

Problem Statement

This is a sample problem to understand the problem pattern for the preliminary round.

You will have to implement a backend system for a new e-book platform with the following APIs:

- Add books
- Get books
- Filter and sort

Step 1: Database creation

- prepare a database with a table to store books:
 - Columns: id, title, author, price.
- Import the following data into the database:

```
[
  {
    "id": 1,
    "title": "The Great Gatsby",
    "author": "F. Scott Fitzgerald",
    "price": 150
  },
  {
    "id": 2,
    "title": "1984",
    "author": "George Orwell",
    "price": 250
  },
  {
    "id": 3,
    "title": "Animal Farm",
    "author": "George Orwell",
    "price": 299
  }
]
```

Step 2 : Create API Endpoints

1. Add books
 - endpoint: /api/books
 - method: POST
 - description: User can add new books
 - response_type: json
 - response_status_code: 201
 - sample_output:

```
{
  "id": 4,
  "title": "Atomic Habits",
  "author": "James Clear",
  "price": 120
}
```

2. Get all books

- endpoint: /api/books
- method: GET
- description: User can see all available books
- response_type: json
- response_status_code: 200
- sample_output:

```
[
  {
    "id": 1,
    "title": "The Great Gatsby",
    "author": "F. Scott Fitzgerald",
    "price": 150
  },
  {
    "id": 2,
    "title": "1984",
    "author": "George Orwell",
    "price": 250
  },
  {
    "id": 3,
    "title": "Animal Farm",
    "author": "George Orwell",
    "price": 299
  }
]
```

3. Filter and Sort

- endpoint for author based search: /books?
author=George%20Orwell&sort=title&order=asc&limit=2
- method: GET
- description: books can be searched and filtered using author information
- response_type: json
- response_status_code: 200
- sample_output:

```
[
  {
    "id": 2,
    "title": "1984",
    "author": "George Orwell",
    "price": 250
  },
  {
    "id": 3,
    "title": "Animal Farm",
    "author": "George Orwell",
    "price": 299
  }
]
```

Try to deploy this web application on a web server or serve it from your PC using ngrok.