

Lab Assignment-5

ECSE373L: Cloud Infrastructure and Services

Name: Tanvi Penumudy

Enroll no: E18CSE187

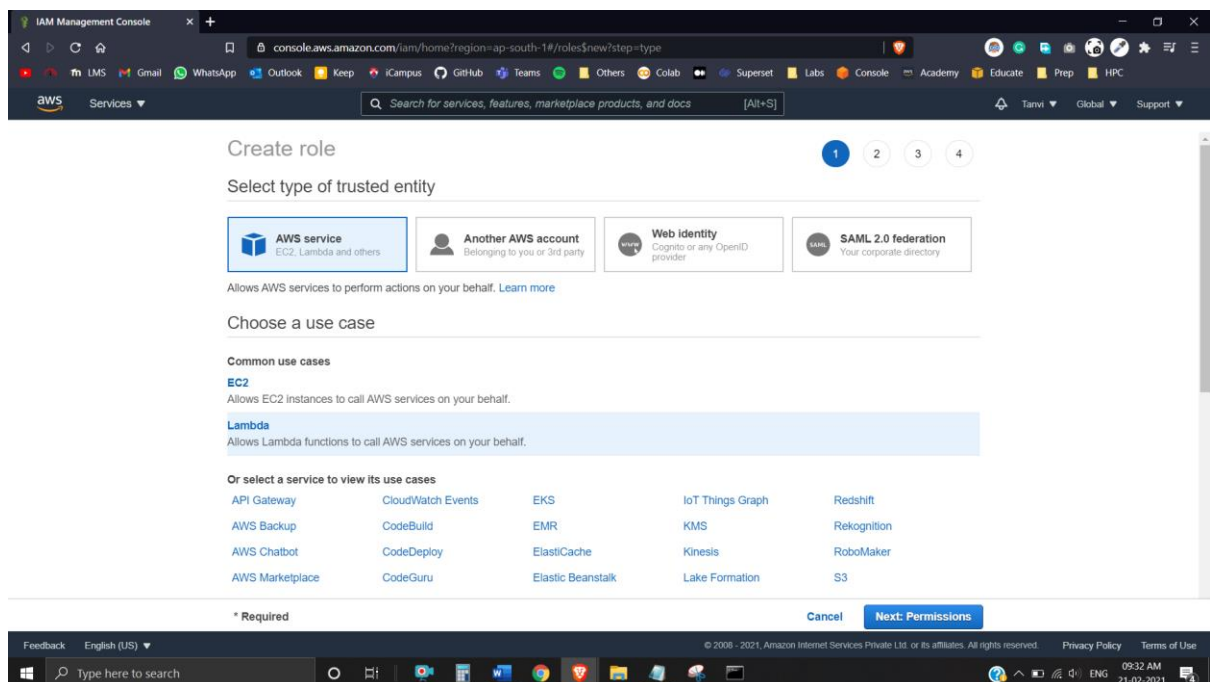
Batch: EB02

AWS Console Name: Tanvi

Lab Activities:

1. Create an AWS Step Function
2. Create Role for AWS Lambda functions
3. Create two AWS Lambda Functions and by using AWS Step Function make them work together by writing any your favourite code.
4. Test the AWS Step function by reviewing the output and code on the design panel.
5. Take the snapshot as your enrolment number_lab05 and upload it on LMS.

Implementation Screenshots (Step-by-Step):



IAM Management Console

console.aws.amazon.com/iam/home?region=ap-south-1#/roles\$new?step=permissions&commonUseCase=Lambda%2BLa...

Create role

1 2 3 4

▼ Attach permissions policies

Choose one or more policies to attach to your new role.

Create policy

Filter policies Showing 21 results

	Policy name	Used as
<input type="checkbox"/>	AmazonLambdaRolePolicyForLaunchWizardSAP	None
<input type="checkbox"/>	AWSApplicationAutoscalingLambdaConcurrencyPolicy	None
<input type="checkbox"/>	AWSCodeDeployRoleForLambda	None
<input type="checkbox"/>	AWSCodeDeployRoleForLambdaLimited	None
<input type="checkbox"/>	AWSDeepLensLambdaFunctionAccessPolicy	None
<input type="checkbox"/>	AWSLambda_FullAccess	None
<input type="checkbox"/>	AWSLambda_ReadOnlyAccess	None
<input checked="" type="checkbox"/>	AWSLambdaBasicExecutionRole	None

► Set permissions boundary

* Required

Cancel Previous Next: Tags

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09:33 AM 21-02-2021

IAM Management Console

console.aws.amazon.com/iam/home?region=ap-south-1#/roles\$new?step=permissions&commonUseCase=Lambda%2BLa...

Create role

1 2 3 4

▼ Attach permissions policies

Choose one or more policies to attach to your new role.

Create policy

Filter policies Showing 1 result

	Policy name	Used as
<input checked="" type="checkbox"/>	CloudWatchFullAccess	None

► Set permissions boundary

* Required

Cancel Previous Next: Tags

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IAM Management Console

console.aws.amazon.com/iam/home?region=ap-south-1#/roles\$new?step=review&commonUseCase=Lambda%2BLambda...

Create role

1 2 3 4

Review

Provide the required information below and review this role before you create it.

Role name* Lab5E18CSE187CIS
Use alphanumeric and '+', '@', '_' characters. Maximum 64 characters.

Role description
Allows Lambda functions to call AWS services on your behalf.
Maximum 1000 characters. Use alphanumeric and '+', '@', '_' characters.

Trusted entities AWS service: lambda.amazonaws.com

Policies
 AWSLambdaBasicExecutionRole [↗](#)
 CloudWatchFullAccess [↗](#)

Permissions boundary Permissions boundary is not set

No tags were added.

* Required

Cancel Previous **Create role**

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IAM Management Console

console.aws.amazon.com/iam/home?region=ap-south-1#/roles

Identity and Access Management (IAM)

Dashboard

- Access management
 - Groups
 - Users
 - Roles**
 - Policies
 - Identity providers
 - Account settings
- Access reports
 - Access analyzer
 - Archive rules
 - Analyzers
 - Settings
 - Credential report
 - Organization activity
 - Service control policies (SCPs)

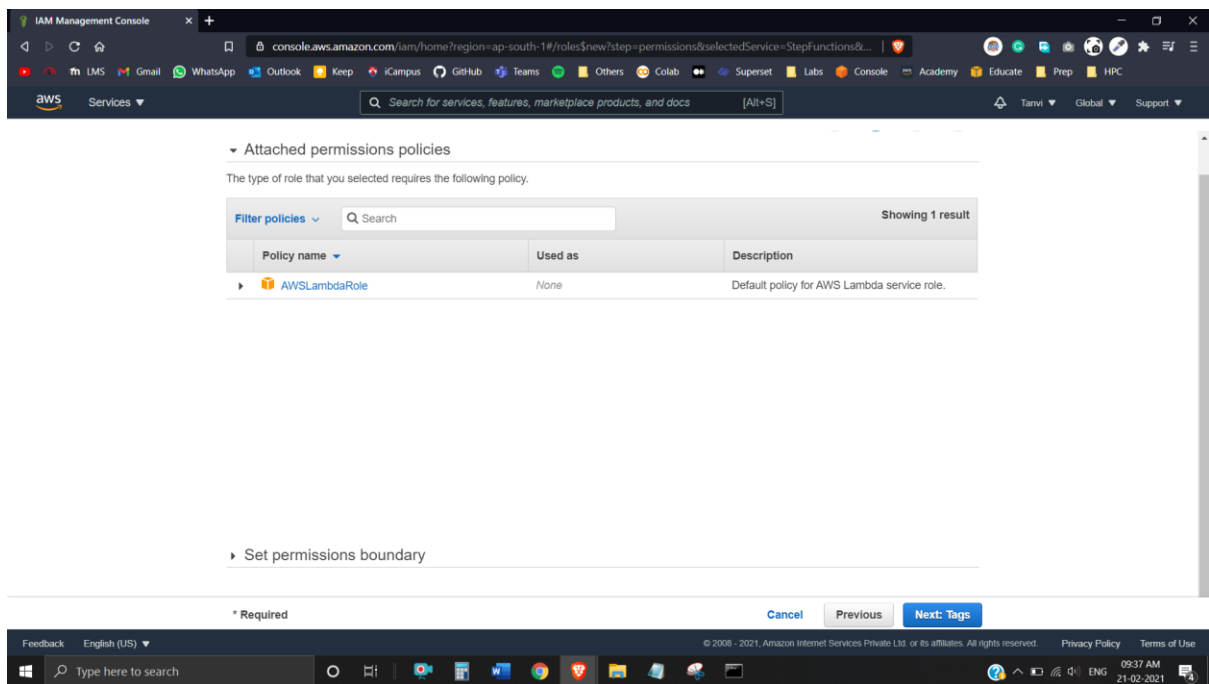
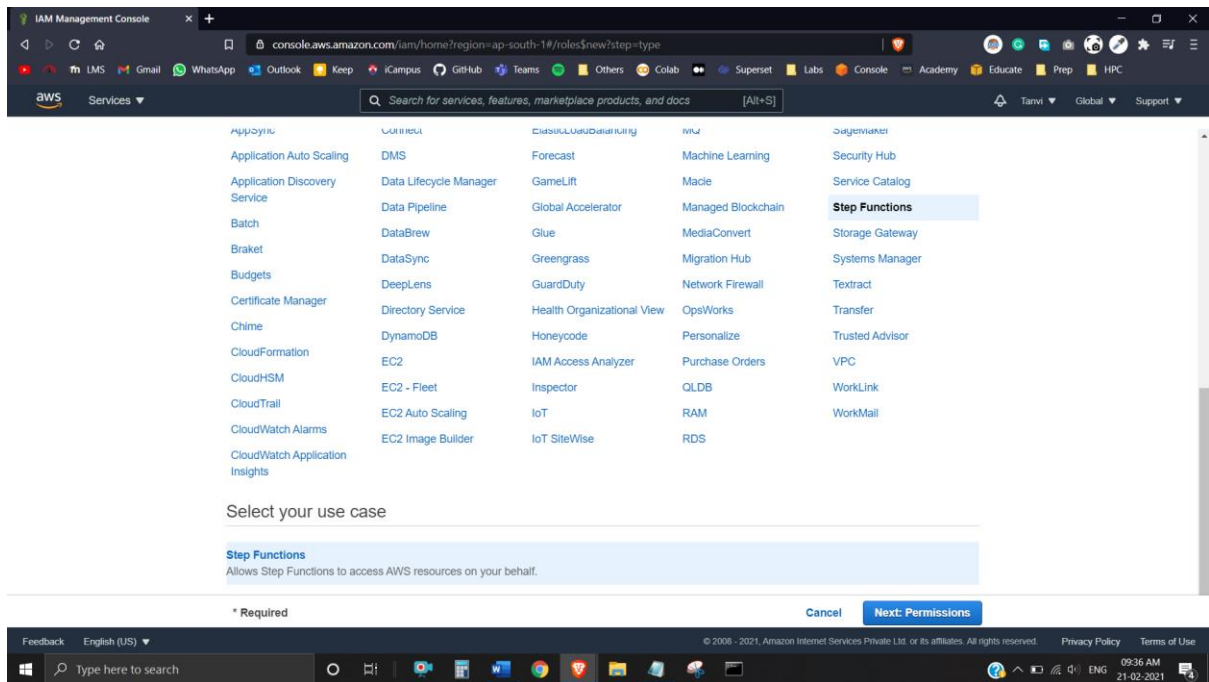
Create role Delete role

Search Showing 3 results

Role name	Trusted entities	Last activity
<input type="checkbox"/> AWSServiceRoleForSupport	AWS service: support (Service-Linked role)	122 days
<input type="checkbox"/> AWSServiceRoleForTrustedAdvisor	AWS service: trustedadvisor (Service-Linked ...)	None
<input type="checkbox"/> Lab5E18CSE187CIS	AWS service: lambda	None

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IAM Management Console

console.aws.amazon.com/iam/home?region=ap-south-1#/roles\$new?step=review&selectedService=StepFunctions&select...

Create role

1 2 3 4

Review

Provide the required information below and review this role before you create it.

Role name* Lab5E18CSE187StepFunction
Use alphanumeric and '+', '@', '_' characters. Maximum 64 characters.

Role description
Allows Step Functions to access AWS resources on your behalf.
Maximum 1000 characters. Use alphanumeric and '+', '@', '_' characters.

Trusted entities AWS service: states.amazonaws.com

Policies [AWSLambdaRole](#)

Permissions boundary Permissions boundary is not set

No tags were added.

* Required

Cancel Previous **Create role**

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IAM Management Console

console.aws.amazon.com/iam/home?region=ap-south-1#/roles

Identity and Access Management (IAM)

Dashboard

- Access management
 - Groups
 - Users
 - Roles**
 - Policies
 - Identity providers
 - Account settings
- Access reports
 - Access analyzer
 - Archive rules
 - Analyzers
 - Settings
 - Credential report
 - Organization activity
 - Service control policies (SCPs)

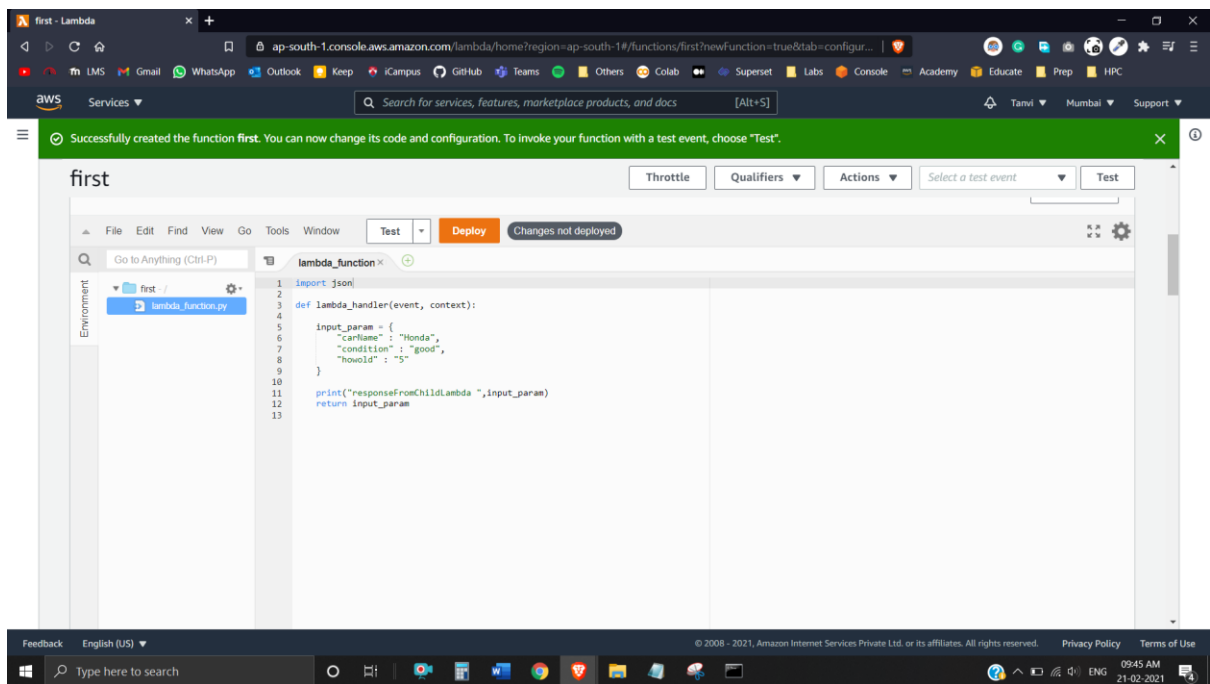
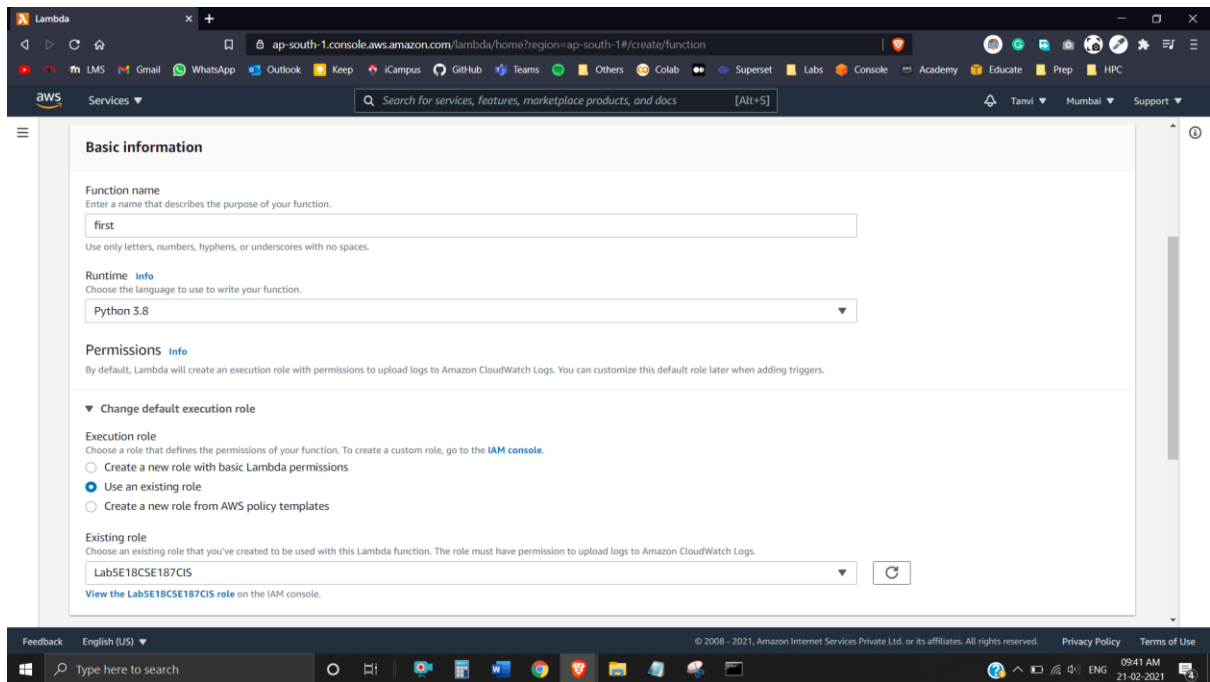
Create role Delete role

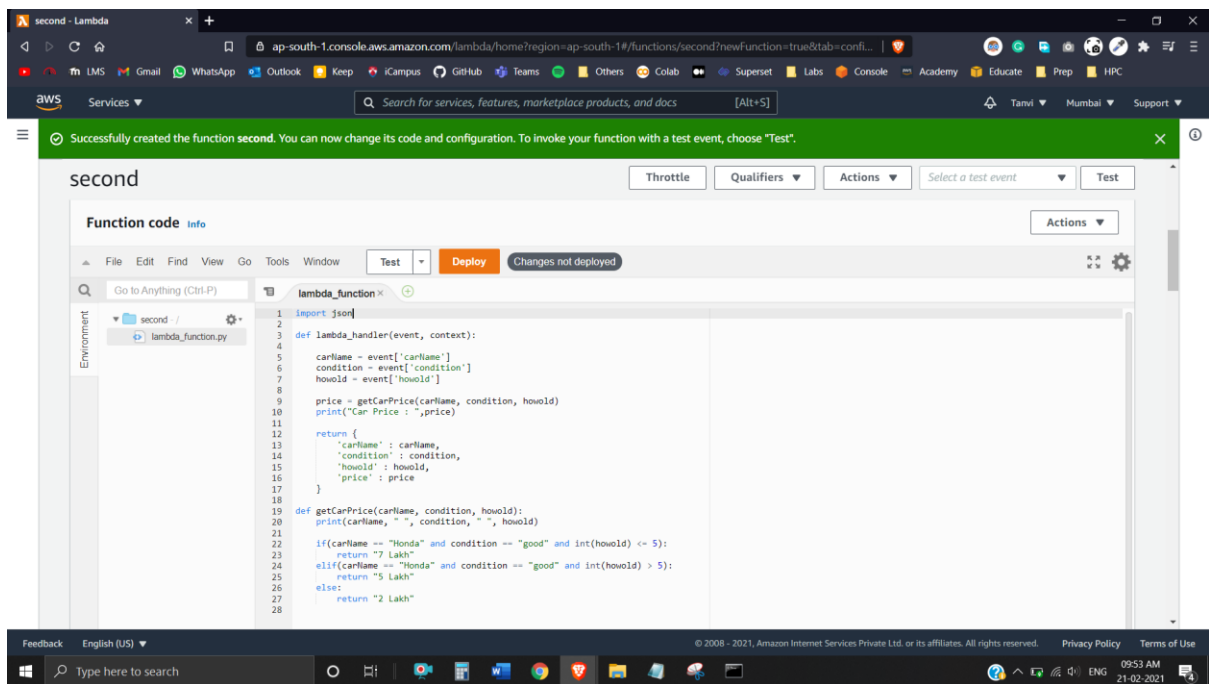
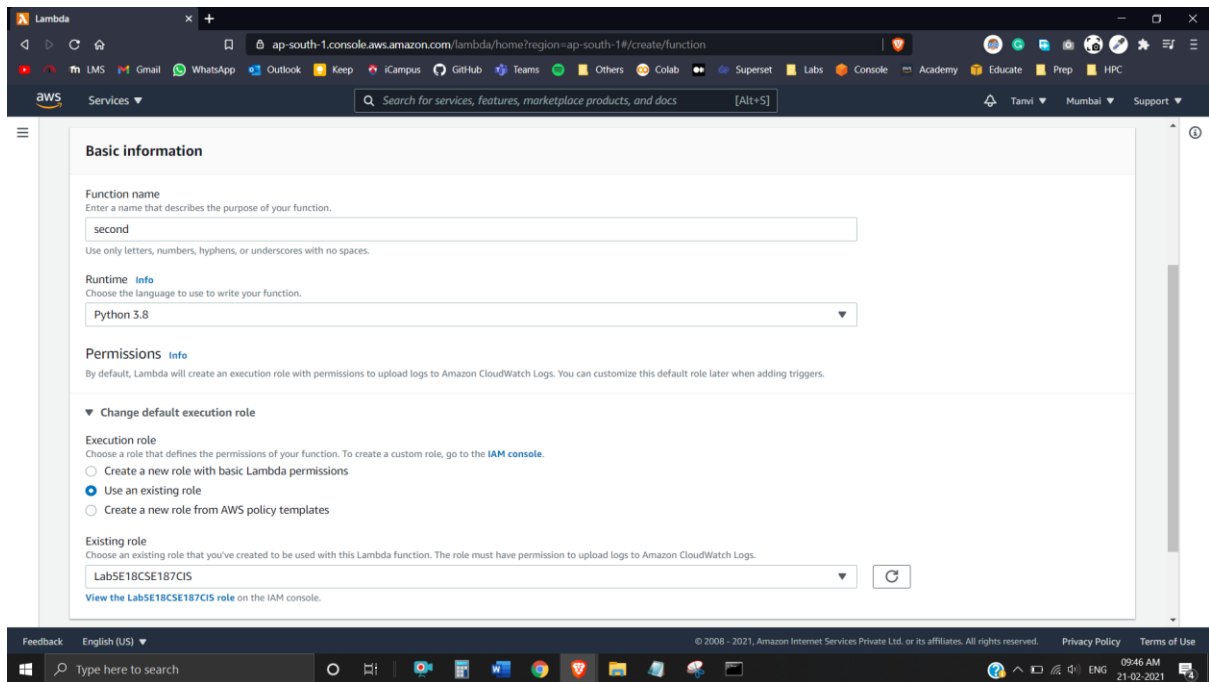
Search Showing 4 results

Role name	Trusted entities	Last activity
<input type="checkbox"/> AWSServiceRoleForSupport	AWS service: support (Service-Linked role)	122 days
<input type="checkbox"/> AWSServiceRoleForTrustedAdvisor	AWS service: trustedadvisor (Service-Linked ...)	None
<input type="checkbox"/> Lab5E18CSE187CIS	AWS service: lambda	None
<input type="checkbox"/> Lab5E18CSE187StepFunction	AWS service: states	None

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Step Functions Management Console | first - Lambda

ap-south-1.console.aws.amazon.com/states/home?region=ap-south-1#/statemachines/edit/amaws:statesap-south-1:634...

Definition

Generate code snippet | Format JSON

```
1 {
2   "Comment": "A Hello World example of the Amazon States Language using Pass states",
3   "StartAt": "First",
4   "States": {
5     "First": {
6       "Type": "Task",
7       "Resource": "arn:aws:lambda:ap-south-1:634102821134:function:first",
8       "Next": "Second"
9     },
10    "Second": {
11      "Type": "Task",
12      "Resource": "arn:aws:lambda:ap-south-1:634102821134:function:second",
13      "End": true
14    }
15  }
16 }
```

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Step Functions Management Console | second - Lambda

ap-south-1.console.aws.amazon.com/states/home?region=ap-south-1#/statemachines/create

Specify details

Step 1: Define state machine | Step 2: Specify details

Name

State machine name

StepFunctionE18CSE187

Must be 1-80 characters. Can use alphanumeric characters, dashes, or underscores.

Permissions

Execution role

The IAM role that defines which resources your state machine has permission to access during execution. To create a custom role, go to the [IAM console](#).

☐ Create new role
Let Step Functions create a new role for you based on your state machine's definition and configuration details.

☒ Choose an existing role

☐ Enter a role ARN

Existing roles

Lab5E18CSE187StepFunction

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Step Functions Management Console | second - Lambda

ap-south-1.console.aws.amazon.com/states/home?region=ap-south-1#/statemachines/view/arn:aws:states:ap-south-1:634102821134:stateMachine:StepFunctionE18CSE187

StepFunctionE18CSE187

Edit Start execution Delete Actions

Details

ARN arn:aws:states:ap-south-1:634102821134:stateMachine:StepFunctionE18CSE187	Type Standard
IAM role ARN arn:aws:iam::634102821134:role/Lab5E18CSE187StepFunction	Creation date Feb 21, 2021 10:00:42.394 AM

Executions Logging Definition Tags

Executions (0) View details Stop execution Start execution

Search for executions Filter by status

Name	Status	Started	End Time
No executions			

Start execution

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Step Functions Management Console | second - Lambda

ap-south-1.console.aws.amazon.com/states/home?region=ap-south-1#/statemachines/view/arn:aws:states:ap-south-1:634102821134:stateMachine:StepFunctionE18CSE187

StepFunctionE18CSE187

Edit Start execution Delete Actions

Start execution

Start an execution using the latest definition of the state machine. [Learn more](#)

Name - optional
d038336f-b965-04e3-16b5-a4f5688a81d6

Input - optional
Enter input values for this execution in JSON format

```
1 {  
2   "Comment": "Insert your JSON here"  
3 }
```

☐ Open in a new browser tab Cancel Start execution

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Step Functions Management Console | first - Lambda


ap-south-1.console.aws.amazon.com/states/home?region=ap-south-1#/executions/details/arn:aws:states:ap-south-1:6341...

Graph inspector

Export Layout

Details Step input Step output

Select a step to view its details.



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Step Functions Management Console | first - Lambda

ap-south-1.console.aws.amazon.com/states/home?region=ap-south-1#/executions/details/arn:aws:states:ap-south-1:6341...

Graph inspector

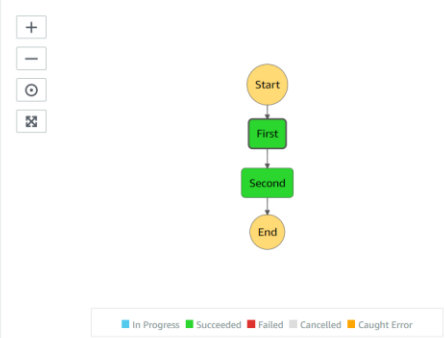
Export Layout

Details Step input Step output

Name First Type Task

Status ✔ Succeeded

Resource [arn:aws:lambda:ap-south-1:634102821134:function:first](#) | [CloudWatch Logs](#)



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Step Functions Management Console | first - Lambda

ap-south-1.console.aws.amazon.com/states/home?region=ap-south-1#/executions/details/amawsstatesap-south-1:6341...

Graph inspector

Export Layout

```
graph TD; Start((Start)) --> First[First]; First --> Second[Second]; Second --> End((End));
```

Legend: In Progress (blue square), Succeeded (green square), Failed (red square), Cancelled (grey square), Caught Error (orange square)

Details | **Step input** | Step output

```
1 {  
2   "Comment": "Insert your 350N here"  
3 }
```

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Step Functions Management Console | first - Lambda

ap-south-1.console.aws.amazon.com/states/home?region=ap-south-1#/executions/details/amawsstatesap-south-1:6341...

Graph inspector

Export Layout

```
graph TD; Start((Start)) --> First[First]; First --> Second[Second]; Second --> End((End));
```

Legend: In Progress (blue square), Succeeded (green square), Failed (red square), Cancelled (grey square), Caught Error (orange square)

Details | Step input | **Step output**

```
1 {  
2   "carName": "Honda",  
3   "condition": "good",  
4   "howold": "5"  
5 }
```

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Step Functions Management Console | first - Lambda

ap-south-1.console.aws.amazon.com/states/home?region=ap-south-1#/executions/details/armawsstates:ap-south-1:6341...

Graph inspector

Export Layout

```
graph TD; Start((Start)) --> First[First]; First --> Second[Second]; Second --> End((End));
```

Legend: In Progress (blue), Succeeded (green), Failed (red), Cancelled (grey), Caught Error (orange)

Details	
Name	Type
Second	Task
Status	Succeeded
Resource	arn:aws:lambda:ap-south-1:634102821134:function:second CloudWatch Logs

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Step Functions Management Console | first - Lambda

ap-south-1.console.aws.amazon.com/states/home?region=ap-south-1#/executions/details/armawsstates:ap-south-1:6341...

Graph inspector

Export Layout

```
graph TD; Start((Start)) --> First[First]; First --> Second[Second]; Second --> End((End));
```

Legend: In Progress (blue), Succeeded (green), Failed (red), Cancelled (grey), Caught Error (orange)

Step input	
<pre>1 { 2 "carName": "Honda", 3 "condition": "good", 4 "howold": "5", 5 }</pre>	

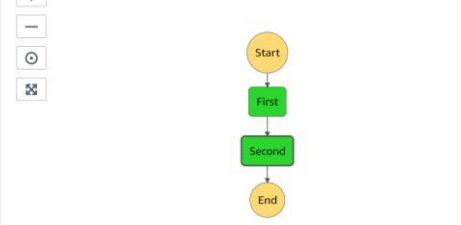
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Step Functions Management Console | first - Lambda

ap-south-1.console.aws.amazon.com/states/home?region=ap-south-1#/executions/details/arn:aws:states:ap-south-1:6341...

Graph inspector

Export Layout



```
graph TD; Start((Start)) --> First[First]; First --> Second[Second]; Second --> End((End));
```

Legend: In Progress (blue square), Succeeded (green square), Failed (red square), Cancelled (grey square), Caught Error (orange square)

Details | Step input | **Step output**

```
1 {
2   "carName": "Honda",
3   "condition": "good",
4   "howold": "5",
5   "price": "7 Lakh"
6 }
```

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Step Functions Management Console | first - Lambda

ap-south-1.console.aws.amazon.com/lambda/home?region=ap-south-1#/functions/first?tab=configuration

first

Throttle Qualifiers Actions Select a test event Test

Function code Info

Actions

File Edit Find View Go Tools Window Test Deploy **Changes deployed**

Go to Anything (Ctrl-P)

Environment

- first /
- lambda_function.py

```
1 import json
2
3 def lambda_handler(event, context):
4
5     carName = event['carName']
6     condition = event['condition']
7     howold = event['howold']
8
9     print("From Parent Lambda ", carName, " ", condition, " ", howold)
10
11     input_param = {
12         "carName": carName,
13         "condition": condition,
14         "howold": howold
15     }
16
17     print("responseFromChildLambda ", input_param)
18     return input_param
19
```

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Step Functions Management Console | first - Lambda

ap-south-1.console.aws.amazon.com/states/home?region=ap-south-1#/executions/details/amawsstates:ap-south-1:6341...

d6425f13-0271-bcf8-aea0-7f2d06d7285d

Edit state machine | New execution | Stop execution

Start execution

Start an execution using the latest definition of the state machine. [Learn more](#)

Name - optional

80b24846-1b73-6e97-1e7f-197bb5bb7ae5

Input - optional

Enter input values for this execution in JSON format

```
1 {
2   "carName": "Tata",
3   "condition": "good",
4   "howold": "4"
5 }
```

Open in a new browser tab

Cancel | Start execution

Step Functions Management Console | first - Lambda

ap-south-1.console.aws.amazon.com/states/home?region=ap-south-1#/executions/details/amawsstates:ap-south-1:6341...

Search for services, features, marketplace products, and docs [Alt+S]

Graph inspector

Export | Layout

Details | Step input | Step output

```
1 {
2   "carName": "Tata",
3   "condition": "good",
4   "howold": "4"
5 }
```

Start

First

Second

End

In Progress | Succeeded | Failed | Cancelled | Caught Error

Execution event history

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Step Functions Management Console

ap-south-1.console.aws.amazon.com/states/home?region=ap-south-1#/executions/details/arn:aws:states:ap-south-1:6341...

Graph inspector

Export Layout

Start → First → Second → End

Legend: In Progress (blue), Succeeded (green), Failed (red), Cancelled (grey), Caught Error (yellow)

Details | Step input | **Step output**

```
1 {  
2   "carName": "Tata",  
3   "condition": "good",  
4   "howold": "4"  
5 }
```

Execution event history

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Step Functions Management Console

ap-south-1.console.aws.amazon.com/states/home?region=ap-south-1#/executions/details/arn:aws:states:ap-south-1:6341...

Graph inspector

Export Layout

Start → First → Second → End

Legend: In Progress (blue), Succeeded (green), Failed (red), Cancelled (grey), Caught Error (yellow)

Details | **Step input** | Step output

```
1 {  
2   "carName": "Tata",  
3   "condition": "good",  
4   "howold": "4"  
5 }
```

Execution event history

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Step Functions Management Console

ap-south-1.console.aws.amazon.com/states/home?region=ap-south-1#/executions/details/arn:aws:states:ap-south-1:6341...

Search for services, features, marketplace products, and docs [Alt+S]

Graph inspector

Export Layout

Details Step input **Step output**

```
1 {  
2   "carName": "Tata",  
3   "condition": "good",  
4   "howold": "4",  
5   "price": "2 Lakh"  
6 }
```

Start
First
Second
End

In Progress Succeeded Failed Cancelled Caught Error

Execution event history

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