Cloud Computing
Project Presentation

Containerization of a Web Application Using Docker and Container Orchestration using Kubernetes
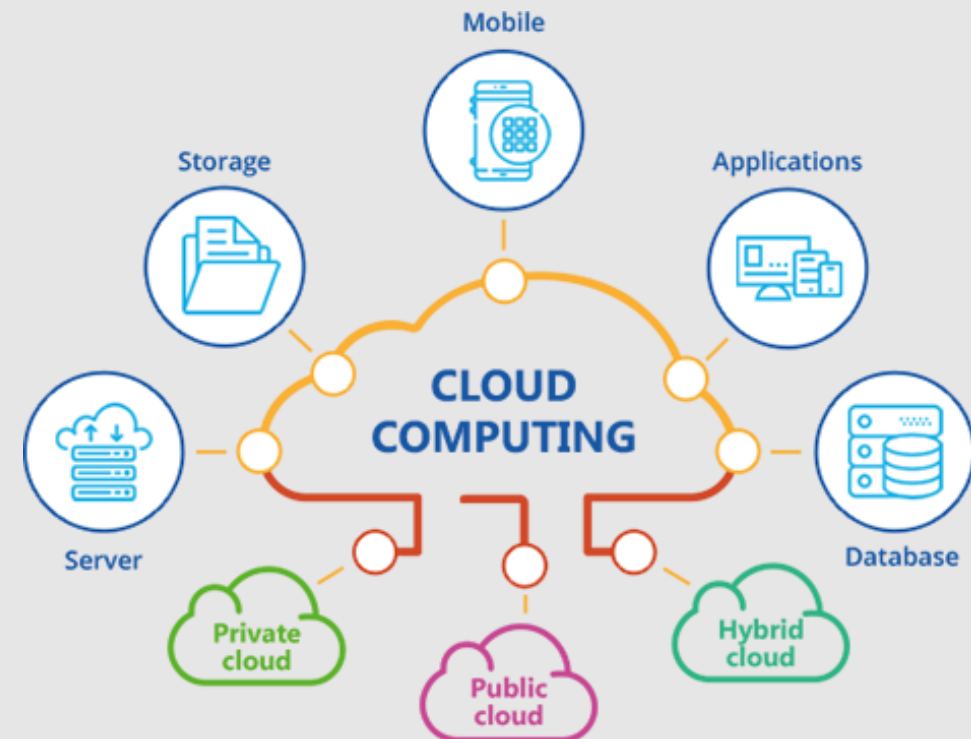
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Goals and Objectives

- ✓ Gather knowledge over Cloud Computing concepts and implement in a project specific task

- ✓ Deploy the containerized web application to Kubernetes cluster in public cloud

- ✓ Bridge the gap between development, and operational activities (build, test, and deployment)

- ✓ Deployment process of container from local to public cloud Kubernetes cluster of both

  manual and automated approach

- ✓ Accelerate portability and reproducibility of a simple web application integration to cloud

System Architecture and Tools
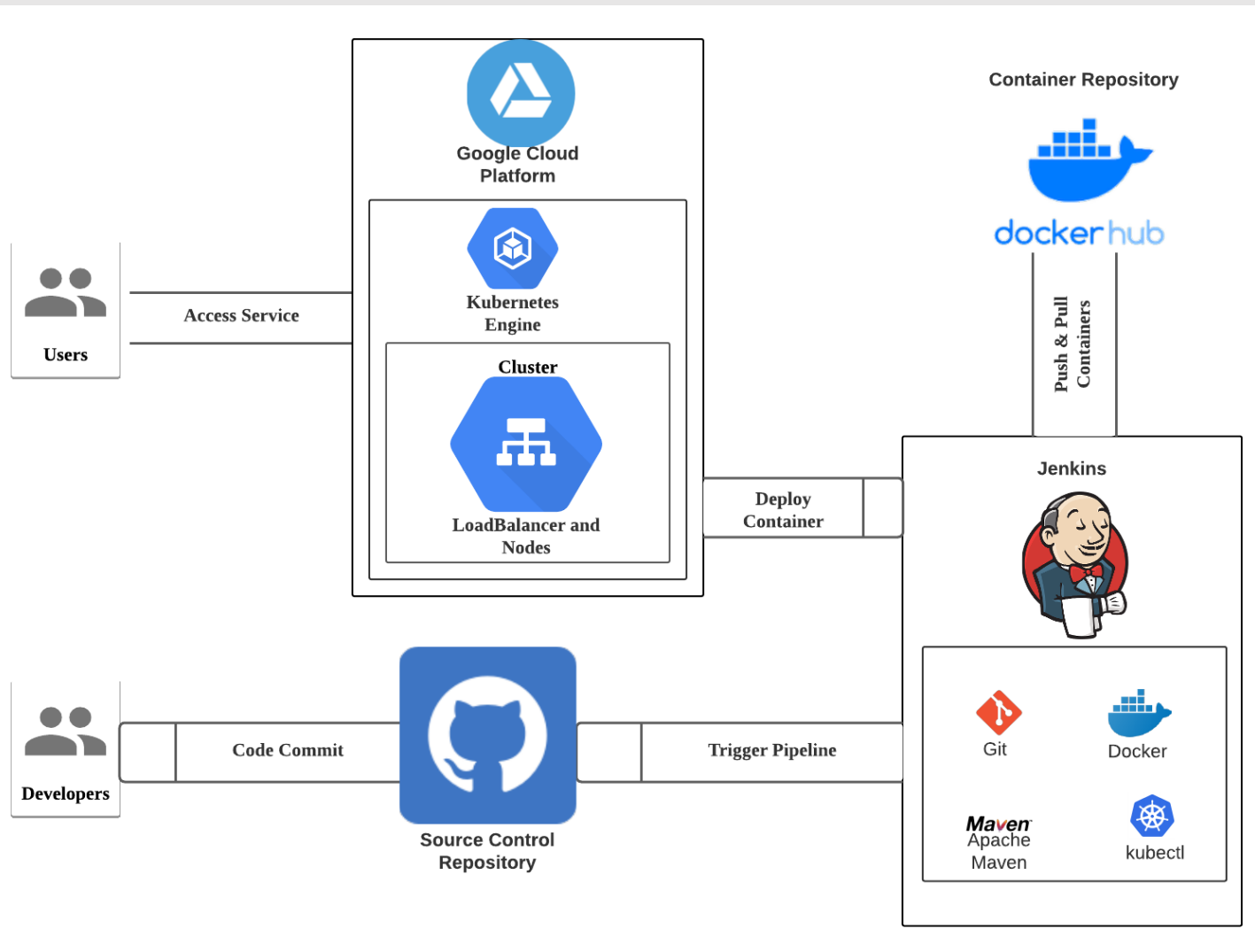
```
Programming Language: Java
Database: H2
Framework: Spring Boot
Application Build Tool: Apache Maven
DevOps Tools: Docker, Jenkins, Kubernetes
Cloud Platform: Google Cloud Platform
Source Control Repository: GitHub
Container Repository: DockerHub
API Test: Postman
```

Practical Orientations

- ✓ Hands on development process

- ✓ Containerization of Local and Google Kubernetes Cluster

- ✓ CI/CD with Jenkins

- ✓ **Reference:** Project Reports for in details commands, and Results/Discussions

Questions and Answers

✓ **Q1:** How did we create the system architecture as google cloud platform image looks different?

   Ans1: The System Architecture is drawn using **Lucidchart** – Online Diagram Software & Visual Solutions (**Ref.** www.lucidchart.com)

✓ **Q2:** What is your web application and how can we access it?

   Ans2: The application is a simple web application of 3 books in the list.

         The service of the application can be accessible from external IP what is already deployed in cloud, and can accessible globally. For in details, **see Project Report : Section 6.2** where the automation with Jenkins help when any further updates of the application append by the developers, and user can get the service at the same time using Docker, Kubernetes, Google Cloud.