1. Reason:

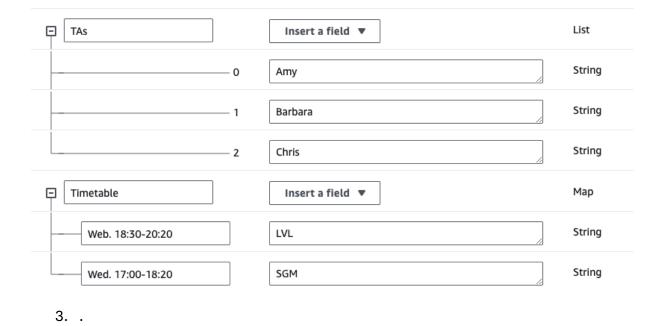
I selected 'course_name' as the partition key, and 'course_id' as sort key. Every course in USC is unique with a course name and id. For example, this course data management is identified as DSCI551.

Using the course name as the partition key allows for efficient retrieval of all information related to a specific course, as all data for a given course will be stored in the same partition.

The sort key allows you to differentiate between multiple courses with the same name, as the combination of course_name and course_id will be unique for each course.

2.

⊡	Attribute name		Value	Туре
	course_name - Partition key		Data Management	String
	course_id - Sort key		DSCI551	String
	Capacity		150	Number
9	Homework		Insert a field	String set
-		— 0	AWS and Firebase	String
-		<u> </u>	External Sorting	String
-		<u> </u>	SQL and ER	String
-		— 3	Spark and Hadoop	String
L		<u> </u>	XML	String
	Lecturer		Prof. Wensheng Wu	String



Course name and course id are strings. Strings are identified as "S", so they are shown as:

```
1 ▼ {
2 ▼ "course_name": {
3     "S": "Data Management"
4     },
5 ▼ "course_id": {
6     "S": "DSCI551"
7     },
```

Capacity is a number. Number is identified as "N":

```
8 ▼ "Capacity": {
9 "N": "150"
10 },
```

Homework is an attribute of String set, which contains different homework topics:

```
11 ▼
       "Homework": {
12 ▼
         "SS": [
13
           "AWS and Firebase",
           "External Sorting",
14
15
           "SQL and ER",
           "Spark and Hadoop",
16
17
           "XML"
        ]
18
19
      },
```

```
20 ▼ "Lecturer": {
21    "S": "Prof. Wensheng Wu"
22    },
```

Lecturer is a String:

TAs is a *list* of Strings:

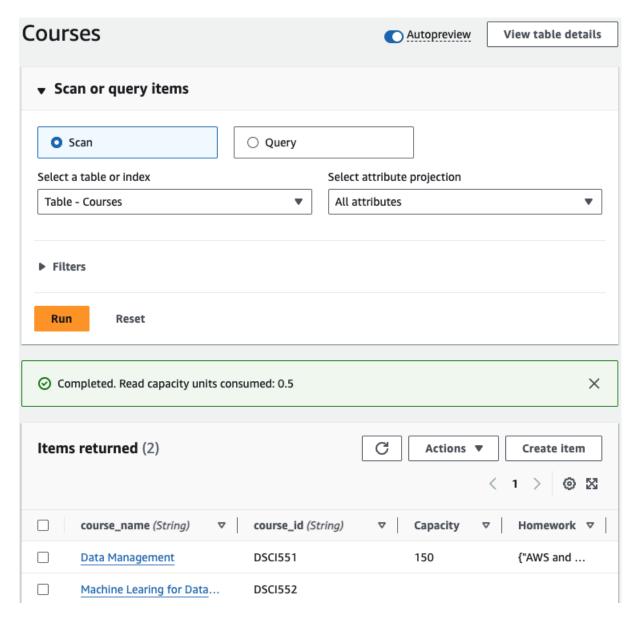
```
"TAs": {
23 ▼
        "L": [
24 ▼
25 ▼
           {
            "S": "Amy"
26
          },
27
28 ▼
             "S": "Barbara"
29
30
          },
31 ▼
             "S": "Chris"
32
33
        ]
34
35
      },
```

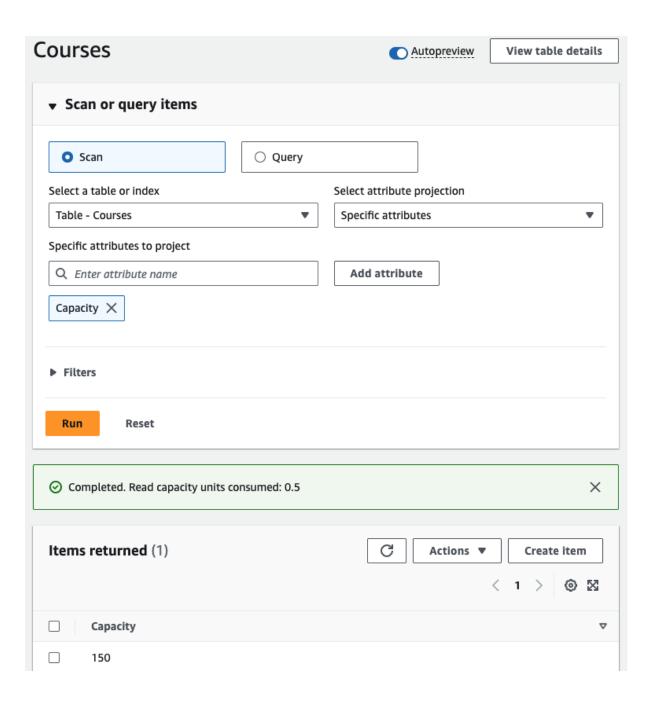
Timetable is a map, identifying as 'M'.

```
"Timetable": {
36 ▼
37 ▼
        "M": {
38 ▼
          "Web. 18:30-20:20": {
            "S": "LVL"
39
40
          },
          "Wed. 17:00-18:20": {
41 ▼
            "S": "SGM"
42
43
          }
        }
44
45
      }
```

4.

Scan:





Query:

