

DISASTER RECOVERY DETECTIVE LAB



cloudChronicles Lab #001: Disaster Recovery Detective

Lab Type: Idea

Estimated Time: 30–45 mins

Skill Level: Beginner

```
# Let's begin by printing your name to personalize the notebook
your_name = "Habeeb Yusuf"
print(f"Welcome to the lab, {your_name}!")
```

STAR Method Lab Prompt

Situation:

As a Cloud Architect for QuickCart a small but growing e-commerce startup. QuickCart's entire application (web front-end, order processing, and product database) is hosted in Google Cloud's `us-central1` region. The application uses:

- Google Compute Engine (GCE) instances for the web servers and application logic.
- Cloud SQL for PostgreSQL for the product catalog and customer orders.
- Cloud Storage for product images. A critical regional outage has just been reported by Google Cloud for `us-central1`, making all QuickCart services inaccessible. The CEO is asking for an immediate plan to get the store back online.

Task:

The task is to outline a basic disaster recovery (DR) plan using the STAR method. This plan should define how QuickCart can failover its critical services to a designated backup region (`us-east1`) using appropriate Google Cloud tools. The goal is to restore service with minimal data loss and downtime, considering QuickCart's current (simplified) infrastructure.

Action:

To complete this task, this will be needed:

1. **Identify Critical Services:** List the core components of QuickCart that need to be recovered (e.g., database, web servers, image storage).
2. **Choose DR Strategies:** For each critical service, select a suitable Google Cloud DR strategy/tool. *Consider Cloud SQL's replication features.* Think about Cloud Storage's regional/multi-regional capabilities. *How can you quickly deploy GCE instances in a new region? (Think Instance Templates, Managed Instance Groups).* How will users reach the application in the new region? (Think Load Balancing). *How would you know to trigger the DR plan?
3. **Outline Failover Steps:** Briefly describe the sequence of actions to activate the DR site (e.g., promote database replica, deploy compute, update DNS/Load Balancer).
4. **Define Key Metrics:** While you won't calculate them, think about what Recovery Time Objective (RTO) and Recovery Point Objective (RPO) would mean for QuickCart.

Expected Result:

A documented disaster recovery outline using the STAR method format provided below. This plan should clearly state the primary and backup regions, failover triggers, redundancy services chosen for QuickCart's components, and a conceptual backup/replication strategy.

Your Assignment

Use this section to complete your deliverable:

(Example Format)

```
- **Primary Region**: us-central1
- **DR (Backup) Region**: us-east1
- **Failover Trigger(s)**: Google Cloud status/ alerts
- **Key Service Recovery Strategies & Steps**:
    - **Database Cloud SQL for QuickCart**:
        - *DR Strategy*: Cross-region replica in DR region
        - *Failover Step*: Promote replica to primary, update app
    config
    - **Application Servers GCE for QuickCart Web/App Logic**:
        - *DR Strategy*: Instance templates and MIG definition in DR
    region
    - *Failover Step*: Scale up/deploy MIG, point to new DB
    - **File Storage Cloud Storage for QuickCart Product Images**:
        - *DR Strategy*: Multi-region or Dual-region bucket
        - *Failover Step*: Usually automatic access from DR region
    apps
    - **Traffic Management Global Load Balancer for QuickCart
    Storefront**:
        - *DR Strategy*: Global Load Balancer configured
        - *Failover Step*: Update backend service to point to DR
    region MIG
- **Target RTO (Time to Recover)**: Goal, < 1 hour
- **Target RPO (Data Loss Tolerance)**: Goal, < 5 minutes
```