DBT Assignment-4

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SEM: 5 , SECTION: F

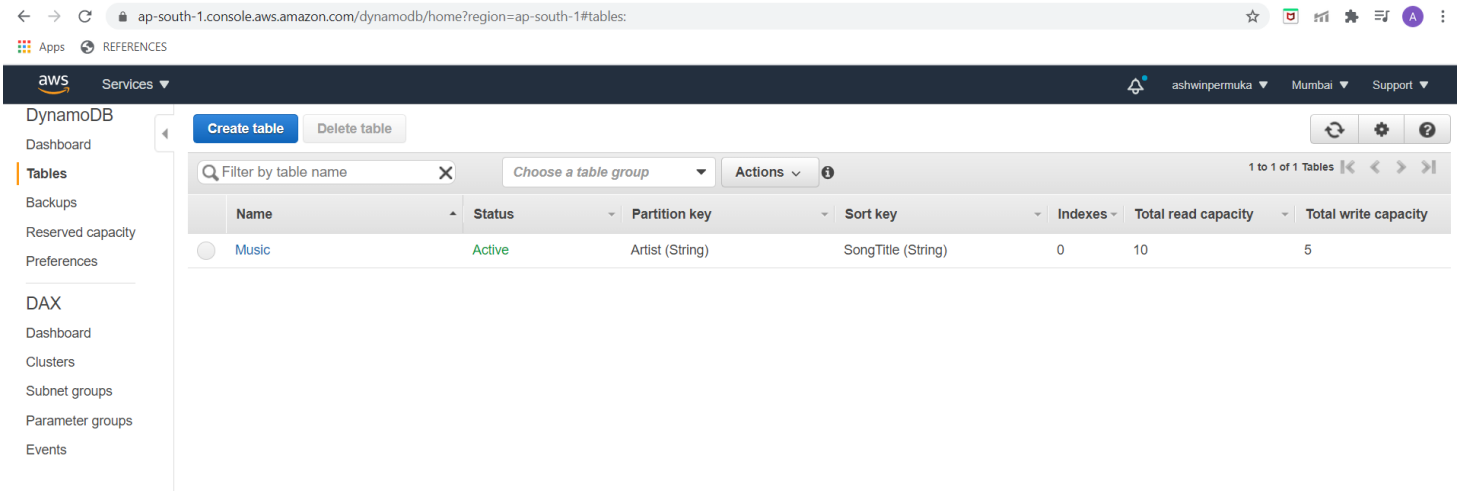
DynamoDB (Key Value Database)

Creating a table called Music, and specifying attributes:-

```
Command Prompt
C:\Users\ashwi>aws dynamodb create-table --table-name Music --attribute-definitions AttributeName=Artist,AttributeType=S AttributeName=SongTitle,AttributeType=S --key-schema AttributeName=Artist,KeyType=HASH Att
ributeName=SongTitle,KeyType=RANGE --provisioned-throughput ReadCapacityUnits=10,WriteCapacityUnits=5
{
    "TableDescription": {
        "AttributeDefinitions": [
            {
                "AttributeName": "Artist",
                "AttributeType": "S"
            },
            {
                "AttributeName": "SongTitle",
                "AttributeType": "S"
            }
        ],
        "TableName": "Music",
        "KeySchema": [
            {
                "AttributeName": "Artist",
                "KeyType": "HASH"
            },
            {
                "AttributeName": "SongTitle",
                "KeyType": "RANGE"
            }
        ],
        "TableStatus": "CREATING",
        "CreationDateTime": "2020-11-12T12:25:10.497000+05:30",
        "ProvisionedThroughput": {
            "NumberOfDecreasesToday": 0,
            "ReadCapacityUnits": 10,
            "WriteCapacityUnits": 5
        },
        "TableSizeBytes": 0,
        "ItemCount": 0,
        "TableArn": "arn:aws:dynamodb:ap-south-1:207477500461:table/Music",
        "TableId": "e32e141f-69ea-44b4-a870-44daf4ecb056"
    }
}

C:\Users\ashwi>
```

Now the Music table has been created successfully.



Command to Describe the table:-

```
Command Prompt

C:\Users\ashwi>aws dynamodb describe-table --table-name Music
{
    "Table": {
        "AttributeDefinitions": [
            {
                "AttributeName": "Artist",
                "AttributeType": "S"
            },
            {
                "AttributeName": "SongTitle",
                "AttributeType": "S"
            }
        ],
        "TableName": "Music",
        "KeySchema": [
            {
                "AttributeName": "Artist",
                "KeyType": "HASH"
            },
            {
                "AttributeName": "SongTitle",
                "KeyType": "RANGE"
            }
        ],
        "TableStatus": "ACTIVE",
        "CreationDateTime": "2020-11-12T12:25:10.497000+05:30",
        "ProvisionedThroughput": {
            "NumberOfDecreasesToday": 0,
            "ReadCapacityUnits": 10,
            "WriteCapacityUnits": 5
        },
        "TableSizeBytes": 0,
        "ItemCount": 0,
        "TableArn": "arn:aws:dynamodb:ap-south-1:207477500461:table/Music",
        "TableId": "e32e141f-69ea-44b4-a870-44daf4ecb056"
    }
}

C:\Users\ashwi>
```

Insert1.json and insert2.json files

item_insert1 - Notepad

File Edit Format View Help

```
{
        "Artist": {"S": "Ace of Base"},
        "SongTitle": {"S": "Happy Nations"},
        "AlbumName": {"S": "Greatest Hits"}
}
```

item_insert2 - Notepad

File Edit Format View Help

```
{
        "Artist": {"S": "The Chainsmokers"},
        "SongTitle": {"S": "Something Just Like This"},
        "AlbumName": {"S": "Memories"}
}
```

Inserting the above 2 items:-

```
Command Prompt

C:\Users\ashwi>aws dynamodb put-item --table-name Music --item file://item_insert1.json


C:\Users\ashwi>aws dynamodb describe-table --table-name Music
{
    "Table": {
        "AttributeDefinitions": [
            {
                "AttributeName": "Artist",
                "AttributeType": "S"
            },
            {
                "AttributeName": "SongTitle",
                "AttributeType": "S"
            }
        ],
        "TableName": "Music",
        "KeySchema": [
            {
                "AttributeName": "Artist",
                "KeyType": "HASH"
            },
            {
                "AttributeName": "SongTitle",
                "KeyType": "RANGE"
            }
        ],
        "TableStatus": "ACTIVE",
        "CreationDateTime": "2020-11-12T12:25:10.497000+05:30",
```

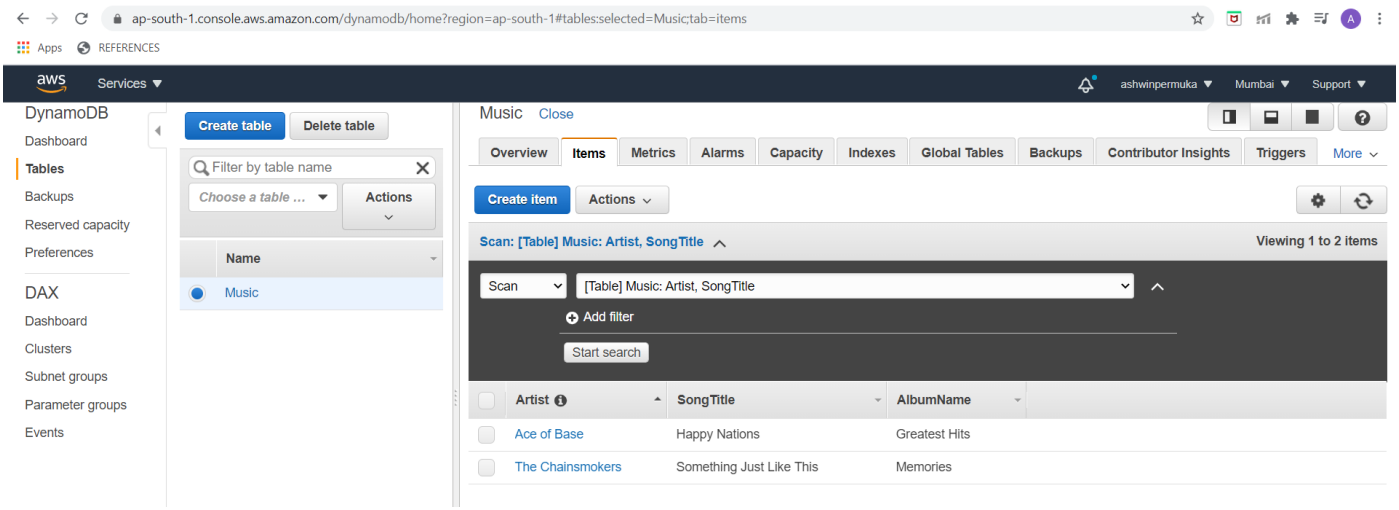
Command Prompt

```
C:\Users\ashwi>aws dynamodb put-item --table-name Music --item file://item_insert2.json


C:\Users\ashwi>aws dynamodb scan --table-name Music
{
    "Items": [
        {
            "Artist": {
                "S": "Ace of Base"
            },
            "AlbumName": {
                "S": "Greatest Hits"
            },
            "SongTitle": {
                "S": "Happy Nations"
            }
        },
        {
            "Artist": {
                "S": "The Chainsmokers"
            },
            "AlbumName": {
                "S": "Memories"
            },
            "SongTitle": {
                "S": "Something Just Like This"
            }
        }
    ],
    "Count": 2,
    "ScannedCount": 2,
    "ConsumedCapacity": null
}


C:\Users\ashwi>
C:\Users\ashwi>
```

After inserting those 2 items:-



Scan the table to see all items:

Command Prompt

```
C:\Users\ashwi>aws dynamodb put-item --table-name Music --item file://item_insert2.json


C:\Users\ashwi>aws dynamodb scan --table-name Music
{
    "Items": [
        {
            "Artist": {
                "S": "Ace of Base"
            },
            "AlbumName": {
                "S": "Greatest Hits"
            },
            "SongTitle": {
                "S": "Happy Nations"
            }
        },
        {
            "Artist": {
                "S": "The Chainsmokers"
            },
            "AlbumName": {
                "S": "Memories"
            },
            "SongTitle": {
                "S": "Something Just Like This"
            }
        }
    ],
    "Count": 2,
    "ScannedCount": 2,
    "ConsumedCapacity": null
}


C:\Users\ashwi>
C:\Users\ashwi>
```

Query to project “SongTitle” of all items where Artist is “The Chainsmokers” :-

Command Prompt

```
C:\Users\ashwi>aws dynamodb query --table-name Music --projection-expression "SongTitle" --key-condition-expression "Artist = :v1" --expression-attribute-values file://query1.json --return-consumed-capacity TOTAL
{
    "Items": [
        {
            "SongTitle": {
                "S": "Something Just Like This"
            }
        }
    ],
    "Count": 1,
    "ScannedCount": 1,
    "ConsumedCapacity": {
        "TableName": "Music",
        "CapacityUnits": 0.5
    }
}
```

query1.json:

query1 - Notepad

File Edit Format View Help

```
{
        ":v1":{"S":"The Chainsmokers"}
}
```

Inserting one more item:-

Command Prompt

```
C:\Users\ashwi>aws dynamodb put-item --table-name Music --item file://item3.json


C:\Users\ashwi>aws dynamodb scan --table-name Music
{
    "Items": [
        {
            "Artist": {
                "S": "BTS"
            },
            "Genre": {
                "S": "Mood Booster"
            },
            "AlbumName": {
                "S": "Dynamite Melodies"
            },
            "SongTitle": {
                "S": "Dynamite"
            }
        },
        {
            "Artist": {
                "S": "Ace of Base"
            },
            "AlbumName": {
                "S": "Greatest Hits"
            },
            "SongTitle": {
                "S": "Happy Nations"
            }
        },
        {
            "Artist": {
                "S": "The Chainsmokers"
            },
            "AlbumName": {
                "S": "Memories"
            },
            "SongTitle": {
                "S": "Something Just Like This"
            }
        }
    ],
    "Count": 3,
    "ScannedCount": 3,
    "ConsumedCapacity": null
}

C:\Users\ashwi>
```

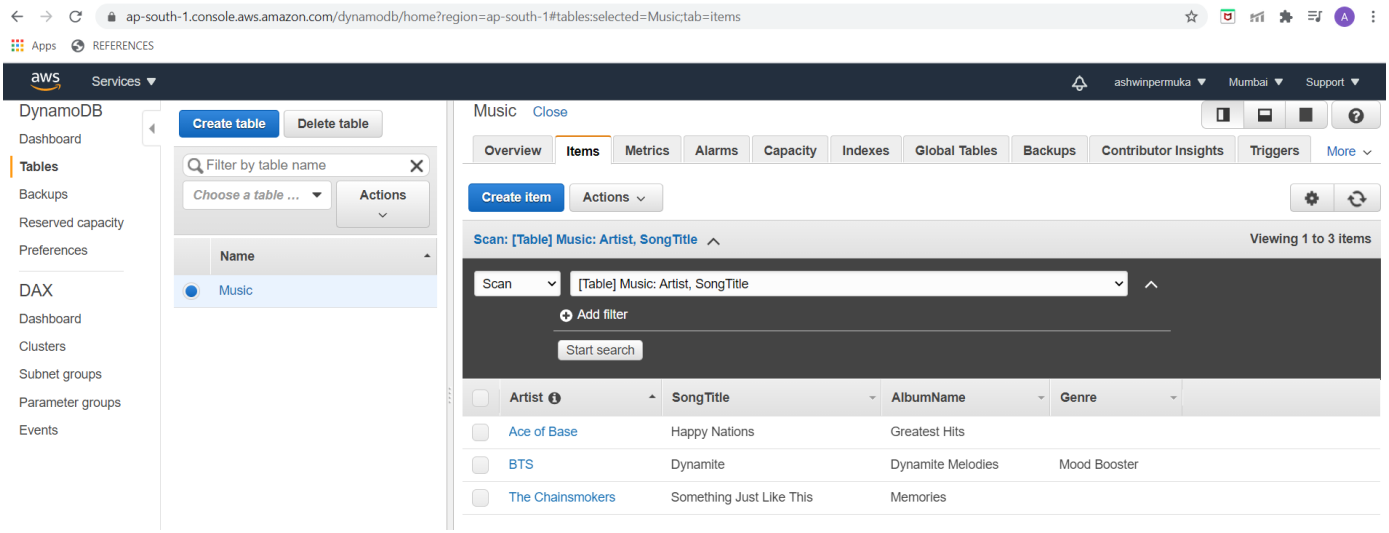
item3.json

item3 - Notepad

File Edit Format View Help

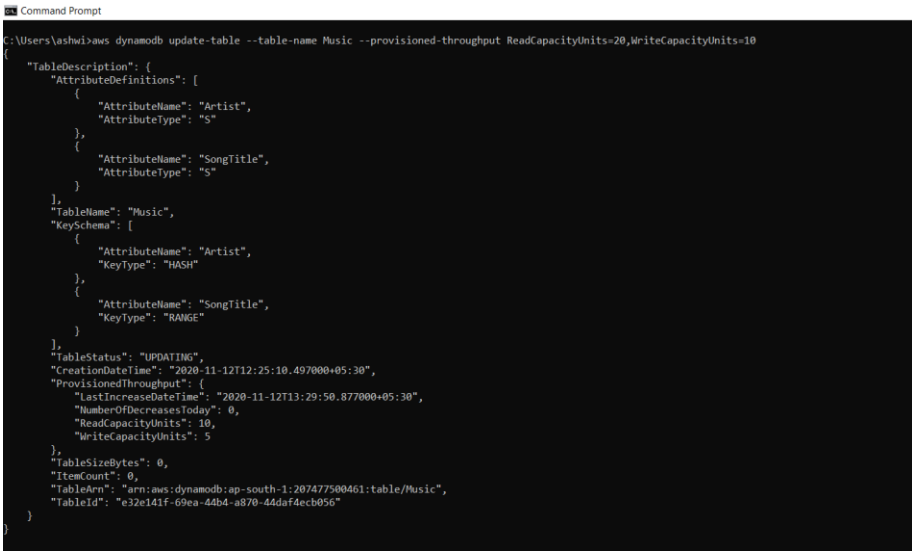
```
{
        "Artist": {"S": "BTS"},
        "SongTitle": {"S": "Dynamite"},
        "AlbumName": {"S": "Dynamite Melodies"},
        "Genre": {"S": "Mood Booster"}
}
```

After inserting item3:



Updating the table :-

Updating the provisioned-throughput ReadCapacity and WriteCapacity units:



Updating the table by adding new attribute called “Price”:

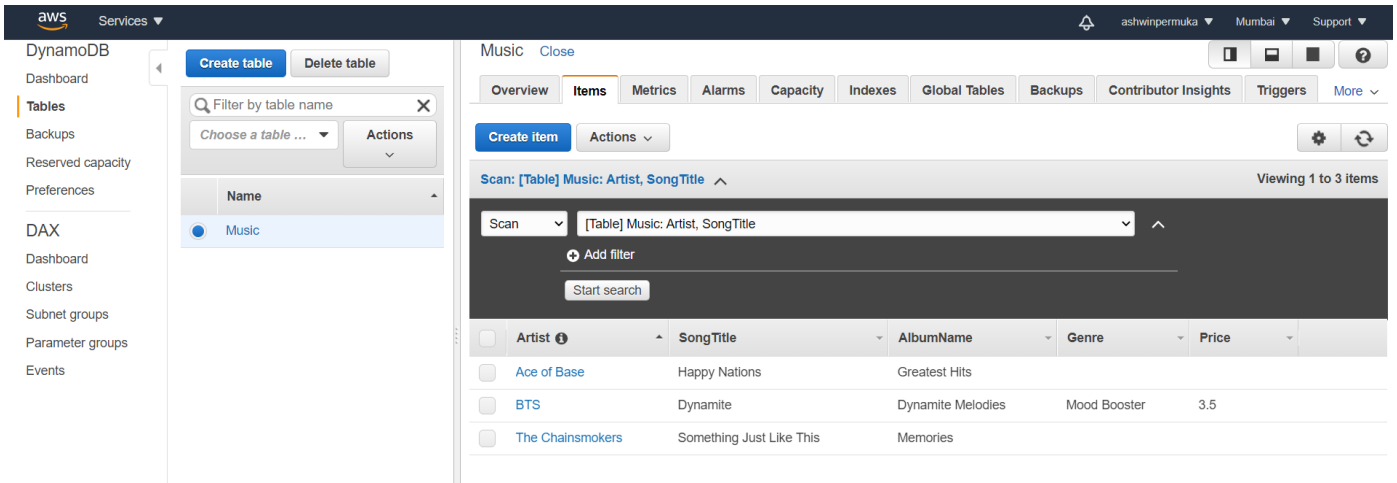
```
Command Prompt
C:\Users\ashwi>aws dynamodb put-item --table-name Music --item file://update_price.json


C:\Users\ashwi>aws dynamodb scan --table-name Music
{
    "Items": [
        {
            "Price": {
                "N": "3.5"
            },
            "Artist": {
                "S": "BTS"
            },
            "Genre": {
                "S": "Mood Booster"
            },
            "AlbumName": {
                "S": "Dynamite Melodies"
            },
            "SongTitle": {
                "S": "Dynamite"
            }
        },
        {
            "Artist": {
                "S": "Ace of Base"
            },
            "AlbumName": {
                "S": "Greatest Hits"
            },
            "SongTitle": {
                "S": "Happy Nations"
            }
        },
        {
            "Artist": {
                "S": "The Chainsmokers"
            },
            "AlbumName": {
                "S": "Memories"
            },
            "SongTitle": {
                "S": "Something Just Like This"
            }
        }
    ],
    "Count": 3,
    "ScannedCount": 3,
    "ConsumedCapacity": null
}
```

update_price.json

```
update_price - Notepad
File  Edit  Format  View  Help
{
            "Artist": {"S": "BTS"},
            "SongTitle": {"S": "Dynamite"},
            "AlbumName": {"S": "Dynamite Melodies"},
            "Genre": {"S": "Mood Booster"},
            "Price": {"N": "3.5"}
}
```

After the updating the table by adding Price:



Updating the item by changing the value of “Price” of a particular item:

```
Command Prompt

C:\Users\ashwi>aws dynamodb update-item --table-name Music --key file://key1.json --update-expression "SET #P = :P" --expression-attribute-names file://u1.json --expression-attribute-values file://u1_values.json
 --return-values ALL_NEW
{
    "Attributes": {
        "Price": {
            "N": "5.25"
        },
        "AlbumName": {
            "S": "Dynamite Melodies"
        },
        "Artist": {
            "S": "BTS"
        },
        "Genre": {
            "S": "Mood Booster"
        },
        "SongTitle": {
            "S": "Dynamite"
        }
    }
}
```

u1.json and u1_values.json

```
u1 - Notepad
File  Edit  Format  View  Help
{
        "#P":"Price"
}
```

```
u1_values - Notepad
File  Edit  Format  View  Help
{
        ":P":{"N": "5.25"}
}
```

key1.json

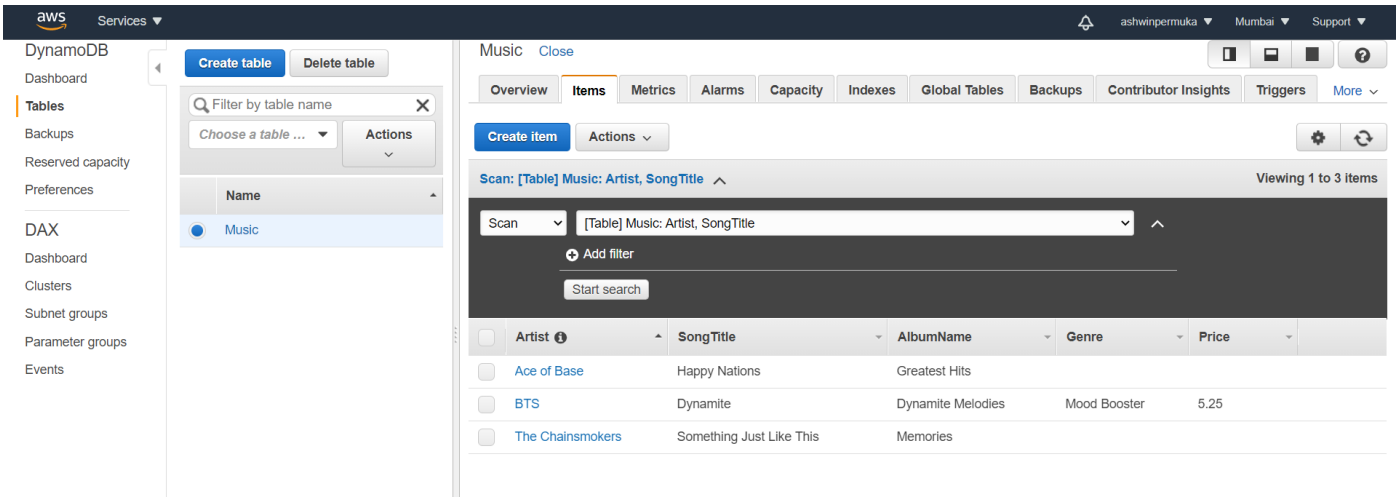
```
key1 - Notepad
File  Edit  Format  View  Help
{
        "Artist": {"S": "BTS"},
        "SongTitle": {"S": "Dynamite"}
}
```

Scanning entire table after the update:

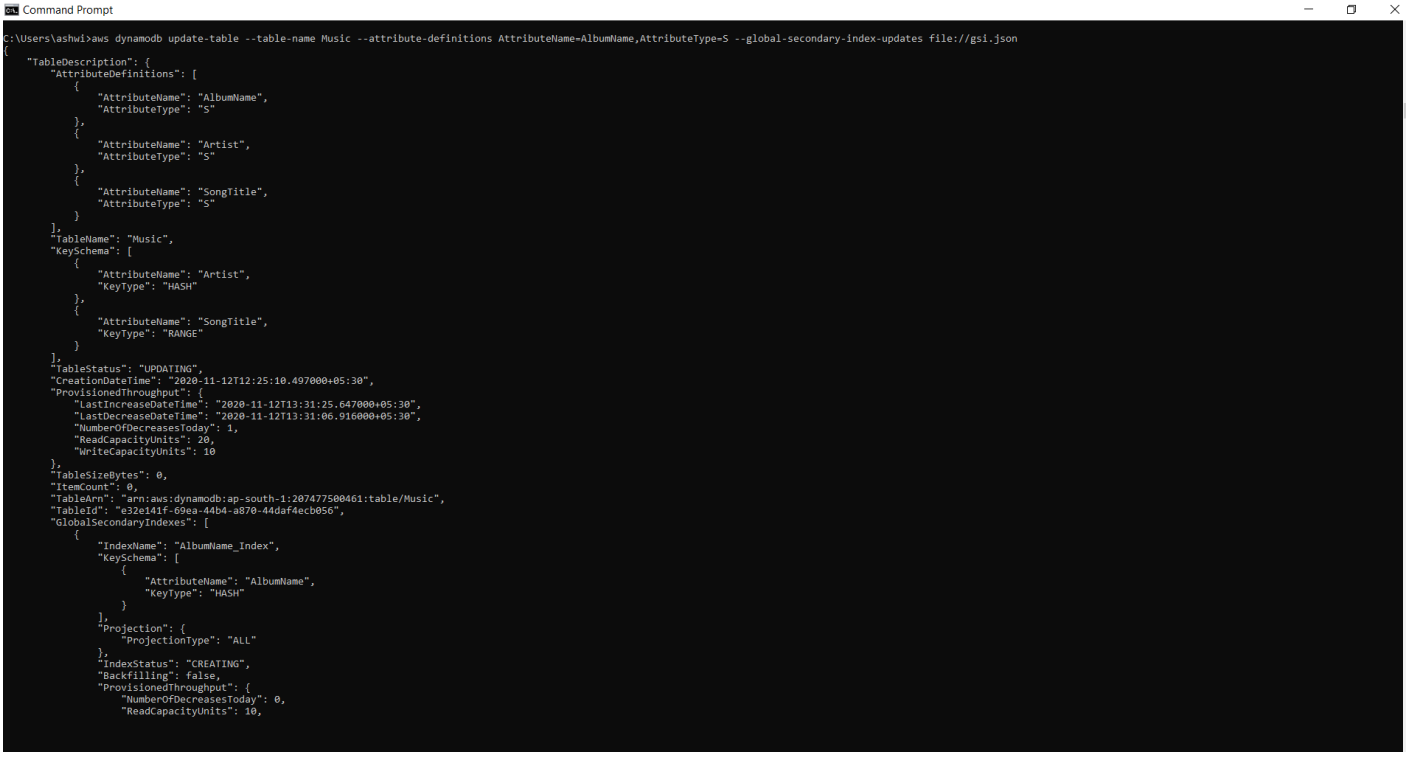
```
Command Prompt
C:\Users\ashwi>aws dynamodb scan --table-name Music
{
    "Items": [
        {
            "Price": {
                "N": "5.25"
            },
            "AlbumName": {
                "S": "Dynamite Melodies"
            },
            "Artist": {
                "S": "BTS"
            },
            "Genre": {
                "S": "Mood Booster"
            },
            "SongTitle": {
                "S": "Dynamite"
            }
        },
        {
            "Artist": {
                "S": "Ace of Base"
            },
            "AlbumName": {
                "S": "Greatest Hits"
            },
            "SongTitle": {
                "S": "Happy Nations"
            }
        },
        {
            "Artist": {
                "S": "The Chainsmokers"
            },
            "AlbumName": {
                "S": "Memories"
            },
            "SongTitle": {
                "S": "Something Just Like This"
            }
        }
    ],
    "Count": 3,
    "ScannedCount": 3,
    "ConsumedCapacity": null
}

C:\Users\ashwi>
```

We can observe the same change in aws console also:

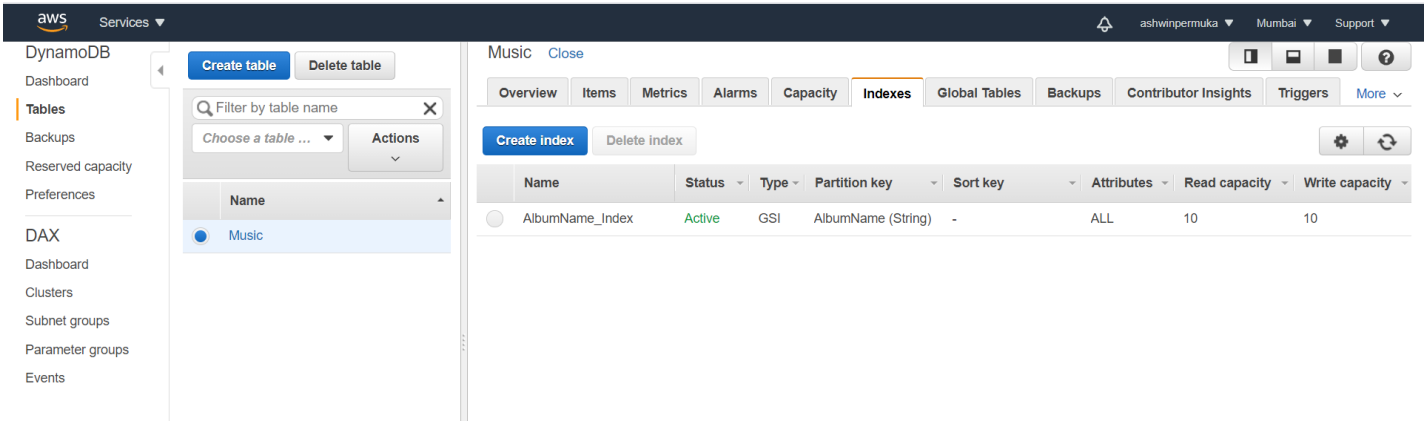


Updating the table by creating a **global secondary index**:



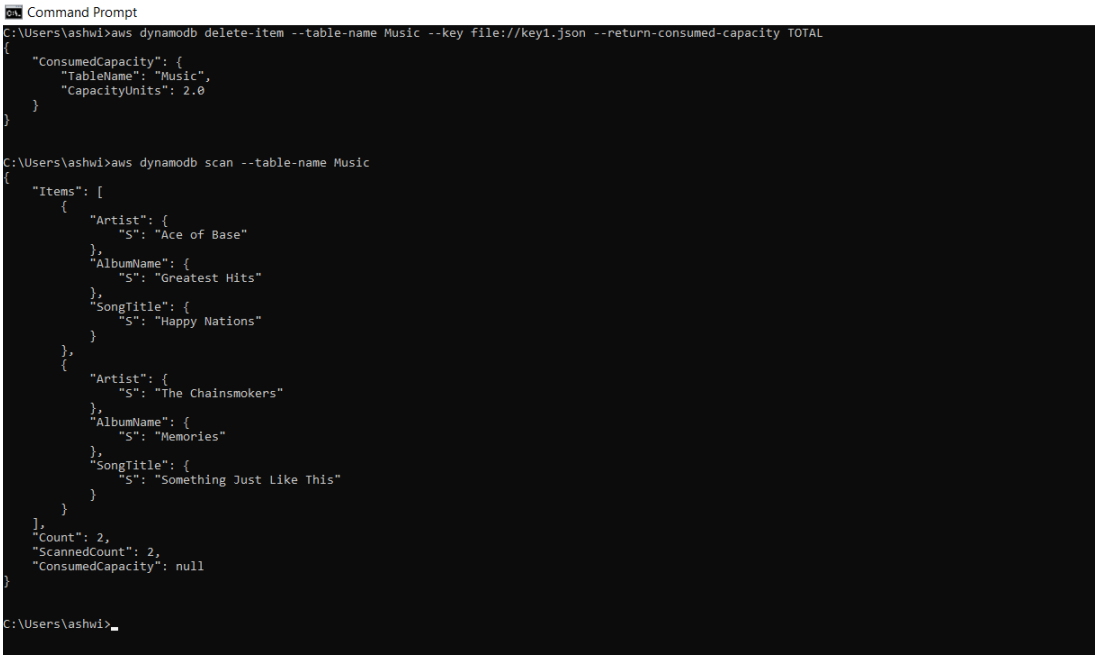
Ggi.json file:

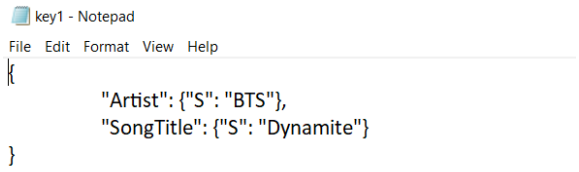
After creating the index:



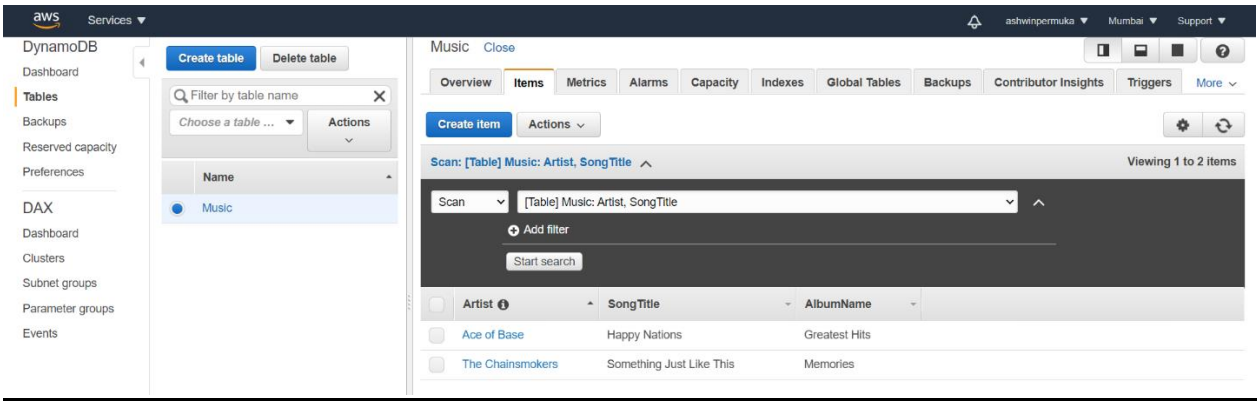
Deleting an item from table:-

To delete an item from Music table, specifying delete item as the key,





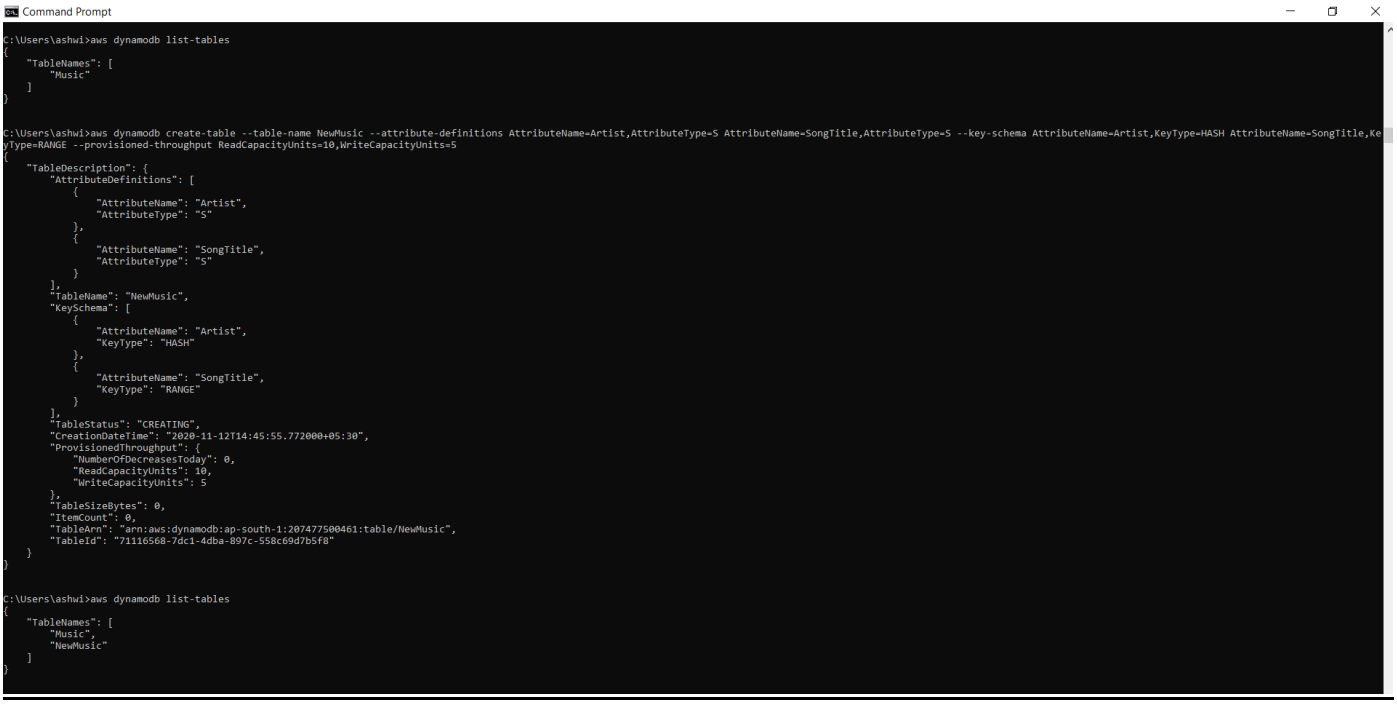
After deleting the item, there are only 2 items now:



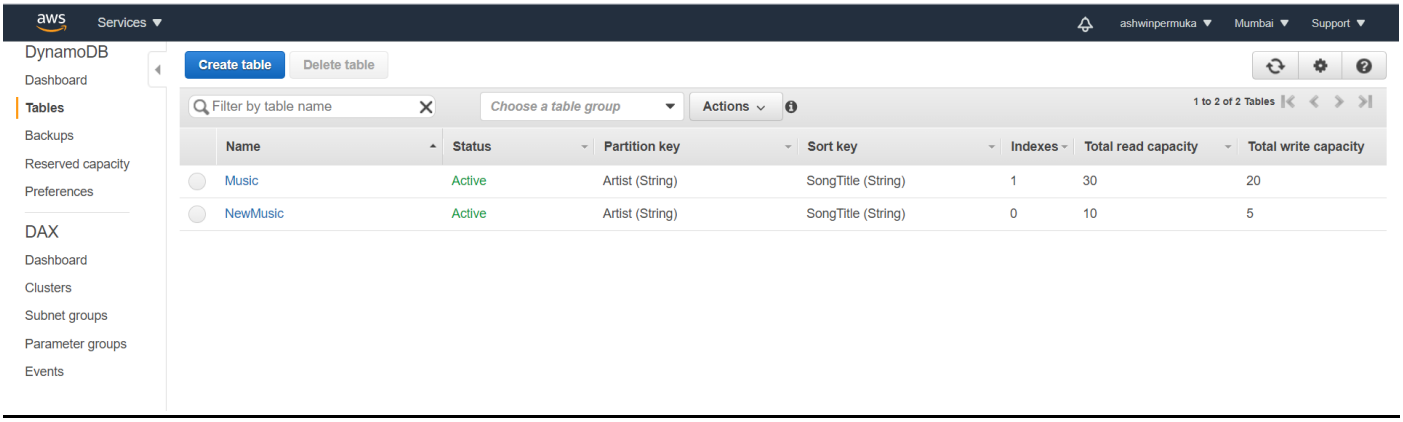
Deleting a table:-

Here I create a new table called ‘NewMusic’ and then I delete it.

Creating the table NewMusic:



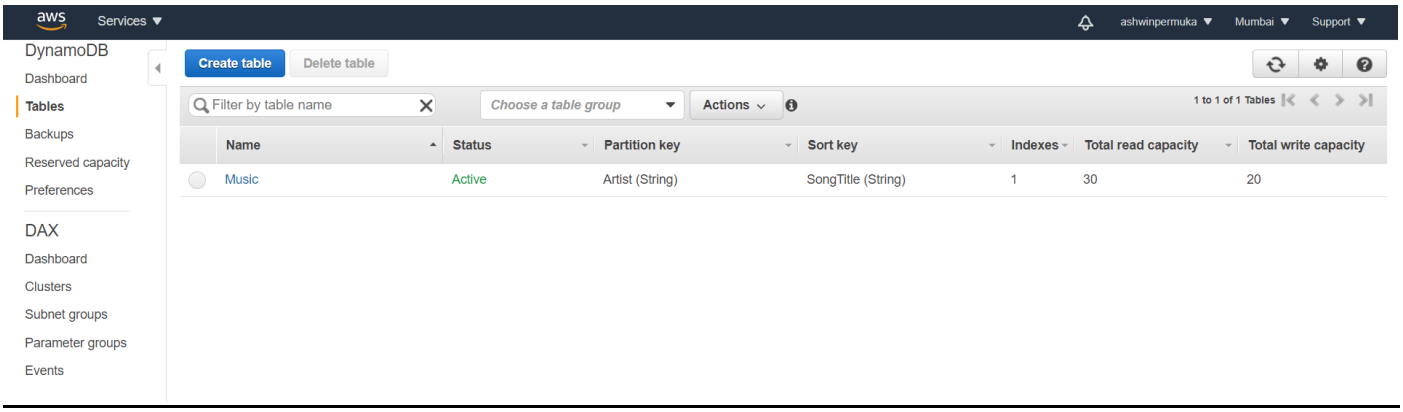
Now we have 2 tables Music and NewMusic:



Deleting the table NewMusic:-

We use delete-table command to delete a table

Now we can see that the NewMusic table has been successfully deleted:



Thank you