

ASSIGNMENT 1: PART C

Task A : Screenshots of process of creating table and inserting and updating data in table “*Parks_NovaScotia*”.

The screenshot displays the AWS Management Console interface for creating a new DynamoDB table. The browser address bar shows the URL: `us-east-1.console.aws.amazon.com/dynamodbv2/home?region=us-east-1#create-table`. The console header includes the AWS logo, a search bar, and the user's account information (N. Virginia, voclabs/user1973371=rh679297@dal.ca @ 0929-9872-4104). A blue banner message states: "Following the preview phase in which we analyzed and incorporated your feedback, we have completed the new DynamoDB console, making it even easier for you to manage your data and resources. Let us know what you think. You can still choose to return to the previous console from the navigation pane." The main content area is titled "Create table" and contains the following sections:

- Table details** (Info icon): A note stating "DynamoDB is a schemaless database that requires only a table name and a primary key when you create the table."
- Table name**: A text input field containing "Parks_NovaScotia". A note below the field states: "This will be used to identify your table. Between 3 and 255 characters, containing only letters, numbers, underscores (_), hyphens (-), and periods (.)." The field is highlighted with a blue border.
- Partition key**: A text input field containing "name" and a dropdown menu set to "String". A note below the field states: "The partition key is part of the table's primary key. It is a hash value that is used to retrieve items from your table and allocate data across hosts for scalability and availability. 1 to 255 characters and case sensitive."
- Sort key - optional**: A text input field containing "place" and a dropdown menu set to "String". A note below the field states: "You can use a sort key as the second part of a table's primary key. The sort key allows you to sort or search among all items sharing the same partition key. 1 to 255 characters and case sensitive." The field is highlighted with a blue border.

The footer of the console includes a "Feedback" link, a language selection prompt, and copyright information: "© 2022, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences".

Figure 1. Screenshot of manual creation of *Parks_NovaScotia* table.

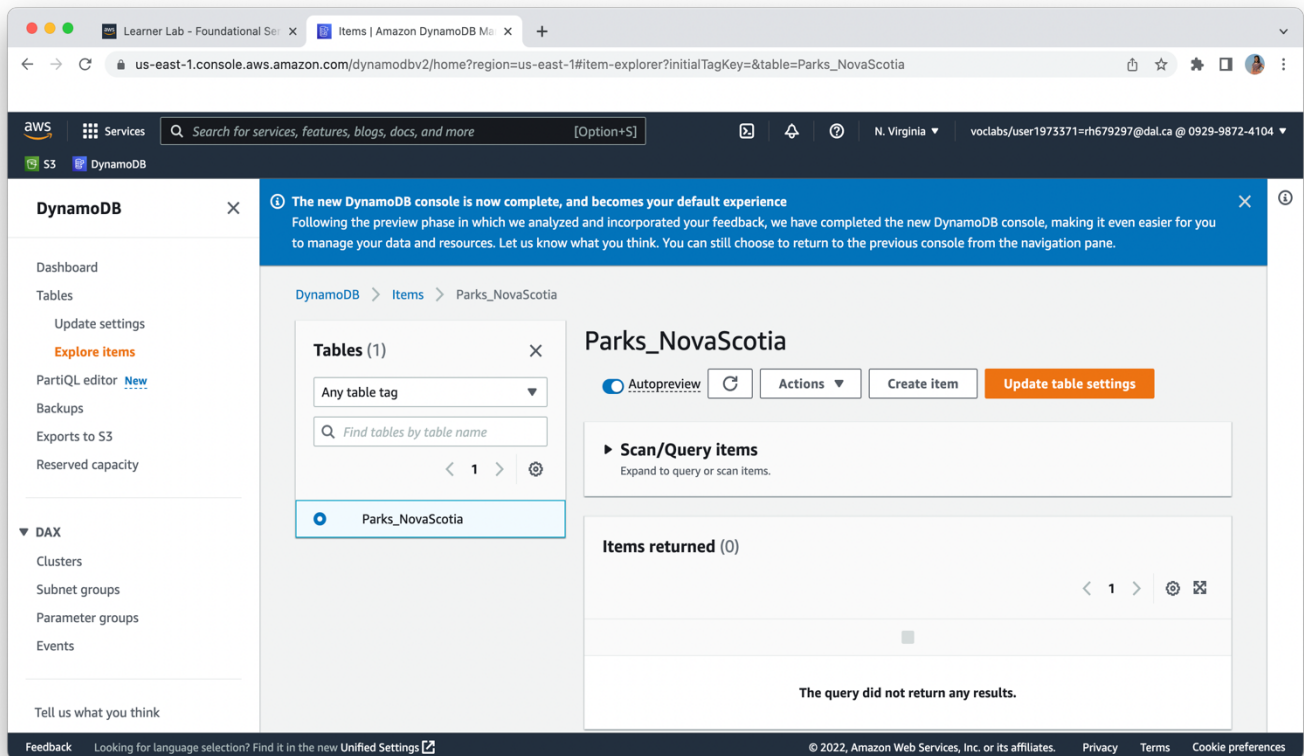


Figure 2. Screenshot of empty table.

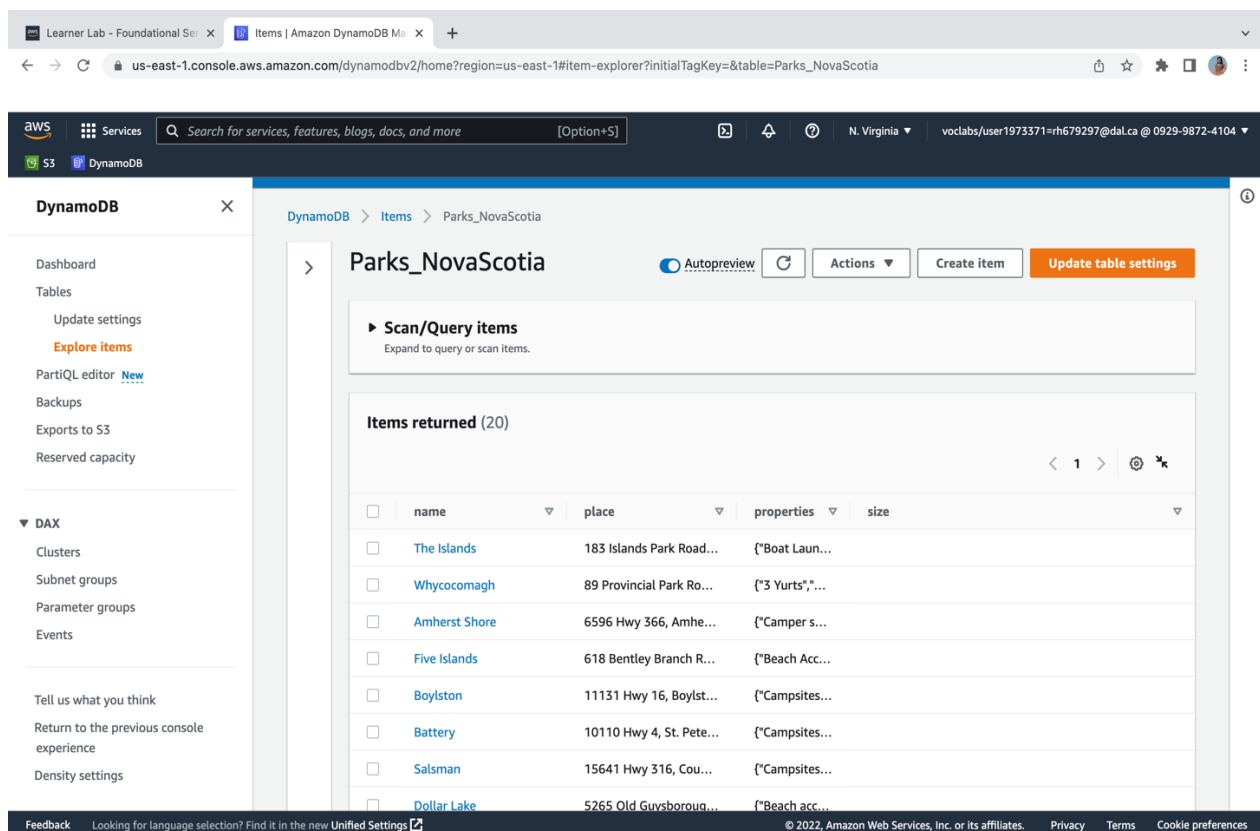


Figure 3. Screenshot of inserted data using insertIntoTable() class.

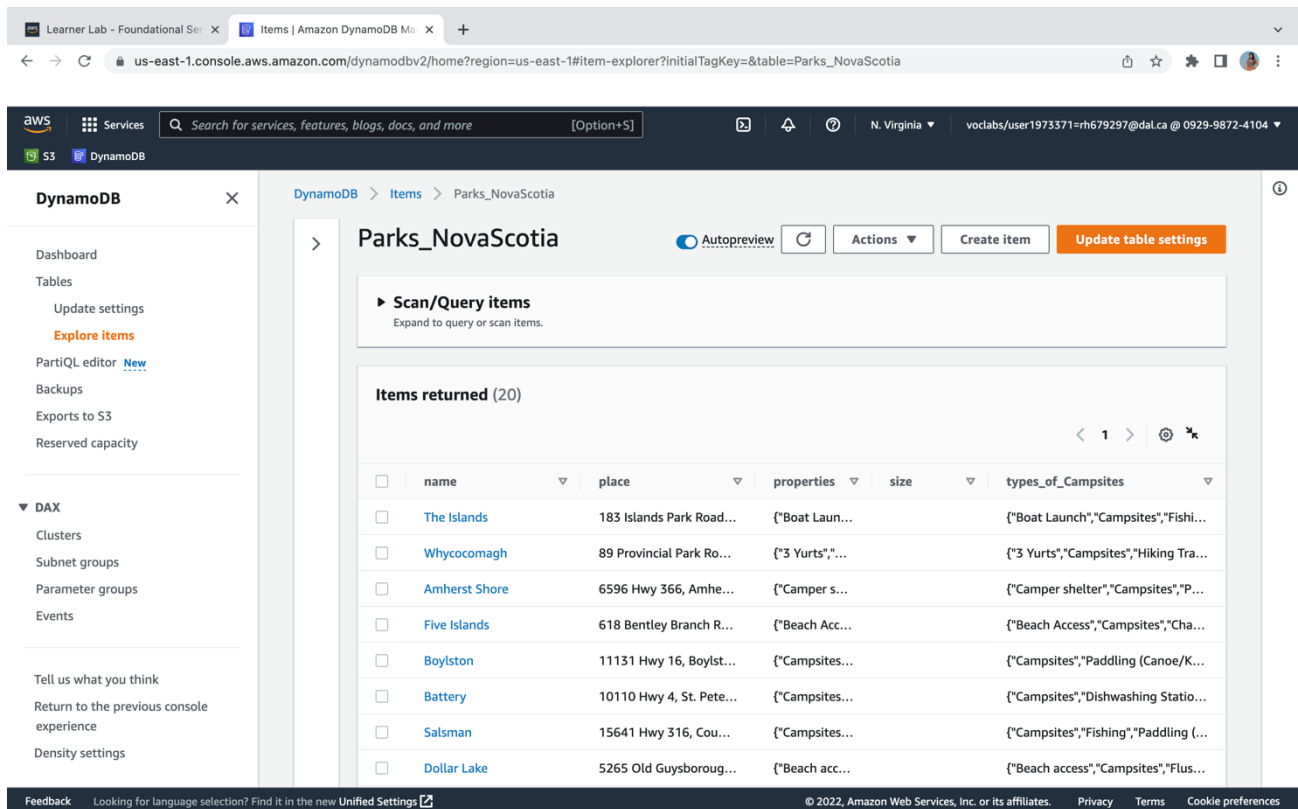


Figure 4. Screenshot of updated data using `updateTable()` class.

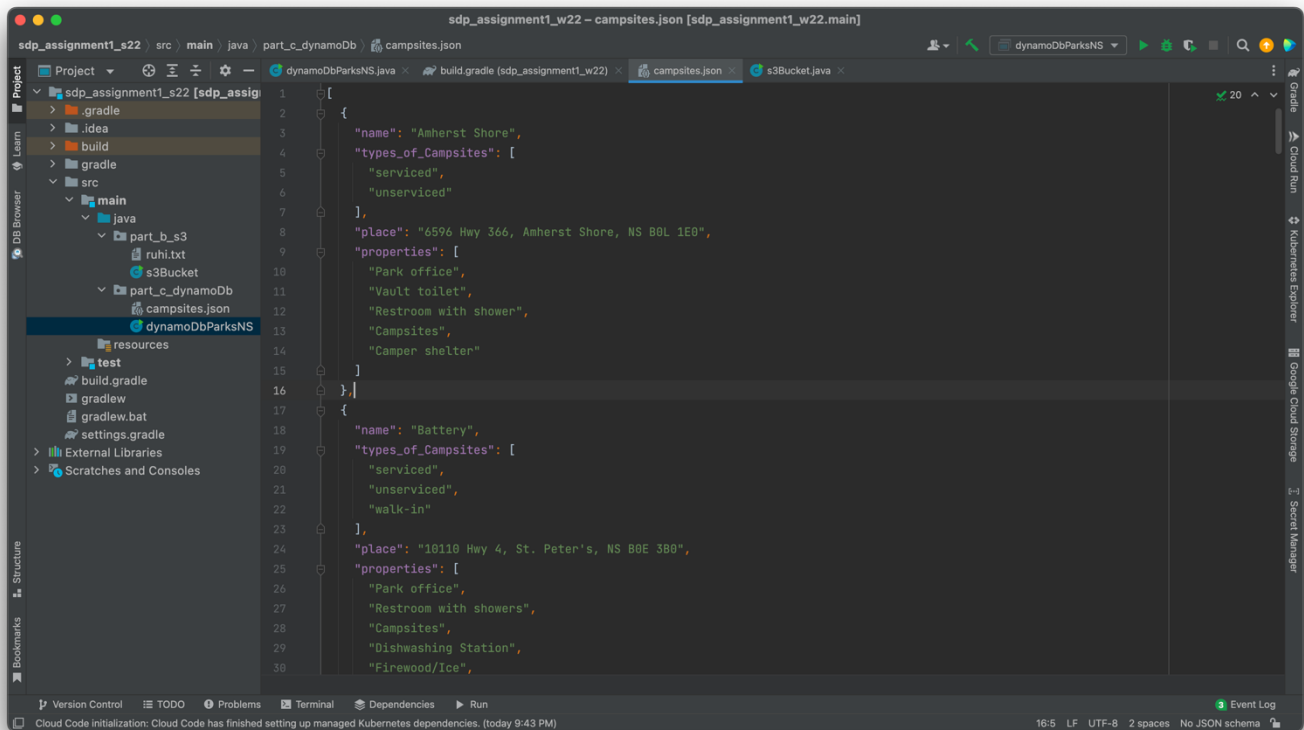


Figure 5. Screenshot of `campsites.json` file used for inserting and updating data.

Task B : Code snapshot.**dynamoDbParksNS.java**

```
package part_c_dynamoDb;

import com.amazonaws.AmazonServiceException;
import com.amazonaws.services.dynamodbv2.AmazonDynamoDB;
import com.amazonaws.services.dynamodbv2.AmazonDynamoDBClientBuilder;
import com.amazonaws.services.dynamodbv2.model.*;
import org.json.simple.JSONArray;
import org.json.simple.JSONObject;
import org.json.simple.parser.JSONParser;
import java.io.Reader;
import java.nio.file.Files;
import java.nio.file.Paths;
import java.util.ArrayList;
import java.util.HashMap;
import java.util.Map;

public class dynamoDbParksNS {
    // method to insert data into the table
    public static void insertIntoTable(String tableName) {
        JSONParser jsonParser = new JSONParser();
        try {
            Reader reader =
Files.newBufferedReader(Paths.get("/Users/ruhityagi/Downloads/sdp_assignment1_s22/src/main/java/part_c_dynamoDb/campsites.json"));
            Object obj = jsonParser.parse(reader);
            JSONArray campSites = (JSONArray) obj;
            campSites.forEach(camp -> {
                HashMap<String, AttributeValue> item_values =
                    new HashMap<String, AttributeValue>();
                item_values.put("name", new AttributeValue((String) ((JSONObject)
camp).get("name")));
                item_values.put("place", new AttributeValue((String) ((JSONObject)
camp).get("place")));
                if (((JSONObject) camp).get("size") != null) {
                    item_values.put("size", new AttributeValue((String) ((JSONObject)
camp).get("size")));
                }
                item_values.put("properties", new AttributeValue((ArrayList<String>)
((JSONObject) camp).get("properties")));
                final AmazonDynamoDB ddb = AmazonDynamoDBClientBuilder.defaultClient();
                try {
                    ddb.putItem(tableName, item_values);
                } catch (AmazonServiceException e) {
                    e.printStackTrace();
                }
            });
        } catch (Exception e) {
            e.printStackTrace();
        }
    }

    //method to update types_ofcampsites in table
    public static void updateTable(String tableName) {
        JSONParser jsonParser = new JSONParser();
        try {
            Reader reader =
Files.newBufferedReader(Paths.get("/Users/ruhityagi/Downloads/sdp_assignment1_s22/src/main/java/part_c_dynamoDb/campsites.json"));
            Object obj = jsonParser.parse(reader);
            JSONArray campSites = (JSONArray) obj;
```

```

        campSites.forEach(camp -> {
            UpdateItemRequest request = new UpdateItemRequest();
            request.setTableName(tableName);
            request.setReturnConsumedCapacity(ReturnConsumedCapacity.TOTAL);
            request.setReturnValues(ReturnValue.UPDATED_OLD);
            Map<String, AttributeValue> keysMap = new HashMap<>();
            keysMap.put("name", new AttributeValue((String) ((JsonObject)
camp).get("name")));
            keysMap.put("place", new AttributeValue((String) ((JsonObject)
camp).get("place")));
            request.setKey(keysMap);
            Map<String, AttributeValueUpdate> map = new HashMap<>();
            map.put("types_of_Campsites", new AttributeValueUpdate(
                new AttributeValue((ArrayList<String>) ((JsonObject)
camp).get("properties")), "PUT"));
            request.setAttributeUpdates(map);
            try {
                AmazonDynamoDB dbClient =
AmazonDynamoDBClientBuilder.defaultClient();
                dbClient.updateItem(request);
            } catch (Exception e) {
                e.printStackTrace();
            }
        });
    } catch (Exception e) {
        e.printStackTrace();
    }
}

public static void main(String[] args) {
    insertIntoTable("Parks NovaScotia");
    updateTable("Parks_NovaScotia");
}
}

```

campsites.json:

```

[
  {
    "name": "Amherst Shore",
    "types_of_Campsites": [
      "serviced",
      "unserviced"
    ],
    "place": "6596 Hwy 366, Amherst Shore, NS B0L 1E0",
    "properties": [
      "Park office",
      "Vault toilet",
      "Restroom with shower",
      "Campsites",
      "Camper shelter"
    ]
  },
  {
    "name": "Battery",
    "types_of_Campsites": [
      "serviced",
      "unserviced",
      "walk-in"
    ],
    "place": "10110 Hwy 4, St. Peter's, NS B0E 3B0",
    "properties": [

```

```

    "Park office",
    "Restroom with showers",
    "Campsites",
    "Dishwashing Station",
    "Firewood/Ice",
    "Program Area"
  ],
},
{
  "name": "Blomidon",
  "types_of_Campsites": [
    "unserviced",
    "group campsite"
  ],
  "place": "3138 Pereau Road, Canning, NS B0P 1H0",
  "properties": [
    "Park office",
    "Registration Kiosk",
    "Restrooms with showers",
    "Day Use/Picnic Area",
    "Hiking Trail"
  ],
  "size": "759 ha (1,875 acres)"
},
{
  "name": "Boylston",
  "types_of_Campsites": [
    "unserviced"
  ],
  "place": "11131 Hwy 16, Boylston, NS B0H 1N0",
  "properties": [
    "Park office",
    "Restroom with showers",
    "Campsites",
    "Program Area",
    "Shoreline Access",
    "Paddling (Canoe/Kayak)"
  ],
},
{
  "name": "Cape Chignecto",
  "types_of_Campsites": [
    "backcountry",
    "walk-in",
    "kayak",
    "group campsite"
  ],
  "place": "1108 West Advocate Road, Advocate Harbour, NS B0M 1A0",
  "properties": [
    "Park office",
    "Pit Privies",
    "BBQ's/Fires",
    "Look Off"
  ],
},
{
  "name": "Caribou-Munroes Island",
  "types_of_Campsites": [
    "serviced",
    "unserviced",
    "walk-in"
  ],
  "place": "2119 Three Brooks Road, Caribou, NS B0K 1H0",
  "properties": [

```

```
    "Park office",
    "Restroom with showers",
    "Campsites",
    "Trailer Dump",
    "Swimming Unsupervised",
    "Day Use/Picnic Area"
  ]
},
{
  "name": "Dollar Lake",
  "types_of_Campsites": [
    "unserviced",
    "group campsite"
  ],
  "place": "5265 Old Guysborough Road, Wyse Corner, NS B0N 1V0",
  "properties": [
    "Park office",
    "Restroom with showers",
    "Campsites",
    "Flush toilets (day use)",
    "Beach access"
  ]
},
{
  "name": "Ellenwood Lake",
  "types_of_Campsites": [
    "serviced",
    "unserviced",
    "walk-in"
  ],
  "place": "1888 Mood Road, Deerfield, NS B0W 3E0",
  "properties": [
    "Park office",
    "Restroom with showers",
    "Registration Kiosk",
    "Firewood/Ice",
    "Beach Access",
    "Change House"
  ],
  "size": "114 ha (280 acre)"
},
{
  "name": "Five Islands",
  "types_of_Campsites": [
    "serviced",
    "unserviced",
    "walk-in"
  ],
  "place": "618 Bentley Branch Road (Hwy 2), Five Islands, NS B0M 1K0",
  "properties": [
    "Park office",
    "Restroom with showers",
    "Campsites",
    "Firewood/Ice",
    "Beach Access",
    "Change House"
  ]
},
{
  "name": "Graves Island",
  "types_of_Campsites": [
    "serviced",
    "unserviced",
    "walk-in"
  ]
}
```

```

],
"place": "230 Graves Island Road, East Chester, NS B0J 1J0",
"properties": [
  "Park office",
  "Restroom with showers",
  "Campsites",
  "Paddling (Canoe/Kayak)",
  "Firewood/Ice",
  "Beach Access",
  "Change House"
]
},
{
  "name": "Laurie",
  "types_of_Campsites": [
    "unserviced",
    "walk-in"
  ],
  "place": "4949 Hwy 2, Grand Lake, NS B0N 1Z0\n",
  "properties": [
    "Park office",
    "Restroom with showers",
    "Campsites",
    "Paddling (Canoe/Kayak)",
    "Firewood/Ice",
    "Beach Access"
  ]
},
{
  "name": "Mira River",
  "types_of_Campsites": [
    "serviced",
    "unserviced",
    "walk-in"
  ],
  "place": "439 Brickyard Road, Albert Bridge, NS B1K 2R9",
  "properties": [
    "Park office",
    "Restroom with showers",
    "Campsites",
    "Paddling (Canoe/Kayak)",
    "Firewood/Ice",
    "Unsupervised swimming"
  ]
},
{
  "name": "Porters Lake",
  "types_of_Campsites": [
    "serviced",
    "unserviced",
    "walk-in"
  ],
  "place": "1160 West Porters Lake Road, Porters Lake, NS B3E 1L3",
  "properties": [
    "Park office",
    "Restroom with showers",
    "Campsites",
    "Paddling (Canoe/Kayak)",
    "Firewood/Ice",
    "Unsupervised swimming"
  ]
},
{
  "name": "Rissers Beach",

```



```

"types_of_Campsites": [
  "serviced",
  "unserviced",
  "walk-in"
],
"place": "5366 Hwy 331, Crescent Beach, NS B4V 6P2",
"properties": [
  "Park office",
  "Restroom with showers",
  "Campsites",
  "Paddling (Canoe/Kayak)",
  "Firewood/Ice",
  "Unsupervised swimming"
]
},
{
  "name": "Salsman",
  "types_of_Campsites": [
    "unserviced"
  ],
  "place": "15641 Hwy 316, Country Harbour, NS B0H 1J0",
  "properties": [
    "Park office",
    "Restroom with showers",
    "Campsites",
    "Paddling (Canoe/Kayak)",
    "Fishing"
  ]
},
{
  "name": "Smileys",
  "types_of_Campsites": [
    "unserviced",
    "walk-in",
    "group campsite"
  ],
  "place": "109 Clayton McKay Road, Hwy 14, Brooklyn, NS B0N 2A0",
  "properties": [
    "Park office",
    "Restroom with showers",
    "Campsites",
    "Swimming Unsupervised",
    "Fishing",
    "Change House"
  ]
},
{
  "name": "The Islands",
  "types_of_Campsites": [
    "unserviced",
    "walk-in",
    "group campsite"
  ],
  "place": "183 Islands Park Road, Shelburne, NS B0T 1W0",
  "properties": [
    "Park office",
    "Restroom with showers",
    "Campsites",
    "Fishing",
    "Boat Launch"
  ]
},
{
  "name": "Thomas Raddall",

```

```

    "types_of_Campsites": [
      "unserviced",
      "walk-in",
      "group campsite"
    ],
    "place": "529 Raddall Park Road, Port Joli, NS B0T 1S0",
    "properties": [
      "Park office",
      "Restroom with showers",
      "Campsites",
      "Swimming Unsupervised",
      "Fishing",
      "Paddling (Canoe/Kayak)"
    ]
  },
  {
    "name": "Valleyview",
    "types_of_Campsites": [
      "unserviced",
      "walk-in",
      "group campsite"
    ],
    "place": "960 Hampton Mountain Road, Bridgetown, NS B0S 1L0",
    "properties": [
      "Park office",
      "Restroom with showers",
      "Campsites",
      "Day Use/Picnic Area",
      "Fishing",
      "Hiking Trail"
    ]
  },
  {
    "name": "Whycocomagh",
    "types_of_Campsites": [
      "serviced",
      "unserviced",
      "walk-in",
      "group campsite"
    ],
    "place": "89 Provincial Park Road, Whycocomagh, NS B0E 3M0",
    "properties": [
      "Park office",
      "Restroom with showers",
      "Campsites",
      "3 Yurts",
      "Hiking Trail",
      "Playground"
    ]
  }
]

```

Link to gitlab: https://git.cs.dal.ca/rtyagi/csci5410_b00872269_ruhirajnish_tyagi/-/tree/main/src/main/java/part_c_dynamoDb