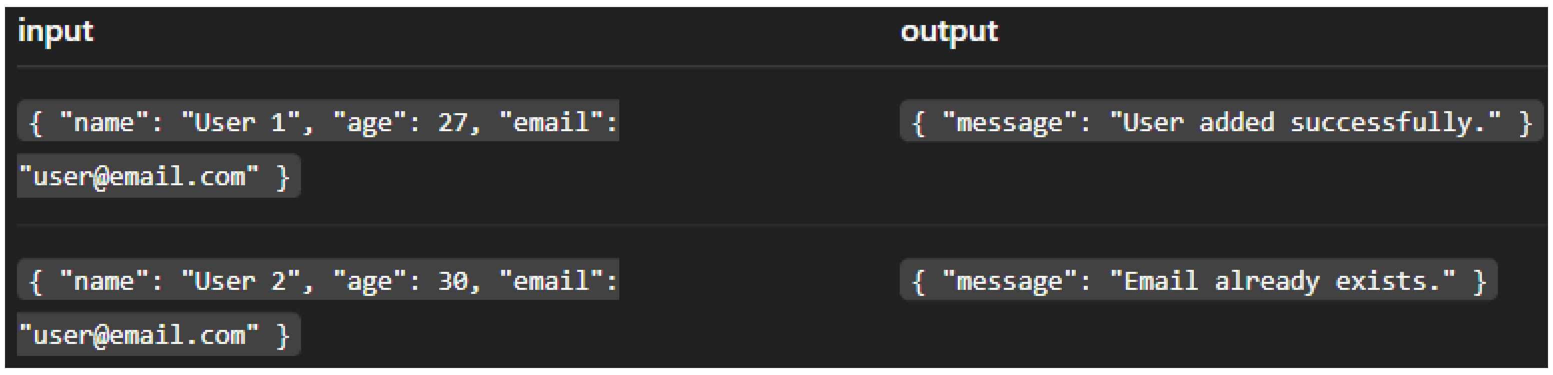
Assignment4

Part1:Simple CRUD Operations Using Express.js:

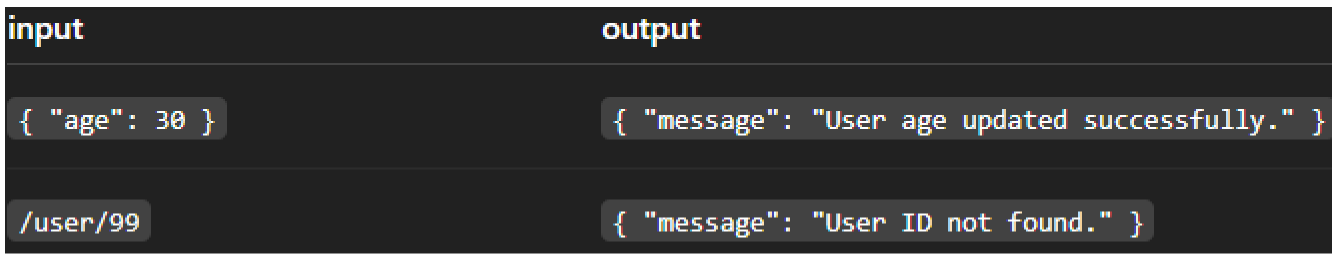
For all the following tasks, you must use the fs module to read and write data from a JSON file (e.g., users.json). Do not store or manage data using arrays. (2 Grades)

1. Create an API that adds a new user to your users stored in a JSON file. **(ensure that the email of the new user doesn't exist before)(1 Grades)**
   - **URL:** POST /user



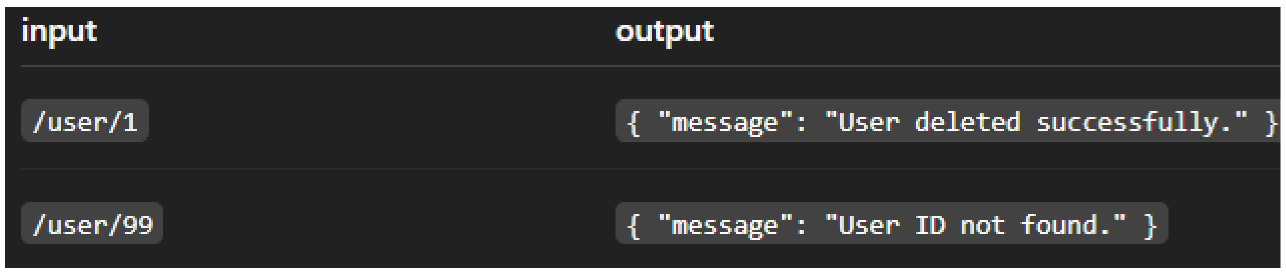
input	output
`{ "name": "User 1", "age": 27, "email": "user@email.com" }`	`{ "message": "User added successfully." }`
`{ "name": "User 2", "age": 30, "email": "user@email.com" }`	`{ "message": "Email already exists." }`

2. Create an API that updates an existing user's name, age, or email by their ID. The user ID should be retrieved from the **params**. **(1 Grade)**
   ***Note:* Remember to update the corresponding values in the JSON file**
   - **URL**: PATCH /user/:id



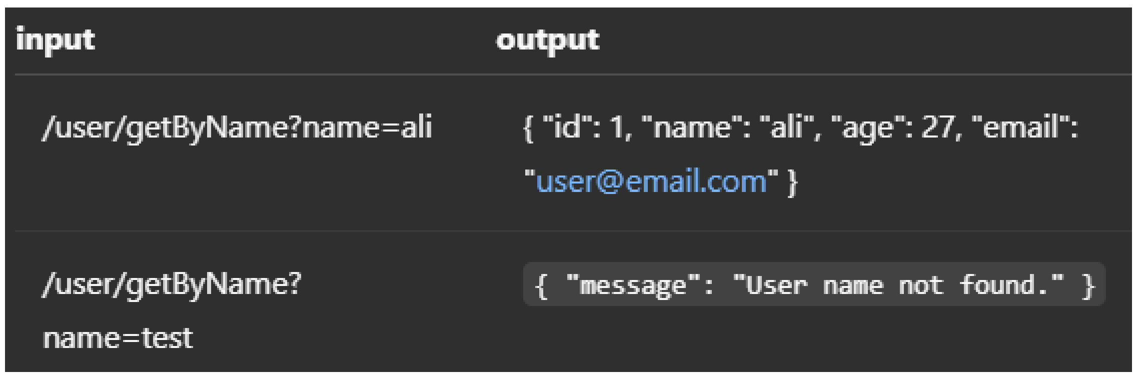
input	output
`{ "age": 30 }`	`{ "message": "User age updated successfully." }`
`/user/99`	`{ "message": "User ID not found." }`

3. Create an API that deletes a User by ID. The user id should be retrieved from either the **request body or optional params. (1 Grade)**
   ***Note:* Remember to delete the user from the file**
   - **URL:** DELETE /user{/:id}



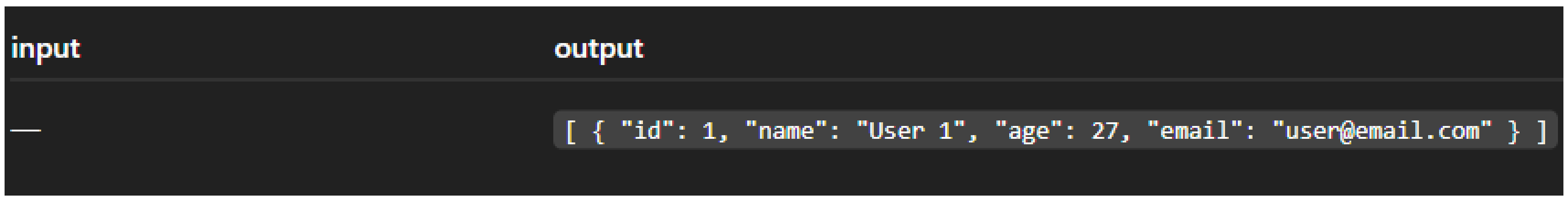
input	output
`/user/1`	`{ "message": "User deleted successfully." }`
`/user/99`	`{ "message": "User ID not found." }`

4. Create an API that gets a user by their name. The name will be provided as a **query parameter**. **(1 Grade)**
   - **URL:** GET /user/getByName



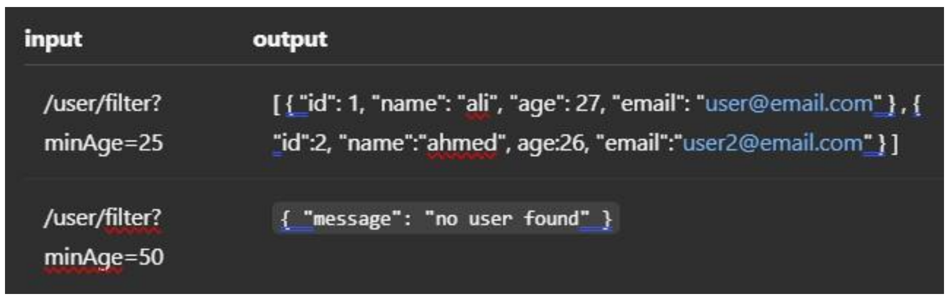
input	output
/user/getByName?name=ali	{ "id": 1, "name": "ali", "age": 27, "email": "user@email.com" }
/user/getByName?name=test	`{ "message": "User name not found." }`

5. Create an API that gets all users from the JSON file. **(1 Grade)**
   - **URL:** GET /user



input	output
—	`[ { "id": 1, "name": "User 1", "age": 27, "email": "user@email.com" } ]`

6. Create an API that filters users by minimum age. **(1 Grade)**
   - **URL:** GET /user/filter



input	output
/user/filter?minAge=25	[{ "id": 1, "name": "ali", "age": 27, "email": "user@email.com" }, { "id":2, "name":"ahmed", age:26, "email":"user2@email.com" }]
/user/filter?minAge=50	`{ "message": "no user found" }`

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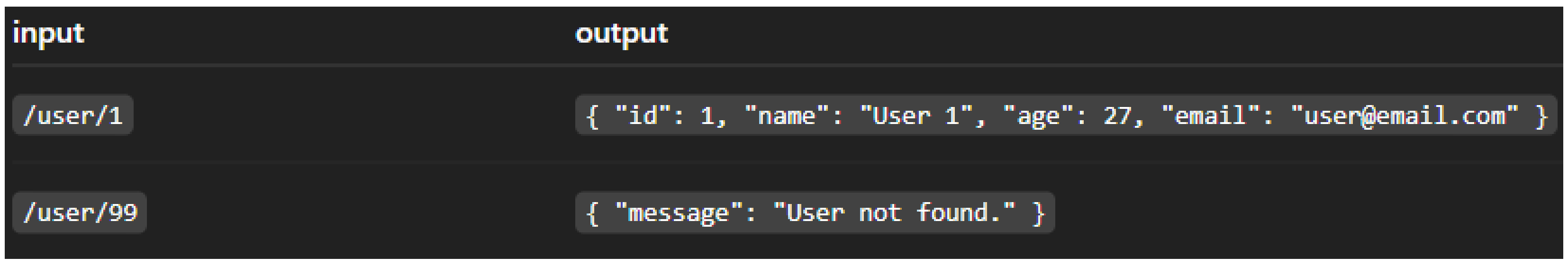
7. Create an API that gets User by ID. **(1 Grade)**
   - **URL:** GET /user/:id
   - **Output:**



input	output
`/user/1`	`{ "id": 1, "name": "User 1", "age": 27, "email": "user@email.com" }`
`/user/99`	`{ "message": "User not found." }`

Part 2: ERD Diagram (1 Grade)

Musicana records have decided to store information on musicians who perform on their albums in a database. The company has wisely chosen to hire you as a database designer.

- Each musician that is recorded at Musicana has an ID number,a name, an address (street, city) and a phone number.
- Each instrument that is used in songs recorded at Musicana has a unique name and a musical key (e.g., C, B-flat, E-flat).
- Each album that is recorded at the Musicana label has a unique title, a copyright date, and an album identifier.
- Each song recorded at Musicana has a unique title and an author.
- Each musician may play several instruments, and a given instrument may be played by several musicians.
- Each album has a number of songs on it, but no song may appear on more than one album.
- Each song is performed by one or more musicians, and a musician may perform a number of songs.
- Each album has exactly one musician who acts as its producer.
- A producer may produce several albums.

Important Notes about postman

1. **Name the endpoint with a meaningful name like 'Add User', not dummy names.**
2. **Save your changes on each request(ctrl+s).**
3. **Include the Postman collection link (export your Postman collection) in the email with your assignment link**

Bonus (2 Grades)

How to deliver the bonus?

1- Solve the problem Longest Common Prefix on **LeetCode**

2- Inside your assignment folder, create a **SEPARATE FILE** and name it "bonus.js"

3- Copy the code that you have submitted on the website inside "bonus.js" file