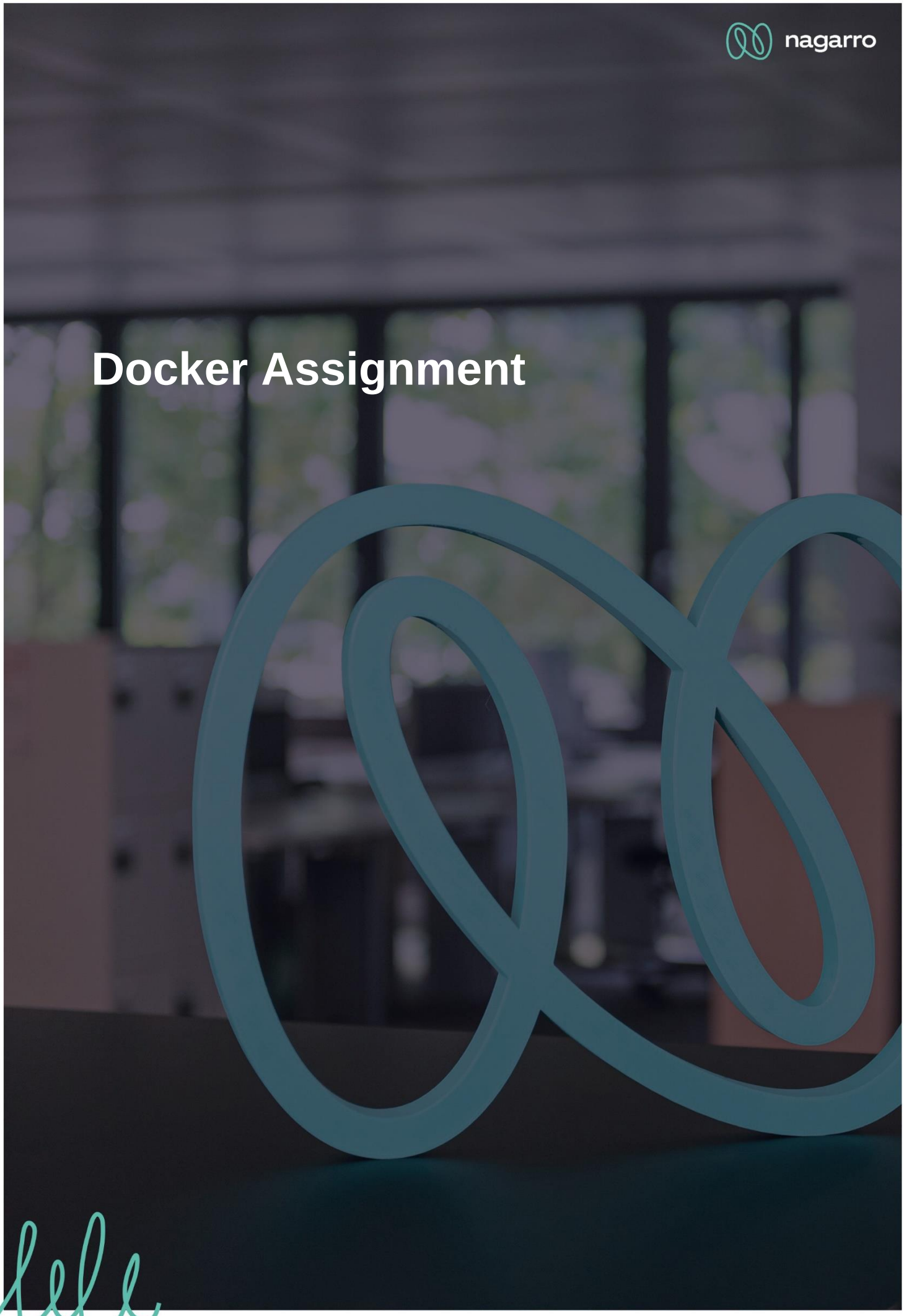
nagarro

Docker Assignment



Assignment

- Provide a brief overview of the multi-service application you will build and deploy using a CI/CD pipeline.
- Set up a new multi-service application project.
- Create Docker containers for at least three services: a web service, a database service, and a cache service.
- Write Dockerfiles for each service to build custom Docker images.
- Configure Docker networking to allow the services to communicate with each other.
- Create a Docker Compose file to define and run the multi-service application.
- Push your Docker images to a Docker registry (e.g., Docker Hub).
- Use Docker CLI commands for image management, container lifecycle, and more.
- Use Docker volumes to persist data for the database service.
- Implement security best practices in your Dockerfiles and Docker Compose file.
- Optimize your Dockerfiles using multi-stage builds for smaller image sizes.
- Follow Docker best practices for image creation, container management, and deployment.
- Implement a CI/CD pipeline to automate the build, test, and deployment process using Docker and Docker Compose.

Requirements

- Docker 20.10 or later
- Docker Compose 1.27 or later
- CI/CD tool of your choice (e.g., GitHub Actions, GitLab CI, CircleCI)

Note

- Create a CI/CD pipeline to build, test, and deploy a multi-service application using Docker and Docker Compose.
- Ensure your code is well-documented and includes appropriate comments.
- Include a README file with instructions on how to set up and run your project.

Deliverables

- GitHub repository link with all source code and documentation.
- README file with setup instructions.
- Well-documented code with comments.
- Screenshots of the CI/CD pipeline in action.

Bonus Question

- Implement advanced logging and monitoring for your Docker services using tools such as ELK Stack (Elasticsearch, Logstash, Kibana) or Prometheus and Grafana (or any other tool of your choice).