7772da4fe1ef4cfc3e	Emergency Department
4db42975ab9903e74443af296b7d215c81a36c851f6867b6dec36492ead110	44c580e62e5eff1a1b3f4c07114de3e9a61550f4ae9b6de1b1c5716a57d8cd2	Stay Free Medical Center
4db42975ab9903e74443af296b7d215c81a36c851f6867b6dec36492ead110	4a58b4bfecb78d206017113e9ccbdfe2b0e43ac0211b14954aa095e7004bc	RQ36114734
4db42975ab9903e74443af296b7d215c81a36c851f6867b6dec36492ead110	4ba567e864ab4b0170e8f51b0920940ba3868c390e01d7afae4c7514a520...	Carlos
4db42975ab9903e74443af296b7d215c81a36c851f6867b6dec36492ead110	4c2c762931b27c257c4475938c065977ac79c116d54d270f07e436c4e6775eb	50
4db42975ab9903e74443af296b7d215c81a36c851f6867b6dec36492ead110	553f8f7637bd54b150e2aaa483887a33ada49eb5e139a385a966abc2d659...	ED
4db42975ab9903e74443af296b7d215c81a36c851f6867b6dec36492ead110	564a0f02c711f699e4be8a4913e29d6a289442cc0abcc1cc3bb0f9d0874af1702	11/23/2011