Testing Api’s

1. Add State

<http://localhost:5000/api/addState?token=ValidToken>

{

        "name": "Maharashtra",

        "population": 124000000,

        "area": 307713,

        "capital": "Mumbai",

        "climate": "Tropical Monsoon"

    }

Result  
  
{

    "success": **true**,

    "statusCode": 201,

    "message": "State added successfully",

    "data": {

        "name": "Maharashtra",

        "population": 124000000,

        "area": 307713,

        "capital": "Mumbai",

        "climate": "Tropical Monsoon",

        "\_id": "67d277e0d31b6d261efbd6e6",

        "createdAt": "2025-03-13T06:14:56.662Z",

        "updatedAt": "2025-03-13T06:14:56.662Z",

        "\_\_v": 0

    }

}

1. Add State with Same name
2. {
3. "name": "Maharashtra",
4. "population": 124000000,
5. "area": 307713,
6. "capital": "Mumbai",
7. "climate": "Tropical Monsoon"
8. }

Result

{

    "success": **false**,

    "statusCode": 400,

    "message": "State with the same name already exists!"

}

3. Invalid Population or Area Size

{

        "name": "Bangalore",

        "population": 15000000000,

        "area": 307713,

        "capital": "Bangalore",

        "climate": "Tropical Monsoon"

    }

Result

{

    "success": **false**,

    "message": "Invalid population or area size."

}

4. Invalid Population Data

{

        "name": "Bangalore",

        "population": "jhhhhh",

        "area": 307713,

        "capital": "Bangalore",

        "climate": "Tropical Monsoon"

    }

Result

{

    "error": "Validation failed",

    "details": "states validation failed: population: Cast to Number failed for value \"jhhhhh\" (type string) at path \"population\""

}

5. Add District Data for Karnataka State  
  
{

    "name": "Ramanagara ",

    "population" : 1082636,

    "state\_id" : "67d25ce36a514c9f9f50b1d4"

}

Result  
{

    "success": **true**,

    "message": "District added successfully",

    "data": {

        "name": "Ramanagara ",

        "population": 1082636,

        "state\_id": "67d25ce36a514c9f9f50b1d4",

        "\_id": "67d284917309661ac1de9ad7",

        "createdAt": "2025-03-13T07:09:05.075Z",

        "updatedAt": "2025-03-13T07:09:05.075Z",

        "\_\_v": 0

    }

}

5. Invalid Object Id passed to the above record  
  
{

    "name": "Ramanagara ",

    "population" : 1082636,

    "state\_id" : "67d25ce36a514c9f9f50b"

}

Result  
{

    "error": "Invalid ID format"

}

6. Fetch Population of a State  
http://localhost:5000/api/states/Kerala/population?token=ValidToken

Result is  
{

    "success": **true**,

    "statusCode": 200,

    "state": "Kerala",

    "population": 36000000

}

7. Invalid State for the above request  
http://localhost:5000/api/states/Ker/population?token=ValidToken

{

    "success": **false**,

    "statusCode": 404,

    "message": "State not found."

}

8. UpdatePopulationOfDistrict

<http://localhost:5000/api/districts/Ramanagara/population?token=ValidToken>

Result

{

    "success": **true**,

    "statusCode": 200,

    "message": "District population updated successfully.",

    "district": {

        "\_id": "67d284917309661ac1de9ad7",

        "name": "Ramanagara",

        "population": 1200000,

        "state\_id": "67d25ce36a514c9f9f50b1d4",

        "createdAt": "2025-03-13T07:09:05.075Z",

        "updatedAt": "2025-03-13T16:43:05.096Z",

        "\_\_v": 0

    }

}

9. Delete District Endpoint:

<http://localhost:5000/api/districts/Thiruvananthapuram?token=ValidToken>

Result

{

    "success": **true**,

    "statusCode": 200,

    "message": "District 'Thiruvananthapuram' deleted successfully",

    "data": {

        "\_id": "67d30c3f63698abc442d3fd6",

        "name": "Thiruvananthapuram",

        "population": 3300000,

        "state\_id": "67d25bbe6a514c9f9f50b1ce",

        "createdAt": "2025-03-13T16:47:59.626Z",

        "updatedAt": "2025-03-13T16:47:59.626Z",

        "\_\_v": 0

    }

}

1. Compute Total Population Across All States

<http://localhost:5000/api/states/total-population?token=ValidToken>

Result

{

    "success": **true**,

    "statusCode": 200,

    "message": "Total population calculated successfully",

    "totalPopulation": 481000000

}

1. Group and Sort Districts by Population

<http://localhost:5000/api/districts/group-by-state?token=ValidToken>

Result

{

    "success": **true**,

    "statusCode": 200,

    "message": "Districts grouped and sorted by state successfully.",

    "data": [

        {

            "totalPopulation": 10821551,

            "state": "Karnataka"

        },

        {

            "totalPopulation": 7100000,

            "state": "Tamil Nadu"

        },

        {

            "totalPopulation": 6004000,

            "state": "Kerala"

        }

    ]

}

1. Join States with Districts

<http://localhost:5000/api/districts/with-states?token=ValidToken>

Result

{

    "success": **true**,

    "statusCode": 200,

    "message": "Districts joined with states successfully.",

    "data": [

        {

            "population": 1200000,

            "district": "Ramanagara",

            "state": "Karnataka",

            "statePopulation": 69000000,

            "stateArea": 191791,

            "stateCapital": "Bangalore"

        },

        {

            "population": 9621551,

            "district": "Bengaluru Urban",

            "state": "Karnataka",

            "statePopulation": 69000000,

            "stateArea": 191791,

            "stateCapital": "Bangalore"

        },

        {

            "population": 7100000,

            "district": "Chennai",

            "state": "Tamil Nadu",

            "statePopulation": 72000000,

            "stateArea": 130058,

            "stateCapital": "Chennai"

        },

        {

            "population": 2650000,

            "district": "Kollam",

            "state": "Kerala",

            "statePopulation": 36000000,

            "stateArea": 38863,

            "stateCapital": "Trivandrum"

        },

        {

            "population": 1197000,

            "district": "Pathanamthitta",

            "state": "Kerala",

            "statePopulation": 36000000,

            "stateArea": 38863,

            "stateCapital": "Trivandrum"

        },

        {

            "population": 846000,

            "district": "Wayanad",

            "state": "Kerala",

            "statePopulation": 36000000,

            "stateArea": 38863,

            "stateCapital": "Trivandrum"

        },

        {

            "population": 1311000,

            "district": "Kasaragod",

            "state": "Kerala",

            "statePopulation": 36000000,

            "stateArea": 38863,

            "stateCapital": "Trivandrum"

        }

    ]

}

1. Average Population Density Endpoint:

<http://localhost:5000/api/states/average-density?token=ValidToken>

{

    "success": **true**,

    "statusCode": 200,

    "message": "Average population density calculated successfully.",

    "data": [

        {

            "state": "Kerala",

            "populationDensity": 926.3309574659702

        },

        {

            "state": "Tamil Nadu",

            "populationDensity": 553.599163450153

        },

        {

            "state": "Karnataka",

            "populationDensity": 359.7666209571878

        },

        {

            "state": "Gujarat",

            "populationDensity": 326.4906337999429

        },

        {

            "state": "Madhya Pradesh",

            "populationDensity": 278.9038430355116

        },

        {

            "state": "Punjab",

            "populationDensity": 595.6872244946587

        },

        {

            "state": "Maharashtra",

            "populationDensity": 402.9729000724701

        }

    ]

}

1. Retrieve All States

<http://localhost:5000/api/states?token=ValidToken>

Result

{

    "success": **true**,

    "statusCode": 200,

    "message": "States retrieved successfully.",

    "data": [

        {

            "\_id": "67d25bbe6a514c9f9f50b1ce",

            "name": "Kerala",

            "population": 36000000,

            "area": 38863,

            "capital": "Trivandrum",

            "climate": "Tropical Monsoon Climate",

            "createdAt": "2025-03-13T04:14:54.708Z",

            "updatedAt": "2025-03-13T04:14:54.708Z",

            "\_\_v": 0

        },

        {

            "\_id": "67d25cd56a514c9f9f50b1d1",

            "name": "Tamil Nadu",

            "population": 72000000,

            "area": 130058,

            "capital": "Chennai",

            "climate": "Tropical Wet and Dry",

            "createdAt": "2025-03-13T04:19:33.152Z",

            "updatedAt": "2025-03-13T04:19:33.152Z",

            "\_\_v": 0

        },

        {

            "\_id": "67d25ce36a514c9f9f50b1d4",

            "name": "Karnataka",

            "population": 69000000,

            "area": 191791,

            "capital": "Bangalore",

            "climate": "Tropical Savanna",

            "createdAt": "2025-03-13T04:19:47.389Z",

            "updatedAt": "2025-03-13T04:19:47.389Z",

            "\_\_v": 0

        },

        {

            "\_id": "67d25cef6a514c9f9f50b1d7",

            "name": "Gujarat",

            "population": 64000000,

            "area": 196024,

            "capital": "Gandhinagar",

            "climate": "Tropical Wet and Dry",

            "createdAt": "2025-03-13T04:19:59.402Z",

            "updatedAt": "2025-03-13T04:19:59.402Z",

            "\_\_v": 0

        },

        {

            "\_id": "67d25cfc6a514c9f9f50b1da",

            "name": "Madhya Pradesh",

            "population": 86000000,

            "area": 308350,

            "capital": "Bhopal",

            "climate": "Tropical Wet and Dry",

            "createdAt": "2025-03-13T04:20:12.730Z",

            "updatedAt": "2025-03-13T04:20:12.730Z",

            "\_\_v": 0

        },

        {

            "\_id": "67d25d066a514c9f9f50b1dd",

            "name": "Punjab",

            "population": 30000000,

            "area": 50362,

            "capital": "Chandigarh",

            "climate": "Subtropical",

            "createdAt": "2025-03-13T04:20:22.190Z",

            "updatedAt": "2025-03-13T04:20:22.190Z",

            "\_\_v": 0

        },

        {

            "\_id": "67d277e0d31b6d261efbd6e6",

            "name": "Maharashtra",

            "population": 124000000,

            "area": 307713,

            "capital": "Mumbai",

            "climate": "Tropical Monsoon",

            "createdAt": "2025-03-13T06:14:56.662Z",

            "updatedAt": "2025-03-13T06:14:56.662Z",

            "\_\_v": 0

        }

    ]

}

1. Retrieve All Districts Endpoint:

<http://localhost:5000/api/districts?token=ValidToken>

Result

{

    "success": **true**,

    "statusCode": 200,

    "message": "Districts retrieved successfully.",

    "data": [

        {

            "\_id": "67d284917309661ac1de9ad7",

            "name": "Ramanagara",

            "population": 1200000,

            "state\_id": {

                "\_id": "67d25ce36a514c9f9f50b1d4",

                "name": "Karnataka"

            },

            "createdAt": "2025-03-13T07:09:05.075Z",

            "updatedAt": "2025-03-13T16:43:05.096Z",

            "\_\_v": 0

        },

        {

            "\_id": "67d30be863698abc442d3fd3",

            "name": "Bengaluru Urban",

            "population": 9621551,

            "state\_id": {

                "\_id": "67d25ce36a514c9f9f50b1d4",

                "name": "Karnataka"

            },

            "createdAt": "2025-03-13T16:46:32.897Z",

            "updatedAt": "2025-03-13T16:46:32.897Z",

            "\_\_v": 0

        },

        {

            "\_id": "67d30c8c63698abc442d3fd9",

            "name": "Chennai",

            "population": 7100000,

            "state\_id": {

                "\_id": "67d25cd56a514c9f9f50b1d1",

                "name": "Tamil Nadu"

            },

            "createdAt": "2025-03-13T16:49:16.654Z",

            "updatedAt": "2025-03-13T16:49:16.654Z",

            "\_\_v": 0

        },

        {

            "\_id": "67d30d0f63698abc442d3fdc",

            "name": "Kollam",

            "population": 2650000,

            "state\_id": {

                "\_id": "67d25bbe6a514c9f9f50b1ce",

                "name": "Kerala"

            },

            "createdAt": "2025-03-13T16:51:27.015Z",

            "updatedAt": "2025-03-13T16:51:27.015Z",

            "\_\_v": 0

        },

        {

            "\_id": "67d30d2e63698abc442d3fdf",

            "name": "Pathanamthitta",

            "population": 1197000,

            "state\_id": {

                "\_id": "67d25bbe6a514c9f9f50b1ce",

                "name": "Kerala"

            },

            "createdAt": "2025-03-13T16:51:58.718Z",

            "updatedAt": "2025-03-13T16:51:58.718Z",

            "\_\_v": 0

        },

        {

            "\_id": "67d30d7563698abc442d3fe2",

            "name": "Wayanad",

            "population": 846000,

            "state\_id": {

                "\_id": "67d25bbe6a514c9f9f50b1ce",

                "name": "Kerala"

            },

            "createdAt": "2025-03-13T16:53:09.216Z",

            "updatedAt": "2025-03-13T16:53:09.216Z",

            "\_\_v": 0

        },

        {

            "\_id": "67d30d9f63698abc442d3fe5",

            "name": "Kasaragod",

            "population": 1311000,

            "state\_id": {

                "\_id": "67d25bbe6a514c9f9f50b1ce",

                "name": "Kerala"

            },

            "createdAt": "2025-03-13T16:53:51.658Z",

            "updatedAt": "2025-03-13T16:53:51.658Z",

            "\_\_v": 0

        }

    ]

}