DevOps Tools Assignment-2

You are part of a development team building a web-based ticket booking application. Your goal is to implement a complete automated workflow that covers version control, containerization, continuous integration, continuous delivery, and orchestration. (BTL Level 3)

Using **Git**, **Docker**, **Jenkins**, and **Kubernetes**, design and implement a practical solution that accomplishes the following:

1. **Version Control and Branching:**
   o Initialize a Git repository for the application.
   o Use GitFlow branching strategy to manage feature development, integration, and production-ready code.
2. **Containerization:**
   o Create a Dockerfile to containerize the web application.
   o Build and test the Docker image locally.
3. **Continuous Integration and Continuous Delivery (CI/CD):**
   o Set up Jenkins to automate the build, test, and deployment pipeline.
   o Configure Jenkins to automatically trigger the pipeline when changes are pushed to the repository.
   o Integrate Docker Hub to store and retrieve Docker images.
4. **Deployment and Orchestration:**
   o Use Kubernetes to deploy and manage the containerized application.
   o Define Kubernetes deployment and service manifests for the application.
   o Ensure the application can scale by increasing the number of pod replicas.

Push entire code to GitHub and submit the link for evaluation.

Describe the commands, configurations, and pipeline steps and screenshots you would use to achieve this automated deployment workflow in the read me file.