1. \*\*Docker Daemon (`dockerd`):\*\*  
 - 🛠️ \*\*Role:\*\* Manages Docker containers on a system.  
 - 📝 \*\*Responsibilities:\*\* Handling container creation, execution, and management.  
  
2. \*\*Docker Client (`docker`):\*\*  
 - 👥 \*\*Role:\*\* The user's interface to interact with Docker.  
 - 📋 \*\*Commands:\*\* Allows users to perform actions like building, pulling, and running containers.  
  
3. \*\*Docker Images:\*\*  
 - 🖼️ \*\*Definition:\*\* Read-only templates used to create containers.  
 - 🏭 \*\*Role:\*\* Serve as the foundation for creating containers.  
 - 💼 \*\*Registry/Hub:\*\* A storage and distribution system for Docker images.  
  
4. \*\*Docker Containers:\*\*  
 - 📦 \*\*Definition:\*\* Runnable instances of Docker images.  
 - 🏠 \*\*Role:\*\* Encapsulate applications and their environments.  
  
5. \*\*Docker Registry:\*\*  
 - 📦 \*\*Role:\*\* Stores Docker images.  
 - 🌐 \*\*Popular Registry:\*\* Docker Hub.  
 - 🏢 \*\*Private Registry:\*\* Can be hosted by users.  
  
🔄 \*\*Docker Workflow\*\* 🔄  
  
\*\*A. Development Phase\*\*  
  
1. 📝 \*\*Write Code:\*\*  
 - Developers write code locally.  
  
2. 🏗️ \*\*Build Docker Image:\*\*  
 - 🧱 \*\*Dockerfile:\*\* A script with instructions to create a Docker image.  
 - 📋 \*\*Command:\*\* `docker build -t my-image .`  
  
3. 🚀 \*\*Test Locally:\*\*  
 - Run the application inside a Docker container locally.  
 - 📋 \*\*Command:\*\* `docker run my-image`  
  
\*\*B. Share/Deploy Phase\*\*  
  
4. 🚀 \*\*Push Image to Registry:\*\*  
 - Push the Docker image to a registry (Docker Hub, AWS ECR, etc.).  
 - 📋 \*\*Command:\*\* `docker push my-image`  
  
5. 🌐 \*\*Deploy on a Server/Cluster:\*\*  
 - Pull the Docker image from the registry.  
 - 📋 \*\*Command:\*\* `docker pull my-image`  
 - Run the container on a server or a cluster (like Kubernetes).  
 - 📋 \*\*Command:\*\* `docker run my-image`  
  
\*\*C. CI/CD Integration\*\*  
  
6. 🔄 \*\*Continuous Integration (CI):\*\*  
 - Integrate code changes and build the Docker image.  
 - Push the built image to a registry.  
  
7. 🔄 \*\*Continuous Deployment (CD):\*\*  
 - Deploy the Docker image from the registry to production environments.  
  
\*\*D. Scaling & Management\*\*  
  
8. 📈 \*\*Scaling:\*\*  
 - Increase or decrease the number of running containers based on demand.  
  
9. 📊 \*\*Monitoring & Logging:\*\*  
 - Track the performance and logs of running containers.  
  
10. 🔄 \*\*Update & Rollback:\*\*  
 - Deploy updates by pushing new Docker images to the registry and updating running containers.  
 - Rollback to a previous version if needed by running containers from an older Docker image.  
  
  
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