**Steps for Google Cloud Monitoring**

**1: Enable Cloud Monitoring**

1. **Go to Google Cloud Console**  
   [Google Cloud Console](https://console.cloud.google.com/)
2. **Click on the project selector at the top and choose your project.**
3. **Enable Monitoring API**
   * Go to **APIs & Services > Library**
   * Search for **"Cloud Monitoring API"**
   * Click **Enable**
4. **Enable Cloud Logging API**
   * Search for **"Cloud Logging API"** in the API Library
   * Click **Enable**

**2: Install and Configure Cloud Monitoring Agent**

For monitoring Compute Engine VMs or other services outside GCP:

* **SSH into your VM**
* **Install the Cloud Ops Agent**
* curl -sSO https://dl.google.com/cloudagents/add-google-cloud-ops-agent-repo.sh
* sudo bash add-google-cloud-ops-agent-repo.sh --also-install
* **Verify Installation**
* systemctl status google-cloud-ops-agent

**3: Set Up Metrics and Dashboards**

1. **Go to Cloud Monitoring**
   * In **Google Cloud Console**, go to **Monitoring**
   * Click **Dashboards**
2. **Create a Dashboard**
   * Click **Create Dashboard**
   * Add **Charts** for CPU, memory, network, application metrics, etc.
3. **Select Metrics**
   * Click **Add Chart**
   * Choose the **Resource Type** (e.g., Compute Engine, Kubernetes, Cloud Functions)
   * Select **Metrics** (e.g., CPU usage, memory, request count)

**4: Set Up Alerts**

1. **Go to Alerting**
   * In **Monitoring**, click **Alerting**
   * Click **Create Policy**
2. **Define Conditions**
   * Click **Add Condition**
   * Choose a **metric** (e.g., CPU usage > 80%)
   * Set **Thresholds** (e.g., above 80% for 5 minutes)
3. **Set Notifications**
   * Choose an **email, SMS, Slack, or Pub/Sub topic** for notifications
   * Click **Save**

**5: Monitor Logs**

1. **Go to Cloud Logging**
   * Open **Operations > Logging**
   * View logs for Compute Engine, Kubernetes, Cloud Run, or Cloud Functions.
2. **Create Log-based Metrics**
   * Click **Logs-based metrics**
   * Define custom metrics based on log entries.

**6: Analyse and Optimize**

* Use **Cloud Monitoring Dashboard** for real-time insights.
* Set up **uptime checks** for external services.
* Adjust **alert thresholds** as needed.

**Deliverables**

1. A cloud dashboard showcasing metrics.
2. Configured cloud alarms.
3. documentation of dashboard and alarms.