

# Organization Relationships

The goal of this task is to create a RESTful service that stores organisations with relations (parent to child relation). Organization name is unique. One organisation may have multiple parents and daughters. All relations and organisations are inserted with one request (endpoint 1).

API has a feature to retrieve all relations of one organization (endpoint 2). This endpoint response includes all parents, daughters and sisters of a given organization. Good luck!

Additional requirements:

1. Accepted programming languages: PHP, Node.js
2. Database: MySQL, SQLite or PostgreSQL

The service endpoints:

- 1) REST API endpoint that would allow to add many organization with relations in one POST request:

```
{
  "org_name": "Paradise Island",
  "daughters": [{
    "org_name": "Banana tree",
    "daughters": [{
      "org_name": "Yellow Banana"
    }, {
      "org_name": "Brown Banana"
    }, {
      "org_name": "Black Banana"
    }]
  }, {
    "org_name": "Big banana tree",
    "daughters": [{
      "org_name": "Yellow Banana"
    }, {
      "org_name": "Brown Banana"
    }, {
      "org_name": "Green Banana"
    }, {
      "org_name": "Black Banana",
      "daughters": [{
        "org_name": "Phoneutria Spider"
      }]
    }]
  }]
}
```

- 2) REST API endpoint that returns relations of one organization (queried by name). All organization daughters, sisters and parents are returned as one list. List is **ordered by name** and one page may **return 100 rows** at max with pagination support. For example if you query relations for organization “Black Banana”, you will get:

```
{
  {
    "relationship_type": "parent",
    "org_name": "Banana tree"
  }, {
    "relationship_type": "parent",
    "org_name": "Big banana tree"
  }, {
    "relationship_type": "sister",
    "org_name": "Brown Banana"
  }, {
    "relationship_type": "sister",
    "org_name": "Green Banana"
  }, {
    "relationship_type": "daughter",
    "org_name": "Phoneutria Spider"
  }, {
    "relationship_type": "sister",
    "org_name": "Yellow Banana"
  }
}
```

- 3) Think about the performance and be prepared to discuss on it:
- a) Could this service perform well even with up to 100K relations per one organization?
  - b) What would you change in architecture if 1M relations support is needed?