

CDAC Mumbai

Module: WPT

Designing APIs using GET Requests

Objective

Learn to design clean and meaningful APIs using **Express.js GET routes**, focusing on:

- Route naming conventions
 - Using **URL parameters** and **query parameters** effectively
 - Returning structured JSON responses
 - Writing clean, reusable route logic
-

Implement

Q1. Basic Welcome Route

Create a GET route `/` that returns:

```
{ "message": "Welcome to My First API!" }
```

Q2. Greeting API

Design a route `/greet/:name` Example:

```
/greet/Baburao
```

Response:

```
{ "message": "Hello Baburao, welcome to Express.js!" }
```

Q3. Calculator API

Design routes for each operation:

Route	Example URL	Expected Output
<code>/add/:a/:b</code>	<code>/add/4/6</code>	<code>{ "sum": 10 }</code>

Route	Example URL	Expected Output
<code>/subtract/:a/:b</code>	<code>/subtract/9/4</code>	<code>{ "difference": 5 }</code>
<code>/multiply/:a/:b</code>	<code>/multiply/3/5</code>	<code>{ "product": 15 }</code>
<code>/divide/:a/:b</code>	<code>/divide/10/2</code>	<code>{ "quotient": 5 }</code>

Return a friendly error if `b` is 0 for division.

Q5. Number Series API

Design a route `/series/:n` It should return all numbers from 1 to `n`: Example:

```
/series/5
```

Response:

```
{ "numbers": [1, 2, 3, 4, 5] }
```

Q6. Temperature Conversion API

Create a route `/toCelsius/:fahrenheit` Convert Fahrenheit → Celsius Formula: $(F - 32) * 5/9$ Example:

```
/toCelsius/100
```

Response:

```
{ "fahrenheit": 100, "celsius": 37.78 }
```

Q7. Word Analyzer API

Create a route `/analyze/:word` that returns:

```
{
  "word": "express",
  "length": 7,
  "isPalindrome": false
}
```

Q8. Country Info API (Static Data)

Use a **hardcoded array**:

```
const countries = [
  { name: "India", capital: "New Delhi", currency: "INR" },
  { name: "USA", capital: "Washington, D.C.", currency: "USD" },
  { name: "Japan", capital: "Tokyo", currency: "JPY" },
];
```

Create:

- `/countries` → return all
- `/countries/:name` → return single match (case-insensitive)

Example:

```
/countries/india
```

Response:

```
{ "name": "India", "capital": "New Delhi", "currency": "INR" }
```

Q9. Date & Time API

Create a route `/datetime` that returns:

```
{
  "date": "27-10-2025",
  "time": "20:15:45"
}
```

Use `new Date()` and format manually.

Extra Practice (Optional)

- Add `/random/:min/:max` → returns a random number between the given range.
- Add `/reverse/:text` → reverses the given string.