



Green University of Bangladesh

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API Testing

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Contents

0.1	API Testing	2
0.2	GET Method	2
0.2.1	GET Method Output Explanation	2
0.3	GET an image using ID name	3
0.3.1	Output	3
0.4	POST Method	4
0.4.1	POST Method Output Explanation	4
0.5	UPDATE Method	4
0.5.1	UPDATE Method Output Explanation	5
0.6	DELETE Method	5
0.6.1	DELETE Method Output Explanation	6

0.1 API Testing

API testing is a type of software testing that analyzes an application program interface (API) to verify that it fulfills its expected functionality, security, performance and reliability. API CRUD operations refer to the basic operations performed on a resource through an API (Application Programming Interface). CRUD stands for Create, Read, Update, and Delete, representing the common actions that can be performed on data.

0.2 GET Method

The read operation is used to retrieve existing resources from the system. It allows you to fetch data from the API endpoint. The read operation can be performed in different ways, such as retrieving a single resource by its unique identifier or fetching a list of resources. Generally, this operation corresponds to an HTTP GET request.

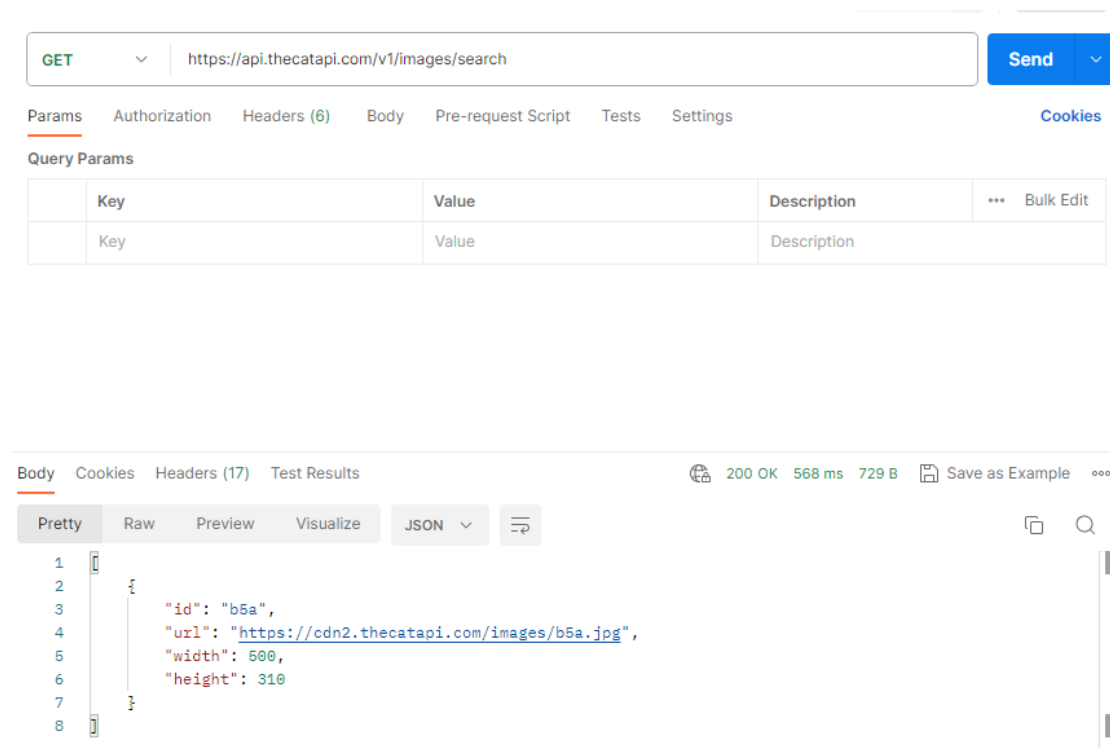


Figure 1: Get method

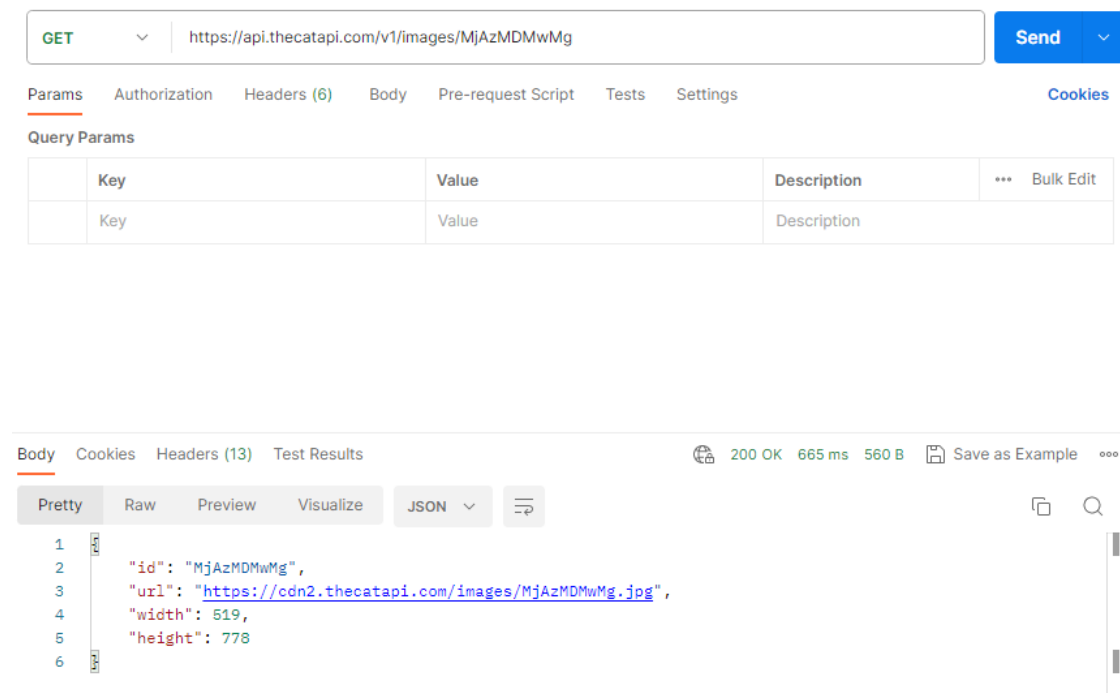
0.2.1 GET Method Output Explanation

From this output figure, we see that we have got JSON(JavaScript Object Notation) data where we have an id, url, width and height of an image as well a response code of 200.

0.3 GET an image using ID name

We can get an image using the ID name of the figure from the API. <https://api.thecatapi.com/v1/images/MjAzMDMwMg> using this path we can get it.

0.3.1 Output



The screenshot displays a REST client interface. At the top, a GET request is configured for the URL `https://api.thecatapi.com/v1/images/MjAzMDMwMg`. Below the URL bar, tabs for 'Params', 'Authorization', 'Headers (6)', 'Body', 'Pre-request Script', 'Tests', and 'Settings' are visible, with 'Params' currently selected. A table for 'Query Params' is shown with columns for 'Key', 'Value', and 'Description'. The 'Body' tab is active, showing a JSON response in 'Pretty' format. The response status is '200 OK' with a response time of '665 ms' and a size of '560 B'. The JSON body contains the following data:

```
{
  "id": "MjAzMDMwMg",
  "url": "https://cdn2.thecatapi.com/images/MjAzMDMwMg.jpg",
  "width": 519,
  "height": 778
}
```

Figure 2: Get method

0.4 POST Method

The create operation is used to add a new resource to the system. It involves sending data to the API endpoint, which then processes and stores the information. Typically, this operation corresponds to an HTTP POST request. To create a new data we have authenticate using the key and value. I used key = x-api-key and Value = DEMO-API-KEY.

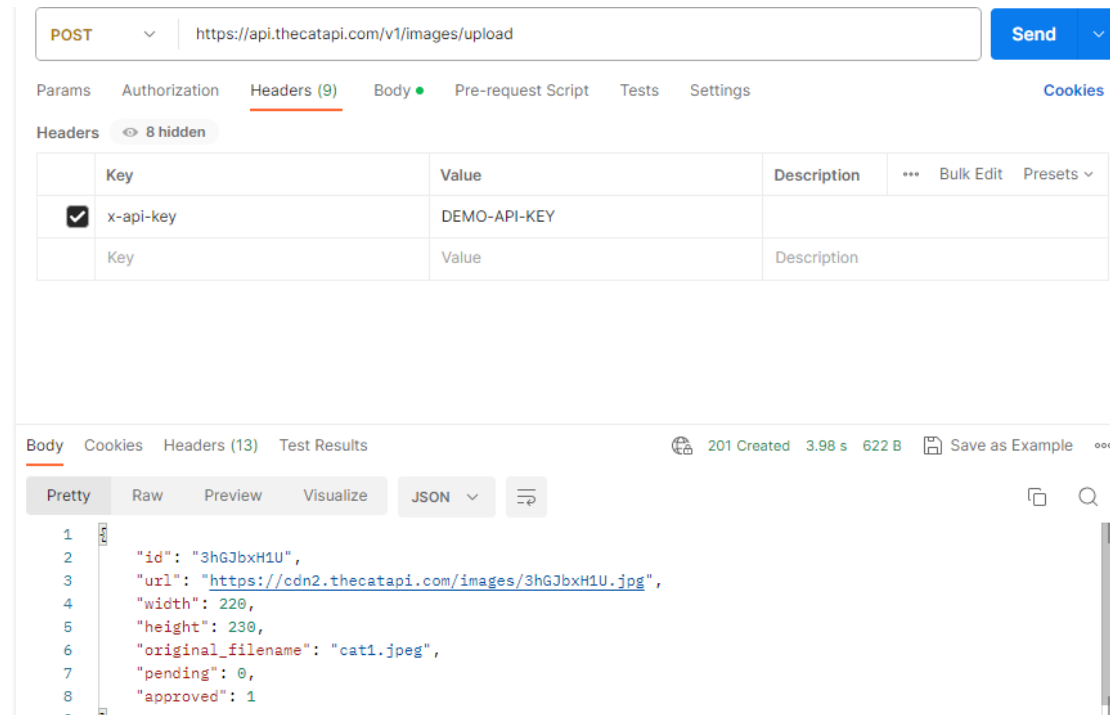


Figure 3: Post method

0.4.1 POST Method Output Explanation

Using this `https://api.thecatapi.com/v1/images/upload` path I have create or insert an image in the database using key and value. The create data is showing in the figure with a response code of 201. Key and value are x-api-key, DEMO-API-KEY. Without this key and value I can't create an image in database.

0.5 UPDATE Method

The update operation is used to modify an existing resource in the system. It involves sending data containing the changes to the API endpoint, which then updates the resource accordingly. Typically, this operation corresponds to an HTTP PUT or PATCH request, depending on whether you want to replace the entire resource or only update specific fields. To update a new data we have authenticate using the key and value. I used key = x-api-key and Value = DEMO-API-KEY.

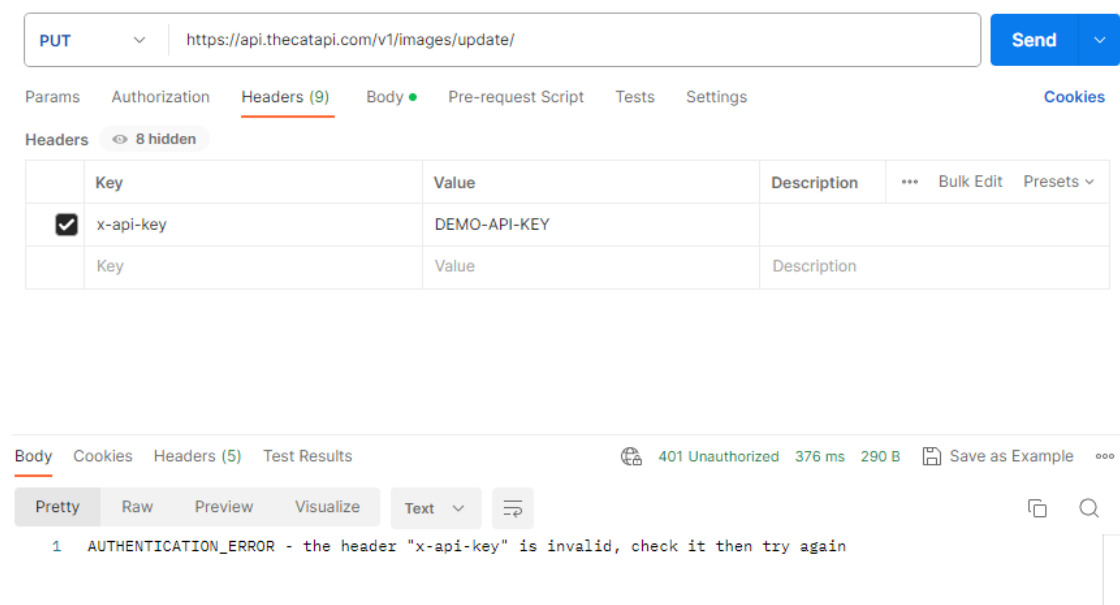


Figure 4: Put method

0.5.1 UPDATE Method Output Explanation

From the figure of the output we see that there is an authentication error with a response code. For this reason I couldn't update the image. So when we try to update any data/image we have to keep in mind that authentication is important. Without this authentication we never be able to do update.

0.6 DELETE Method

The delete operation is used to remove an existing resource from the system. It involves sending a request to the API endpoint specifying the resource to be deleted. Generally, this operation corresponds to an HTTP DELETE request. To update a new data we have authenticate using the key and value. I used key = x-api-key and Value = DEMO-API-KEY.

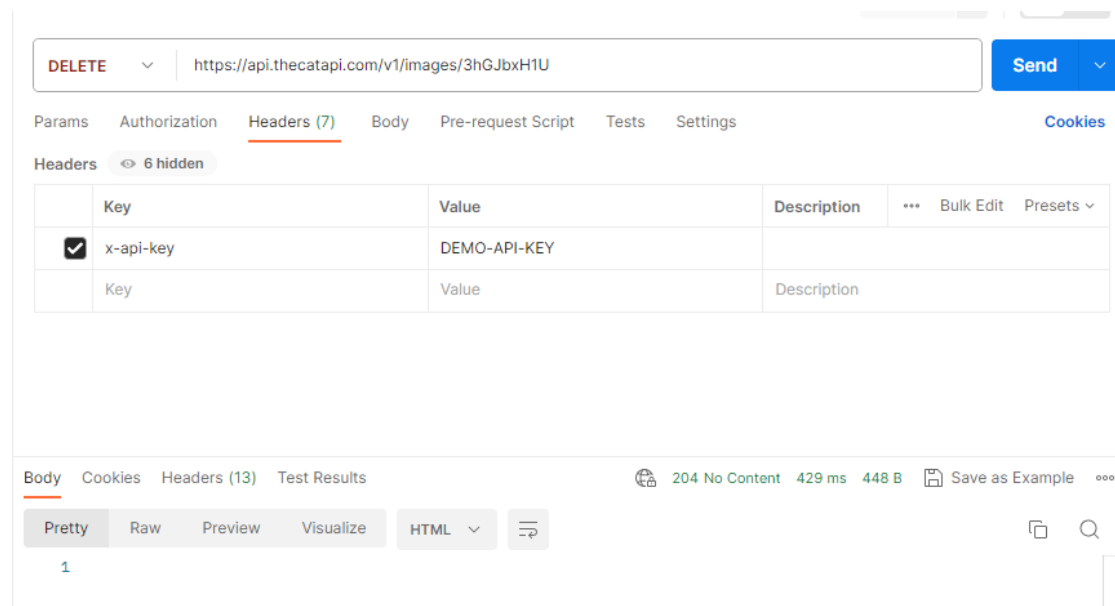


Figure 5: Get method

0.6.1 DELETE Method Output Explanation

From this figure we can see that there is no data. Because the data has already deleted. There was a response code 204 in the output figure. And one more thing we keep in min that if we deleted an item already and if we want to re-delete this data then it will show INVALID DATA with a response code of 404(Bad Request)