Assignement-2

DockerFile:

```
FROM python:3.9-slim

WORKDIR /app

COPY . .

RUN pip install --no-cache-dir -r requirements.txt

EXPOSE 5000

CMD ["python", "app.py"]
```

Docker-compose.yaml:

```yaml
version: '3'
services:
  web:
    build: .
    ports:
      - "5000:5000"
    environment:
      - MONGO_HOST=mongodb
    depends_on:
      - mongodb
```

```yaml
  mongodb:
    image: mongo:latest
    ports:
      - "27017:27017"
    volumes:
      - mongodb_data:/data/db

volumes:
  mongodb_data:
```

K8s:

todo-app-service.yaml

```yaml
apiVersion: v1
kind: Service
metadata:
  name: todo-app
spec:
  selector:
    app: todo-app
  ports:
  - port: 80
    targetPort: 5000
  type: LoadBalancer
```

todo-app-deployment.yaml:

```yaml
apiVersion: apps/v1

kind: Deployment

metadata:

  name: todo-app

spec:

 replicas: 2

 selector:

   matchLabels:

    app: todo-app

 template:

  metadata:

   labels:

    app: todo-app

  spec:

   containers:

   - name: todo-app

     image: sahilms48/todo-app:v3

     ports:

     - containerPort: 5000

     env:

     - name: MONGO_URI

       value: "mongodb://mongodb:27017/todo"
```

mongodb-service.yaml:

```yaml
apiVersion: v1

kind: Service

metadata:

  name: mongodb

spec:

  selector:

    app: mongodb

  ports:

  - port: 27017

    targetPort: 27017

  type: ClusterIP
```

mongodb-pvc.yaml:

```yaml
apiVersion: v1

kind: PersistentVolumeClaim

metadata:

  name: mongodb-pvc

spec:

  accessModes:

    - ReadWriteOnce

  resources:

    requests:

      storage: 1Gi
```

mongodb-deployment.yaml:

```yaml
apiVersion: apps/v1
kind: Deployment
metadata:
  name: mongodb
spec:
  replicas: 1
  selector:
    matchLabels:
      app: mongodb
  template:
    metadata:
      labels:
        app: mongodb
    spec:
      containers:
      - name: mongodb
        image: mongo:latest
        ports:
        - containerPort: 27017
        volumeMounts:
        - name: mongodb-data
          mountPath: /data/db
      volumes:
      - name: mongodb-data
        persistentVolumeClaim:
```

claimName: mongodb-pvc