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# API Documentation

## Introduction

Below is each API endpoint and its function. Outlined is the input each endpoint accepts as well as the types of inputs that it does not accept.

Each function will either return a success message on completion of API function, or it will return an error message with instructions on what is wrong with the input.

All functions will return a JSON file that is formatted as follows:

On Success –

Status: Success
MSG: Payload
Action: none

On Failure –

Status: ERROR
MSG: Error Message
Action: Action to be taken by user

When calling a function from the URL it should be formatted as follows:

- /API/add_device?name=laptop

- /API/query_device_manufacturer?mid=100&did=12

## Functions

### add_device:

*Function –*

Adds a new device to the equipment database. Takes an input variable named "name", but input variable can NOT be empty or null. Device name can also not be longer than 24 characters, and will be automatically be put into lowercase before insertion. The function will return a success message upon successful insertion into the database.

*Input –*
- $name: (Required) Name of the device to be added to the database.

*Output –*

Returns a JSON response indicating the status of the update operation with the following possible messages:

- **"MSG: Device added"**: Indicates that the device was added successfully.
- **"MSG: Invalid or missing name**.": Indicates that the name of the device is missing or invalid.
- **"MSG: Name is too long"**: Indicates that the name exceeds the maximum allowed length of 24 characters.
- **"MSG: Device already exists"**: Indicates that a device with the same name already exists in the database.

*Usage–*

- /API/add_device?name=laptop
- /API/add_device?name=Projector

## add_manufacturer:

*Function –*

Adds a new manufacturer to the equipment database. Takes an input variable named "name", but input variable can NOT be empty or null. Manufacturer name can also not be longer than 24 characters, and will automatically have the first character of the name be uppercased before insertion. The function will return a success message upon successful insertion into the database.

*Input –*

- $name: (Required) The name of the manufacturer to be added to the database.

*Output –*

Returns a JSON response indicating the status of the update operation with the following possible messages:

- **"MSG: Manufacturer added"**: Indicates that the manufacturer was added successfully.
- **"MSG: Invalid or missing name**.": Indicates that the name of the manufacturer is missing or invalid.
- **"MSG: Name is too long"**: Indicates that the name exceeds the maximum allowed length of 24 characters.
- **"MSG: Manufacturer already exists"**: Indicates that a manufacturer with the same name already exists in the database.

*Usage–*

- /API/add_manufacturer?name=Toyota
- /API/add_manufacturer?name=fractal

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## add_equipment:

*Function –*

Adds a new equipment to the equipment database. Takes input variables named "did" for the device id, "mid" for the manufacturer id, and "sn" for the serial number. Input variables can NOT be empty or null, but the "mid" and "did" can either be their numerical ids (e.x. 12 or 123) or their actual name (e.x. Fitbit or laptop). The function will return a success message upon successful insertion into the database.

*Input –*

- $sn: (Required) Serial number. This parameter specifies the serial number of the equipment being added.
- $did: (Required) Device ID. This parameter specifies the ID of the device to which the serial number belongs.
- $mid: (Required) Manufacturer ID. This parameter specifies the ID of the manufacturer of the device.

*Output –*

Returns a JSON response indicating the status of the update operation with the following possible messages:

- "**MSG: Serial added**": Indicates that the serial number was added successfully.
- "**MSG: Invalid or missing device id**.": Indicates that the device ID is missing or invalid.
- "**MSG: Invalid or missing manufacturer id**.": Indicates that the manufacturer ID is missing or invalid.
- "**MSG: Invalid or missing serial number**.": Indicates that the serial number is missing or invalid.
- "**MSG: Serial number already exists**": Indicates that the serial number already exists in the database.
- "**MSG: Device not found**": Indicates that the specified device ID does not exist in the database.
- "**MSG: Manufacturer not found**": Indicates that the specified manufacturer ID does not exist in the database.

*Usage–*

- /API/add_equipment?sn=SN-009&did=laptop&mid=Apple
- /API/add_equipment?sn=SN-009&did=12&mid=100

## list_devices:

*Function –*

This function retrieves a list of devices from the database.

*Input –*

- $check: (Optional) A boolean parameter. If set to 'false', it returns all devices regardless of status. If not set or set to any other value, it returns only active devices.

*Output –*

Returns a JSON response containing a list of devices with the following message:

"**Status: Success**": Indicates a successful retrieval of device information.
"**MSG: {JSON_device_list}**": A JSON array containing device names and their corresponding auto IDs.
"**Action: none**": Indicates that no further action is required.

*Usage–*

- /API/list_devices

## list_manufacturers:

*Function-*

This function retrieves a list of manufacturers from the database.

*Input –*

- $check: (Optional) A boolean parameter. If set to 'false', it returns all manufacturers regardless of status. If not set or set to any other value, it returns only active manufacturers.

*Output –*

Returns a JSON response containing a list of manufacturers with the following message:

"**Action: none**": Indicates that no further action is required.
"**MSG: {JSON_manufacturer_list}**": A JSON array containing manufacturer names and their corresponding auto IDs.
"**Status: Success**": Indicates a successful retrieval of manufacturer information.

*Usage–*

- /API/list_manufacturers

## modify_device:

*Function-*

Function to modify a device in the database. Users have the option to either update the name or status of the device, or both. Input variables are "did" for the device id, "rid" for the new name of the device, and "status" which can either be "active" or "inactive". "did" can either be its numerical id (e.x. 12) or its actual name (e.x. laptop).

*Input –*

- $did: (Required) Device ID.

- $rid: (Optional) New manufacturer name.
- $status: (Optional) New manufacturer status.

*Output -*

Returns a JSON response indicating the status of the update operation with the following possible messages:

- **"MSG: Missing device id."**: If the device ID is missing.
- **"MSG: Missing Device ID or Status Modification."**: If both the device ID and status are missing.
- **"MSG: Device not found"**: If the provided device ID is not found in the database.
- **"MSG: Device name is too long"**: If the length of the new device name exceeds 32 characters.
- **"MSG: Invalid Status"**: If the provided status is not "active" or "inactive".
- **"MSG: Name already exists"**: If the new device name already exists in the database.
- **"MSG: Name and status updated"**: If both the device name and status are updated successfully.
- **"MSG: Name updated"**: If only the device name is updated successfully.
- **"MSG: Status updated"**: If only the device status is updated successfully.

*Usage–*

- /API/modify_device?did=laptop&rid=projector
- /API/modify_device?did=10&rid=laptop
- /API/modify_device?did=laptop&status=active

## modify_manufacturer:

*Function-*

Function to update manufacturer information in the database. This function allows for updating the manufacturer name and/or status. Input variables are "mid" for the manufacturer id, "rid" for the new name of the manufacturer, and "status" which can either be "active" or "inactive". "mid" can either be its numerical id (e.x. 102) or its actual name (e.x. Fitbit).

*Input –*

- $mid: (Required) Manufacturer ID.
- $rid: (Optional) New manufacturer name.
- $status: (Optional) New manufacturer status.

*Output –*

Returns a JSON response indicating the status of the update operation with the following possible messages:

- **"MSG: Missing Manufacturer ID**."**: If the manufacturer ID is missing.
- **"MSG: Missing Manufacturer ID or Status Modification**."**: If both the manufacturer ID and status are missing.

- **"MSG: Manufacturer not found"**: If the provided manufacturer ID is not found in the database.
- **"MSG: Manufacturer name is too long"**: If the length of the new manufacturer name exceeds 32 characters.
- **"MSG: Invalid Status"**: If the provided status is not "active" or "inactive".
- **"MSG: Name already exists"**: If the new manufacturer name already exists in the database.
- **"MSG: Name and status updated"**: If both the manufacturer name and status are updated successfully.
- **"MSG: Name updated"**: If only the manufacturer name is updated successfully.
- **"MSG: Status updated"**: If only the manufacturer status is updated successfully.
- **"MSG: Manufacturer name and status not updated"**: If both the manufacturer name and status are not updated successfully.
- **"MSG: Manufacturer name not updated"**: If only the manufacturer name is not updated successfully.
- **"MSG: Manufacturer status not updated"**: If only the manufacturer status is not updated successfully.

*Usage–*

- /API/modify_manufacturer?mid=Apple&rid=Fitbit
- /API/modify_manufacturer?mid=100&rid=HEB
- /API/modify_manufacturer?mid=Apple&status=inactive

## modify_serial:

*Function-*

Function to update serial number information in the database. This function allows for updating the serial number, device ID, and/or manufacturer ID. Input variables are "sn" for the serial number, "rsn" for the new serial number, "did" for the new device id, and "mid" for the new manufacturer id. Either "did" or "mid" can either be their numerical ids (e.x. 12 or 123) or their actual name (e.x. Fitbit or laptop).

*Input –*

- $sn: (Required) Serial number.
- $rsn: (Optional) New serial number.
- $did: (Optional) New device ID.
- $mid: (Optional) New manufacturer ID.

*Output –*

Returns a JSON response indicating the status of the update operation with the following possible messages:

- **"MSG: Missing Serial Number."**: If the serial number is missing.
- **"MSG: Missing Manufacturer ID, Device ID, or Serial Number Modification."**: If both the manufacturer ID, device ID, and new serial number are missing.

- **"MSG: Serial number not found"**: If the provided serial number is not found in the database.
- **"MSG: Serial number is too long"**: If the length of the new serial number exceeds 70 characters.
- **"MSG: Device not found"**: If the provided device ID is not found in the database.
- **"MSG: Manufacturer not found"**: If the provided manufacturer ID is not found in the database.
- **"MSG: Serial number already exists"**: If the new serial number already exists in the database.
- **"MSG: Serial number, device id, and manufacturer id updated"**: If the serial number, device ID, and manufacturer ID are updated successfully.
- **"MSG: Serial number and device id updated"**: If only the serial number and device ID are updated successfully.
- **"MSG: Serial number and manufacturer id updated"**: If only the serial number and manufacturer ID are updated successfully.
- **"MSG: Device id and manufacturer id updated"**: If only the device ID and manufacturer ID are updated successfully.
- **"MSG: Serial number updated"**: If only the serial number is updated successfully.
- **"MSG: Device id updated"**: If only the device ID is updated successfully.
- **"MSG: Manufacturer id updated"**: If only the manufacturer ID is updated successfully.

*Usage–*
- /API/modify_serial?sn=SN-009&did=12
- /API/modify_serial?sn=SN-009&mid=Apple
- /API/modify_serial?sn=SN-009&did=Laptop&mid=Apple&rsn=SN-777

## query_device:

*Function-*

Function to query device information in the database. This function retrieves information about devices based on the provided device ID. If the device ID is numeric, it retrieves information directly. If the device ID is alphanumeric, it first looks up the device ID by name and then retrieves information.

*Input –*
- $did: (Required) Device ID or device name.

*Output –*

Returns a JSON response containing information about the queried device with the following possible messages:
- **"MSG: Missing device id."**: If the device ID is missing.
- **"MSG: Device not found"**: If the provided device ID or device name is not found in the database.
- **"MSG: Device Inactive"**: If the queried device is inactive and the status parameter is set to only return active devices.

- **"MSG: No entries found.":** If no entries are found for the queried device.
- **"MSG: {JSON_device_information}":** If the device information is successfully retrieved. The JSON format includes the device's auto ID, manufacturer ID, and serial number.

*Usage–*

- /API/query_device?did=1
- /API/query_device?did=laptop

## query_manufacturer:

*Function-*

This function queries manufacturer information in the database based on the provided manufacturer ID. It retrieves information about manufacturers and their associated serial numbers.

*Input –*

- $mid: (Required) Manufacturer ID or manufacturer name.

*Output –*

Returns a JSON response containing information about the queried manufacturer with the following possible messages:

- **"MSG: Invalid or missing manufacturer id.":** If the manufacturer ID is missing or invalid.
- **"MSG: Manufacturer not found":** If the provided manufacturer ID or manufacturer name is not found in the database.
- **"MSG: Manufacturer Inactive":** If the queried manufacturer is inactive and the status parameter is set to only return active manufacturers.
- **"MSG: No entries found.":** If no entries are found for the queried manufacturer.
- **"MSG: {JSON_manufacturer_information}":** If the manufacturer information is successfully retrieved. The JSON format includes the manufacturer's auto ID, device ID, and serial number.

*Usage–*

- /API/query_manufacturer?mid=100
- /API/query_manufacturer?mid=Microsoft

## query_device_manufacturer:

*Function-*

This function queries serial information in the database based on the provided device ID and manufacturer ID. It retrieves information about serials associated with the specified device and manufacturer.

*Input –*
- $did: (Required) Device ID.
- $mid: (Required) Manufacturer ID.

*Output –*

Returns a JSON response containing information about the queried serials with the following possible messages:
- **"MSG: Invalid or missing device id**.": If the device ID is missing or invalid.
- **"MSG: Invalid or missing manufacturer id**.": If the manufacturer ID is missing or invalid.
- **"MSG: Device not found**": If the specified device ID is not found in the database.
- **"MSG: Manufacturer not found**": If the specified manufacturer ID is not found in the database.
- **"MSG: No entries found**.": If no entries are found for the specified device and manufacturer.
- **"MSG: {JSON_serial_information}**": If the serial information is successfully retrieved. The JSON format includes information about serials associated with the specified device and manufacturer, including auto ID, device ID, and manufacturer ID.

*Usage–*
- /API/query_device_manufacturer?mid=Toyota&did=12
- /API/query_device_manufacturer?mid=100&did=10
- /API/query_device_manufacturer?mid=Apple&did=laptop

## query_serial:

*Function-*

This function queries serial information in the database based on the provided serial number.

*Input –*
- $sn: (Required) Serial number.

*Output –*

Returns a JSON response containing information about the queried serial with the following possible messages:
- **"MSG: Invalid or missing serial number**.": If the serial number is missing or invalid.
- **"MSG: Serial number not found**": If the specified serial number is not found in the database.
- **"MSG: {JSON_serial_information}**": If the serial information is successfully retrieved. The JSON format includes information about the serial, such as auto ID, device ID, manufacturer ID, etc.

*Usage–*
- /API/query_serial?sn=SN-7777