SAM

- Sam init
- Sam build
- Sam deploy –guided

->made changes to app.py- added code for dynamodb crud operations.

```python
import boto3
import json

# define the DynamoDB table that Lambda will connect to
tableName = "lambda-apigateway"

# create the DynamoDB resource
dynamo = boto3.resource('dynamodb').Table(tableName)

print('Loading function')

def lambda_handler(event, context):
    print(event)


    # define the functions used to perform the CRUD operations
    def ddb_create(x):
        dynamo.put_item(**x)
        return x

    def ddb_read(x):
        dynamo.get_item(**x)
        return x

    def ddb_update(x):
        dynamo.update_item(**x)
        return x

    def ddb_delete(x):
        dynamo.delete_item(**x)


    def echo(x):
```

```python
        return x

    operation = event['operation']

    operations = {
        'create': ddb_create,
        'read': ddb_read,
        'update': ddb_update,
        'delete': ddb_delete,
        'echo': echo,
    }

    if operation in operations:
        return operations[operation](event.get('payload'))
    else:
        raise ValueError('Unrecognized operation "{}"'.format(operation))
```

-> below template file- added methods of api on this

```yaml
AWSTemplateFormatVersion: '2010-09-09'
Transform: AWS::Serverless-2016-10-31
Description: >
  march

  Sample SAM Template for march

# More info about Globals:
https://github.com/awslabs/serverless-application-model/blob/master/docs/globals.rst
Globals:
  Function:
    Timeout: 3
    MemorySize: 128

Resources:
  HelloWorldFunction:
```

```yaml
    Type: AWS::Serverless::Function # More info about Function Resource:
https://github.com/awslabs/serverless-application-model/blob/master/versio
ns/2016-10-31.md#awsserverlessfunction
    Properties:
      CodeUri: hello_world/
      FunctionName: april
      Handler: app.lambda_handler
      Runtime: python3.9
      Architectures:
      - x86_64
      Events:
        HelloWorldget:
          Type: Api # More info about API Event Source:
https://github.com/awslabs/serverless-application-model/blob/master/versio
ns/2016-10-31.md#api
          Properties:
            Path: /hello
            Method: get
        HelloWorldpost:
          Type: Api # More info about API Event Source:
https://github.com/awslabs/serverless-application-model/blob/master/versio
ns/2016-10-31.md#api
          Properties:
            Path: /hello
            Method: post
        HelloWorlddelete:
          Type: Api # More info about API Event Source:
https://github.com/awslabs/serverless-application-model/blob/master/versio
ns/2016-10-31.md#api
          Properties:
            Path: /hello
            Method: delete
        HelloWorldput:
          Type: Api # More info about API Event Source:
https://github.com/awslabs/serverless-application-model/blob/master/versio
ns/2016-10-31.md#api
          Properties:
            Path: /hello
            Method: put
```

```yaml
  ApplicationResourceGroup:
    Type: AWS::ResourceGroups::Group
    Properties:
      Name:
        Fn::Join:
        - ''
        - - ApplicationInsights-SAM-
          - Ref: AWS::StackName
      ResourceQuery:
        Type: CLOUDFORMATION_STACK_1_0
  ApplicationInsightsMonitoring:
    Type: AWS::ApplicationInsights::Application
    Properties:
      ResourceGroupName:
        Fn::Join:
        - ''
        - - ApplicationInsights-SAM-
          - Ref: AWS::StackName
      AutoConfigurationEnabled: 'true'
    DependsOn: ApplicationResourceGroup
Outputs:
  # ServerlessRestApi is an implicit API created out of Events key under
Serverless::Function
  # Find out more about other implicit resources you can reference within
SAM
  #
https://github.com/awslabs/serverless-application-model/blob/master/docs/i
nternals/generated_resources.rst#api
  HelloWorldApi:
    Description: API Gateway endpoint URL for Prod stage for Hello World
function
    Value: !Sub
"https://${ServerlessRestApi}.execute-api.${AWS::Region}.amazonaws.com/Pro
d/hello/"
  HelloWorldFunction:
    Description: Hello World Lambda Function ARN
    Value: !GetAtt HelloWorldFunction.Arn
```

```
  HelloWorldFunctionIamRole:
    Description: Implicit IAM Role created for Hello World function
    Value: !GetAtt HelloWorldFunctionRole.Arn
```

Then built and deployed.

-> testing from postman->https://vxncq06gak.execute-api.ap-northeast-1.amazonaws.com/Prod/hello/

With body has {

```
 "operation": "create",
 "payload": {
  "Item": {
   "id": "1234ABCD118881",
   "number": 52
  }
 }
}
```

Dynamo db table

id	number
1234ABCD111	5
1234ABCD	5
1234ABCD118881	52
0007777	52

Items returned (4)   Actions ▼   Create item

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