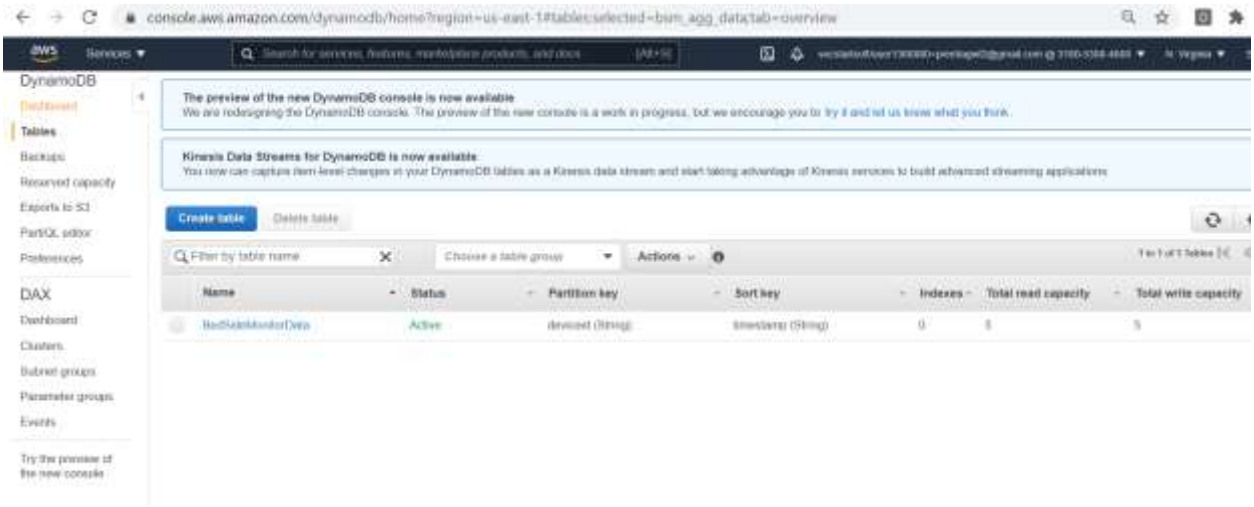
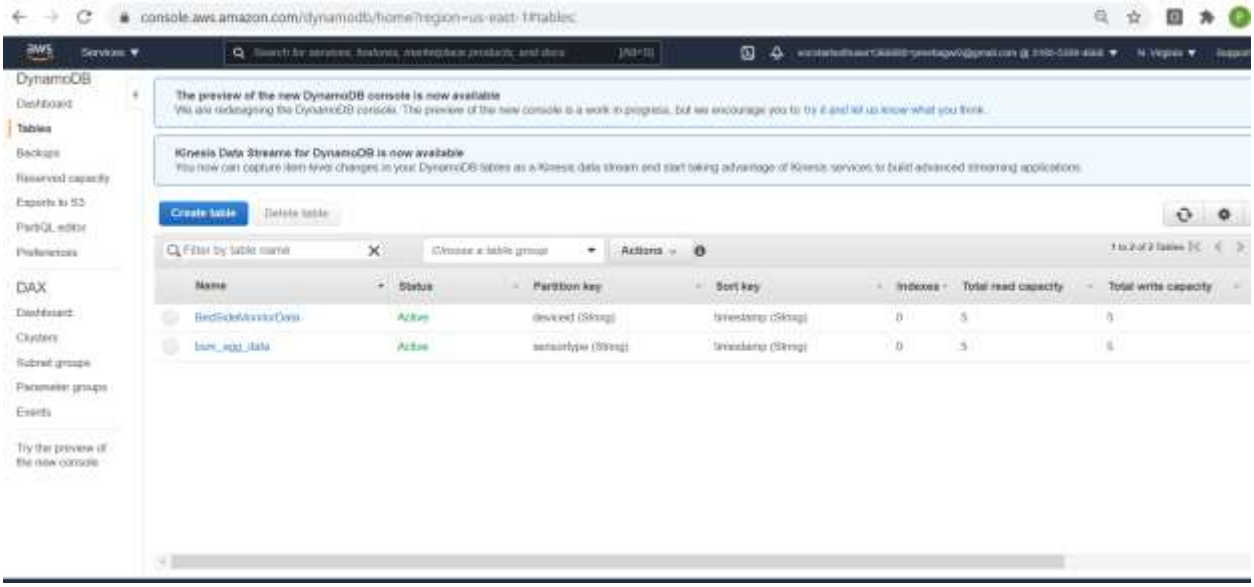
CREATION OF TABLE 'bsm_agg_data'





DEMONSTRATION OF FETCHING ALL THE DATA FROM TABLE

```
def fetch_all():
    print ('Fetching all data from the DynamoDB table')
    table = dynamodb.Table('BedSideMonitorData')
    response = table.scan()
    for item in response['Items']:
        print (item)
    print('Total items in the table are ', response['Count'])


def update_data(deviceid, timestamp, val):
    print ('Update data in DynamoDB table')
    table = dynamodb.Table('BedSideMonitorData')

if __name__ == '__main__'
```

ManageDynameDB

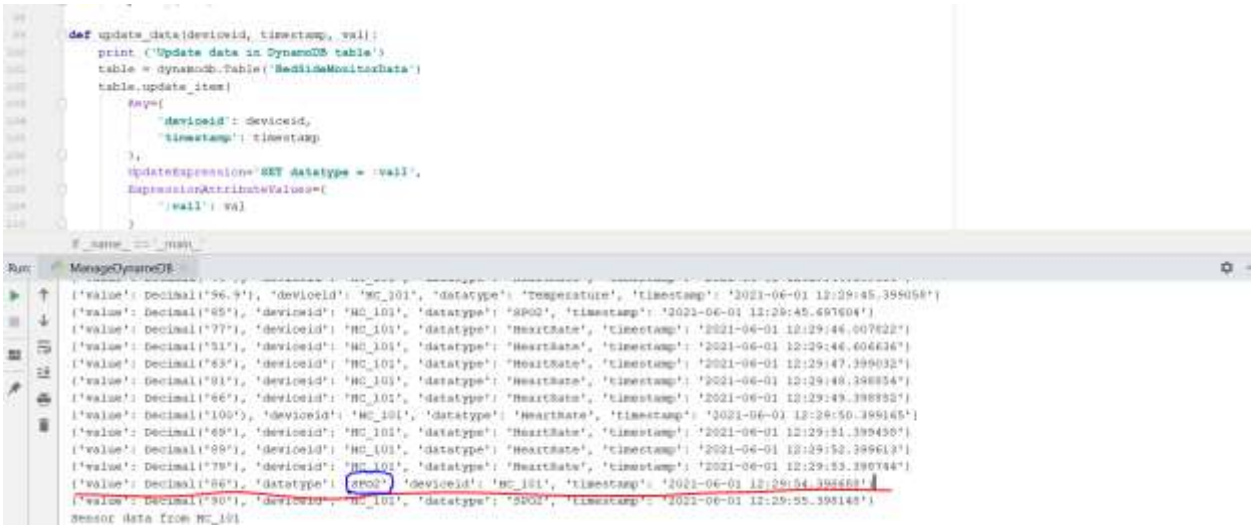
```
{'value': Decimal('81'), 'deviceid': 'HC_101', 'datatype': 'HeartRate', 'timestamp': '2021-06-01 12:29:48.398854'}
{'value': Decimal('66'), 'deviceid': 'HC_101', 'datatype': 'HeartRate', 'timestamp': '2021-06-01 12:29:49.398852'}
{'value': Decimal('100'), 'deviceid': 'HC_101', 'datatype': 'HeartRate', 'timestamp': '2021-06-01 12:29:50.399165'}
{'value': Decimal('69'), 'deviceid': 'HC_101', 'datatype': 'HeartRate', 'timestamp': '2021-06-01 12:29:51.399458'}
{'value': Decimal('89'), 'deviceid': 'HC_101', 'datatype': 'HeartRate', 'timestamp': '2021-06-01 12:29:52.399613'}
{'value': Decimal('86'), 'datatype': 'SPO2', 'deviceid': 'HC_101', 'timestamp': '2021-06-01 12:29:54.398688'}
{'value': Decimal('90'), 'deviceid': 'HC_101', 'datatype': 'SPO2', 'timestamp': '2021-06-01 12:29:55.398140'}
{'value': Decimal('96'), 'datatype': 'Temp', 'deviceid': 'HC_101', 'timestamp': '6/2/2021'}
Total items in the table are  14032

Process finished with exit code 0
```

DEMONSTRATION OF UPDATE FUNCTION

(i) Before update

(ii) After update



DEMONSTRATION OF DELETE FUNCTIONALITY

(i) Before delete

```
def delete_data(deviceid, timestamp):
    print ('Delete data in DynamoDB table')
    table = dynamodb.Table('BedSideMonitorData')
    table.delete_item(
        Key={
            'deviceid': deviceid,
            'timestamp': timestamp
        },
    )
    print ('Item deleted left in the table are ', table.item_count)

if __name__ == '__main__':
    deviceid = 'HC_101'
    insert_BSM_data('Temp', '6/21/2021', deviceid,96)
    fetch_all()
    update_data('HC_101', '2021-06-01 12:29:54.398688' , 'SPO2')
    delete_data('HC_101', '2021-06-01 12:29:53.398744')
```

if __name__ == '__main__'

ManageDynamoDB

```
{'value': Decimal('66'), 'deviceid': 'HC_101', 'datatype': 'HeartRate', 'timestamp': '2021-06-01 12:29:49.398852'}
{'value': Decimal('100'), 'deviceid': 'HC_101', 'datatype': 'HeartRate', 'timestamp': '2021-06-01 12:29:50.399165'}
{'value': Decimal('69'), 'deviceid': 'HC_101', 'datatype': 'HeartRate', 'timestamp': '2021-06-01 12:29:51.399458'}
{'value': Decimal('89'), 'deviceid': 'HC_101', 'datatype': 'HeartRate', 'timestamp': '2021-06-01 12:29:52.399613'}
{'value': Decimal('79'), 'deviceid': 'HC_101', 'datatype': 'HeartRate', 'timestamp': '2021-06-01 12:29:53.398744'}
{'value': Decimal('86'), 'datatype': 'SPO2', 'deviceid': 'HC_101', 'timestamp': '2021-06-01 12:29:54.398688'}
{'value': Decimal('90'), 'deviceid': 'HC_101', 'datatype': 'SPO2', 'timestamp': '2021-06-01 12:29:55.398148'}
Sensor data from HC_101
06/01/2021
```

(ii) After delete

```
def delete_data(deviceid, timestamp):
    print ('Delete data in DynamoDB table')
    table = dynamodb.Table('BedSideMonitorData')
    table.delete_item(
        Key={
            'deviceid': deviceid,
            'timestamp': timestamp
        },
    )
    print ('Item deleted left in the table are ', table.item_count)

if __name__ == '__main__':
    deviceid = 'HC_101'
    insert_BSM_data('Temp', '6/21/2021', deviceid,96)
    fetch_all()
    update_data('HC_101', '2021-06-01 12:29:54.398688' , 'SPO2')
    delete_data('HC_101', '2021-06-01 12:29:53.398744')
```

if __name__ == '__main__'

ManageDynamoDB

```
{'value': Decimal('63'), 'deviceid': 'HC_101', 'datatype': 'HeartRate', 'timestamp': '2021-06-01 12:29:47.399032'}
{'value': Decimal('81'), 'deviceid': 'HC_101', 'datatype': 'HeartRate', 'timestamp': '2021-06-01 12:29:48.398854'}
{'value': Decimal('66'), 'deviceid': 'HC_101', 'datatype': 'HeartRate', 'timestamp': '2021-06-01 12:29:49.398852'}
{'value': Decimal('100'), 'deviceid': 'HC_101', 'datatype': 'HeartRate', 'timestamp': '2021-06-01 12:29:50.399165'}
{'value': Decimal('69'), 'deviceid': 'HC_101', 'datatype': 'HeartRate', 'timestamp': '2021-06-01 12:29:51.399458'}
{'value': Decimal('89'), 'deviceid': 'HC_101', 'datatype': 'HeartRate', 'timestamp': '2021-06-01 12:29:52.399613'}
{'value': Decimal('86'), 'datatype': 'SPO2', 'deviceid': 'HC_101', 'timestamp': '2021-06-01 12:29:54.398688'}
{'value': Decimal('90'), 'deviceid': 'HC_101', 'datatype': 'SPO2', 'timestamp': '2021-06-01 12:29:55.398148'}
Sensor data from HC_101
06/01/2021
```

DEMONSTRATION OF INSERT FUNCTION

(i) Before insert

```
def insert_BSM_data(datatype, timestamp, deviceid, value):
    print ('Data Insertion')
    table = dynamodb.Table('BedSideMonitorData')
    table.put_item(
       Item={
            'datatype': datatype,
            'timestamp': timestamp,
            'deviceid': deviceid,
            'value': value
        }
    )
    print ('Total items in the table are ', table.item_count)
```

```
if __name__ == '__main__'
```

ManageDynamoDB

```
{'value': Decimal('63'), 'deviceid': 'HC_101', 'datatype': 'HeartRate', 'timestamp': '2021-06-01 12:29:47.399032'}
{'value': Decimal('81'), 'deviceid': 'HC_101', 'datatype': 'HeartRate', 'timestamp': '2021-06-01 12:29:48.398854'}
{'value': Decimal('66'), 'deviceid': 'HC_101', 'datatype': 'HeartRate', 'timestamp': '2021-06-01 12:29:49.398852'}
{'value': Decimal('100'), 'deviceid': 'HC_101', 'datatype': 'HeartRate', 'timestamp': '2021-06-01 12:29:50.399165'}
{'value': Decimal('69'), 'deviceid': 'HC_101', 'datatype': 'HeartRate', 'timestamp': '2021-06-01 12:29:51.399458'}
{'value': Decimal('89'), 'deviceid': 'HC_101', 'datatype': 'HeartRate', 'timestamp': '2021-06-01 12:29:52.399613'}
{'value': Decimal('86'), 'datatype': 'SPO2', 'deviceid': 'HC_101', 'timestamp': '2021-06-01 12:29:54.398688'}
{'value': Decimal('90'), 'deviceid': 'HC_101', 'datatype': 'SPO2', 'timestamp': '2021-06-01 12:29:55.398148'}
Sensor data from HC_101
06/01/2021
```

(ii) After insert

```
def insert_BSM_data(datatype, timestamp, deviceid, value):
    print ('Data Insertion')
    table = dynamodb.Table('BedSideMonitorData')
    table.put_item(
       Item={
            'datatype': datatype,
            'timestamp': timestamp,
            'deviceid': deviceid,
            'value': value
        }
    )
    print ('Total items in the table are ', table.item_count)
```

insert_BSM_data()

ManageDynamoDB

```
{'value': Decimal('81'), 'deviceid': 'HC_101', 'datatype': 'HeartRate', 'timestamp': '2021-06-01 12:29:48.398854'}
{'value': Decimal('66'), 'deviceid': 'HC_101', 'datatype': 'HeartRate', 'timestamp': '2021-06-01 12:29:49.398852'}
{'value': Decimal('100'), 'deviceid': 'HC_101', 'datatype': 'HeartRate', 'timestamp': '2021-06-01 12:29:50.399165'}
{'value': Decimal('69'), 'deviceid': 'HC_101', 'datatype': 'HeartRate', 'timestamp': '2021-06-01 12:29:51.399458'}
{'value': Decimal('89'), 'deviceid': 'HC_101', 'datatype': 'HeartRate', 'timestamp': '2021-06-01 12:29:52.399613'}
{'value': Decimal('86'), 'datatype': 'SPO2', 'deviceid': 'HC_101', 'timestamp': '2021-06-01 12:29:54.398688'}
{'value': Decimal('90'), 'deviceid': 'HC_101', 'datatype': 'SPO2', 'timestamp': '2021-06-01 12:29:55.398148'}
{'value': Decimal('96'), 'datatype': 'Temp', 'deviceid': 'HC_101', 'timestamp': '6/2/2021'}
Sensor data from HC_101
06/01/2021
```