

# Python Code Deployment Guide (Flask Project)

This guide documents step-by-step deployment of a Flask-based Python application on a Linux server using system tools and Gunicorn.

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## 1. System Update & Package Installation

```
apt update -y
```

```
apt install git -y
```

Updates system packages and installs Git to manage source code.

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## 2. Clone the Application Repository

```
git clone https://github.com/daniyel7devops/myprojects1.git
```

```
cd redeemx_be_app-uat
```

```
cd redeemx
```

Clones your project repository and navigates to the correct sub-directory.

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## 3. Verify Files & Initial Check

```
python3
```

```
cat requirements.txt
```

Lists files in the directory and confirms Python is installed.

Checks if a requirements.txt file exists for dependencies.

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## 4. Install Python and Build Tools

```
apt install pip3
```

```
sudo apt install -y libmariadb-dev gcc g++ build-essential python3-dev dh-python
```

```
apt install python3-pip
```

Installs Python pip and required build tools for compiling Python packages.

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## 5. Install Python Modules

```
pip3 install -r requirements.txt
```

```
apt install python3-flask
```

```
apt install python3-redis
```

```
apt install python3-gunicorn
```

Installs Flask, Redis, Gunicorn, and other dependencies either via pip or system packages.

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## 6. Setup Python Virtual Environment

```
apt install python3-venv
```

```
python3 -m venv myenv
```

```
source myenv/bin/activate
```

Creates and activates a virtual environment to isolate project dependencies.

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## 7. Run and Debug the Application

```
python3 app.py
```

```
pip3 install flask
```

```
pip3 install redis
```

```
pip3 install gunicorn
```

Runs the Flask application for testing.

Installs additional missing modules one-by-one based on error messages.

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## 8. View and Edit Application Files (Optional)

```
cat app.py
```

```
vi app.py
```

```
vi wsgi.py
```

Views or modifies main application files and Gunicorn WSGI entry point.

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## 9. Production Deployment Using Gunicorn

```
gunicorn app:app -b 0.0.0.0:5000 --log-file - --access-logfile - --workers 4 --keep-alive 0
```

Deploys the app on port 5000 using Gunicorn with 4 worker processes.

