🚀 100 Days Backend + Cloud Developer Challenge

PHASE 1: Backend Development (Days 1–30)

🔹 1. Advanced Python

What to Learn:

- OOP, Decorators, Generators
- Error Handling, File handling
- Working with `json`, `requests`, `datetime`

Resources:

- Python OOP – freeCodeCamp (YouTube)
- https://realpython.com/
- https://docs.python.org/3/tutorial/

🔹 2. Django + Django REST Framework

What to Learn:

- Views, Templates, Models, Admin, Forms
- Django REST APIs: Serializers, Permissions, CRUD
- JWT Authentication, Throttling

Resources:

- https://docs.djangoproject.com/
- Django for Beginners (Book)
- DRF REST API – CodeWithStein (YouTube)

🔹 3. Flask + Microservices

What to Learn:

- Routing, Templates, SQLAlchemy
- REST APIs, JWT Auth
- Structuring Flask as Microservices

Resources:

- Flask Mega-Tutorial by Miguel Grinberg
- Flask Crash Course – Traversy Media (YouTube)

🔹 4. PostgreSQL + GitHub

What to Learn:

- PostgreSQL Basics, Joins, Aggregates, Indexes
- Django ORM Queries
- Git Workflow: Branches, PRs, Merges

Resources:

- https://www.postgresqltutorial.com/
- GitHub Crash Course – Traversy Media (YouTube)

PHASE 2: Cloud & DevOps (Days 31–60)

🔹 5. AWS (Cloud Basics)

What to Learn:

- EC2, S3, RDS, IAM, VPC
- Deploy Django/Flask to EC2
- Store media in S3, Use PostgreSQL with RDS

Resources:

- EC2 Setup – AWS Free Tier (YouTube)
- AWS Cloud Skill Builder: https://explore.skillbuilder.aws/

🔹 6. Docker & Docker Compose

What to Learn:

- Images vs Containers, Dockerfile, Volumes
- Dockerizing Django/Flask app
- Compose (Web + DB), Push to DockerHub

Resources:

- Docker for Beginners – TechWorld with Nana
- Dockerizing Django – Real Python

🔹 7. Nginx + Gunicorn + CI/CD

What to Learn:

- Gunicorn as app server for Django/Flask
- Nginx as reverse proxy
- GitHub Actions CI/CD pipeline for auto deploy

Resources:

- Deploy Django + Gunicorn + Nginx – DigitalOcean
- CI/CD Pipeline with GitHub Actions – YouTube

PHASE 3: System Design, Monitoring & Security (Days 61–90)

🔹 8. System Design

What to Learn:

- Monolith vs Microservices
- Load Balancing, Caching, Queueing Systems
- Horizontal vs Vertical Scaling

Resources:

- System Design Primer – GitHub: https://github.com/donnemartin/system-design-primer
- Gaurav Sen – YouTube

🔹 9. Monitoring & Logging

What to Learn:

- Python Logging, Loguru
- Prometheus + Grafana Setup
- Health Checks, Logging Errors, Alerts

Resources:

- https://loguru.readthedocs.io/
- Prometheus + Grafana Setup – YouTube

🔹 10. Security Best Practices

What to Learn:

- HTTPS, SSL, CORS, CSRF, OAuth2
- RBAC (Role-Based Access Control)
- Environment Variables, Secret Management

Resources:

- https://owasp.org/www-project-top-ten/
- Secure Django – MDN Web Docs

PHASE 4: Portfolio & Job Prep (Days 91–100)

🔹 What to Do:

- Build your Portfolio Website (React or Django)
- Blog your projects, polish GitHub
- Write clean README.md files for each project
- Update your Resume & LinkedIn
- Practice Backend & Cloud Interview Questions

Resources:

- https://github.com/emmabostian/developer-portfolios
- https://www.techinterviewhandbook.org/resume/
- https://backendinterview.org/

✨ Bonus Tools

- **Tracker**: Use Notion or Google Sheets to track daily progress
- **Certificate**: Create one at virtualbadge.io
- **Daily Projects**: Document on GitHub with README & demo links