Flask REST API for Products

This is a simple Flask-based REST API that interacts with an external API to fetch and manipulate product data. The application demonstrates the use of Flask and Flask-RESTful for creating a RESTful service.

Features

- **GET /products**: Fetches a list of products from the Dummy JSON API. If the data is unavailable locally, it fetches and caches it in memory.
- **POST /products**: Adds a new product to the in-memory list. Validates input fields before adding the product.

Technologies Used

- Python
- Flask
- Flask-RESTful
- Requests

Prerequisites

- Python 3.8 or later
- pip (Python package installer)

Installation

1. Clone the repository:

```
git clone https://github.com/himreal9/BasicFlaskAPI.git
cd BasicFlaskAPI
```

2. Create a virtual environment and activate it:

```
python -m venv venv
source venv/bin/activate   # On Windows: venv\Scripts\activate
```

3. Install the dependencies:

```
pip install -r requirements.txt
```

4. Run the application:

```
python app.py
```

5. The API will be available at http://127.0.0.1:5000.

API Endpoints

GET /products

Fetches the list of products.

Response

- **200 OK**: Returns a list of products.
- **500 Internal Server Error**: If there's an issue fetching data from the Dummy JSON API.

Example Response

```
[
  {
    "id": 1,
    "title": "iPhone 9",
    "price": 549,
    "category": "smartphones"
  },
  ...
]
```

POST /products

Adds a new product to the in-memory list.

Request Body

```
{
  "title": "New Product",
  "price": 100,
  "category": "Electronics"
}
```

Response

- **201 Created**: Returns the updated list of products, including the newly added product.
- **400 Bad Request**: If any required field is missing or empty.

Example Response

```json
[
  {
    "id": 1,
    "title": "iPhone 9",
    "price": 549,
    "category": "smartphones"
  },
  {
    "id": 2,
    "title": "New Product",
    "price": 100,
    "category": "Electronics"
  }
]
```

Error Handling

- **404 Not Found**: Returned for undefined routes.
- **500 Internal Server Error**: Returned for internal server issues.

Dependencies

All dependencies are listed in `requirements.txt`:

```
Flask==2.3.2
Flask-RESTful==0.3.10
requests==2.31.0
```

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Contributing

Contributions are welcome! Please fork the repository and submit a pull request with your changes.

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