# Lambda Functions

## GetCurrencyDetailsFunction

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| --- |
| import json  import http.client  def lambda\_handler(event, context):  connection = http.client.HTTPSConnection('api.coinbase.com')  connection.request('GET', '/v2/currencies')  response = connection.getresponse()  output = json.loads(response.read())  #print(output)    #print(event['currencies'])  #currencies = event['currencies']  currencies = event    #currencies = ["AED", "USD", "AFN"]  #print(currencies)    desiredOutput1=[]    for k in output['data']:  for y in currencies:  if k['id'] == y:  desiredOutput={}  desiredOutput['id'] = str(k['id'])  desiredOutput['name'] = str(k['name'])  desiredOutput1.append(desiredOutput)    json\_list = json.dumps(desiredOutput1)  print(json\_list)    return json\_list |

## USPopulationYearFunction

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| --- |
| import json  import http.client  def lambda\_handler(event, context):  connection = http.client.HTTPSConnection('datausa.io')  connection.request('GET', '/api/data?drilldowns=Nation&measures=Population')  response = connection.getresponse()  output = json.loads(response.read())  #print(output)    #print(event['currencies'])  #USPopulationYear = event['USPopulationYear']  USPopulationYear = event    #USPopulationYear = ["2019","2016"]  #print(USPopulationYear)    desiredOutput1=[]    for k in output['data']:  for y in USPopulationYear:  if k['Year'] == y:  desiredOutput={}  desiredOutput['Year'] = str(k['Year'])  desiredOutput['Nation'] = str(k['Nation'])  desiredOutput['Population'] = str(k['Population'])  desiredOutput1.append(desiredOutput)    json\_list = json.dumps(desiredOutput1)  print(json\_list)    return json\_list |

## IAM Role

[AWSLambdaBasicExecutionRole-5e8d973b-e9cc-46e8-b99d-84dc72ec782e](https://us-east-1.console.aws.amazon.com/iam/home#/policies/arn:aws:iam::644032760753:policy/service-role/AWSLambdaBasicExecutionRole-5e8d973b-e9cc-46e8-b99d-84dc72ec782e)

# Free APis

**US Population**: <https://datausa.io/api/data?drilldowns=Nation&measures=Population>

**Currencies**: <https://api.coinbase.com/v2/currencies>

# Step Functions (Type Express)

## 3.1 CurrencyDetailsAndPopulationExpressAPI

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| --- |
| {  "Comment": "Receive Input from the Client to get Currency and US Population Details",  "StartAt": "Pass",  "States": {  "Pass": {  "Type": "Pass",  "Comment": "Receive input from API Gateway",  "Next": "Parallel"  },  "Parallel": {  "Type": "Parallel",  "Next": "Pass (1)",  "Branches": [  {  "StartAt": "GetCurrencyDetailsFunction",  "States": {  "GetCurrencyDetailsFunction": {  "Type": "Task",  "Resource": "arn:aws:lambda:us-west-1:644032760753:function:GetCurrencyDetailsFunction",  "Retry": [  {  "ErrorEquals": [  "States.ALL"  ],  "BackoffRate": 1,  "IntervalSeconds": 1,  "MaxAttempts": 2  }  ],  "End": true,  "InputPath": "$.currencies"  }  }  },  {  "StartAt": "USPopulationYearFunction",  "States": {  "USPopulationYearFunction": {  "Type": "Task",  "Resource": "arn:aws:lambda:us-west-1:644032760753:function:USPopulationYearFunction",  "End": true,  "Retry": [  {  "ErrorEquals": [  "States.ALL"  ],  "BackoffRate": 1,  "IntervalSeconds": 1,  "MaxAttempts": 2  }  ],  "InputPath": "$.USPopulationYear"  }  }  }  ]  },  "Pass (1)": {  "Type": "Pass",  "End": true  }  }  } |

## 3.2 State Function Input

Combined input in StateFunction:

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| --- |
| {  "currencies": [ "INR", "USD" ],  "USPopulationYear": [ "2019", "2016" ]  } |

## 3.3 IAM Role:

StepFunctions-CurrencyDetailsAndPopulationExpressA-role-4504af08

Graphical user interface, text, application, email

Description automatically generated

# Create API Gateway (HTTP API)

Graphical user interface, application, Teams

Description automatically generated

# Postman

Graphical user interface, text, application, email

Description automatically generated

|  |
| --- |
| {    "input": {  "currencies": [   "INR",    "USD"  ],                "USPopulationYear": [ "2019", "2016" ]}  } |