

## Problem Statement:

Given a JSON schema for a query, design and implement a UI to display a form that can be used to create this query. On submit of this form show the final Query JSON on the HTML page below the form.

The form should display the help for the fields as per the description provided in the JSON schema.

Write unit tests to test the validation of the above form.

You can use any frontend framework/library such as Angular, Backbone, Bootstrap, jQuery etc.

## JSON Schema for Query

```
{
  "type": "object",
  "$schema": "http://json-schema.org/draft-03/schema",
  "properties": {
    "start_time": {
      "type": "number",
      "description": "End Time in UNIX Epoch format"
    },
    "end_time": {
      "type": "number",
      "description": "End Time in UNIX Epoch format"
    },
    "select_fields": {
      "type": "array",
      "items": {
        "type": "string"
      }
    },
    "table": {
      "type": "string",
      "description": "Table Name used for the query"
    },
    "where": {
      "type": "array",
      "items": {
        "type": "array"
      }
    }
  }
}
```

## Definitions:

1. **start\_time** and **end\_time** are valid **UNIX Epoch time**
2. **Options for select\_fields:** time, source\_vn, destination\_vn, source\_port, destination\_port, traffic
3. **Table Name:** traffic\_table
4. **Options for operator:** =, !=

**5. Where clause:** The where clause is a combination of OR of AND clauses. The following is a example of a where clause and corresponding JSON object:

**Clause**

(source\_vn = frontend-vn AND sort\_port = 9000) OR (destination\_vn != backend-vn AND destination\_port = 9001)

**JSON**

```
"where": [
  [{"name": "source_vn", "value": "frontend-vn", "operator": "="},
   {"name": "source_port", "value": 9000, "operator": "="}],
  [{"name": "destination_vn", "value": "backend-vn", "operator": "!="},
   {"name": "destination_port", "value": 9001, "operator": "="}]
]
```

**Example of Query JSON**

```
{
  "table_name": "traffic_table",
  "start_time": 1484853180000000,
  "end_time": 1484853780000000,
  "select_fields": ["time", "source_vn", "destination_vn", "source_port",
"destination_port", "traffic"],
  "where_clause": [
    [{
      "name": "source_vn",
      "value": "frontend-vn",
      "operator": "="
    }, {
      "name": "source_port",
      "value": "9000",
      "operator": "="
    }],
    [{
      "name": "destination_vn",
      "value": "backend-vn",
      "operator": "!="
    }, {
      "name": "destination_port",
      "value": 9001,
      "operator": "="
    }]
  ]
}
```