# Documentation for Flask Arithmetic Operations App

## Introduction

This is a simple Flask web application that performs basic arithmetic operations. Users can provide two numerical values and an operation type via a form, and the application returns the calculated result.

## Requirements

To run this application, ensure you have the following installed:

* - Python (3.x recommended)
* - Flask (install using `pip install flask`)

## Application Structure

The application consists of:  
1. Python Script (`app.py`): Handles the backend logic using Flask.  
2. HTML Template (`index.html`): Provides the frontend form and displays results.

## app.py - Flask Application

### Importing Modules

```python  
from flask import Flask, request, render\_template  
```

### Initializing the Application

```python  
app = Flask(\_\_name\_\_)  
```

### Routes

### Default Route (`/`)

```python  
@app.route("/")  
def hello\_world():  
 return "<p>Hello Interns!</p>"  
```

### Arithmetic Operations Route (`/calculate`)

```python  
@app.route("/calculate", methods=["GET"])  
def calculate():  
 val1 = request.args.get("val1", type=int)  
 val2 = request.args.get("val2", type=int)  
 op = request.args.get("op")  
  
 if op == "add":  
 a = val1 + val2  
 elif op == "sub":  
 a = val1 - val2  
 elif op == "mul":  
 a = val1 \* val2  
 elif op == "div":  
 a = "Cannot divide by 0" if val2 == 0 else val1 / val2  
 elif op == "power":  
 a = val1 \*\* val2  
  
 return render\_template('index.html', val1=val1, val2=val2, op=op, a=a)  
```

### Running the Application

```python  
if \_\_name\_\_ == "\_\_main\_\_":  
 app.run(debug=True)  
```

## index.html - Frontend Template

### Form to Input Values

```html  
<form method="GET" action="/calculate">  
 <label>Enter 1st value:</label><br>  
 <input type="number" name="val1" required><br>  
 <label>Enter 2nd value:</label><br>  
 <input type="number" name="val2" required><br>  
 <label>Enter Operator (add, sub, mul, div, power):</label><br>  
 <input type="text" name="op" required><br>  
 <input type="submit" value="Submit"/>  
</form>  
```

### Displaying Results

```html  
<h2>Results:</h2>  
<p>  
 {  
 "Operation": {{ op }},<br>  
 "Value 1": {{ val1 }},<br>  
 "Value 2": {{ val2 }},<br>  
 "Calculation": {{ a }}<br>  
 }  
</p>  
```

## Usage Instructions

1. Run `app.py` using the command:  
 ```sh  
 python app.py  
 ```  
2. Open a browser and visit `http://127.0.0.1:5000/`.  
3. Navigate to `/calculate` and input values for calculation.  
4. View the result on the webpage.

## Conclusion

This Flask application demonstrates basic arithmetic operations using a simple web interface. It showcases fundamental Flask routing, request handling, and template rendering.