

Flask is a web framework that allows developers to build lightweight web applications quickly and easily with Flask Libraries.

Google Cloud SDK, also known as gcloud, is a set of command-line tools provided by Google for managing and interacting with resources and services on the Google Cloud Platform (GCP). It enables developers and administrators to access and manage Google Cloud services from their local machines.

Step : sign up for a Google Cloud Platform account

Step : Set Up Your Environment

1. **Install the Google Cloud SDK:**
 - Download the installer from Google Cloud SDK.
 - Follow the installation instructions for Windows.
2. **Set Up Python:**
 - Ensure Python is installed on your system.
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3. **Install Flask:** Open Command Prompt and run:

```
pip install Flask
```

Step : Create the Application

1. **Create a new directory** for your project:

```
mkdir even-number-generator  
cd even-number-generator
```

2. **Create the required files:**
 - **app.yaml:** Configuration for your App Engine application.
 - **main.py:** The main application logic.

Step : Write the Application Code

app.yaml

Create a file named `app.yaml` and add the following content:

```
runtime: python39  
  
handlers:  
- url: /*  
  script: auto
```

main.py

Create a file named `main.py` and add the following code:

```
from flask import Flask, request, jsonify

app = Flask(__name__)

@app.route('/generate', methods=['GET'])
def generate_even_numbers():
    n = request.args.get('n', default=10, type=int) # Default to 10 if not
    specified
    even_numbers = [i for i in range(0, n * 2, 2)] # Generate n even
    numbers
    return jsonify(even_numbers)

if __name__ == '__main__':
    app.run(host='0.0.0.0', port=8080)
```

Step : Test Locally

You can run the application locally to test it:

1. Open Command Prompt in the `even-number-generator` directory.
2. Run the following command:

```
python main.py
```

3. Open your browser and visit `http://127.0.0.1:8080/generate?n=5` to see the generated even numbers.

Step : Deploy to Google App Engine

1. **Initialize your Google Cloud project:**

```
gcloud init
```

Follow the prompts to select your project.

2. **Deploy the application:**

Run the following command in your project directory:

```
gcloud app deploy
```

3. **Visit your deployed app:**

After deployment, access your app at `https://<your-project-id>.appspot.com/generate?n=5`.

Step : Clean Up

To avoid incurring charges, delete the project if no longer needed:

```
gcloud projects delete <your-project-id>
```

