

Факултет за информатички науки и компјутерско инженерство

Континуирана интеграција и испорака

Проект:

Speed & Sport Souvenirs

Изработено од:

Тодоров Борис 191096

Професори:

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проф. д-р Милош Јовановиќ

Датум:

23.09.2024

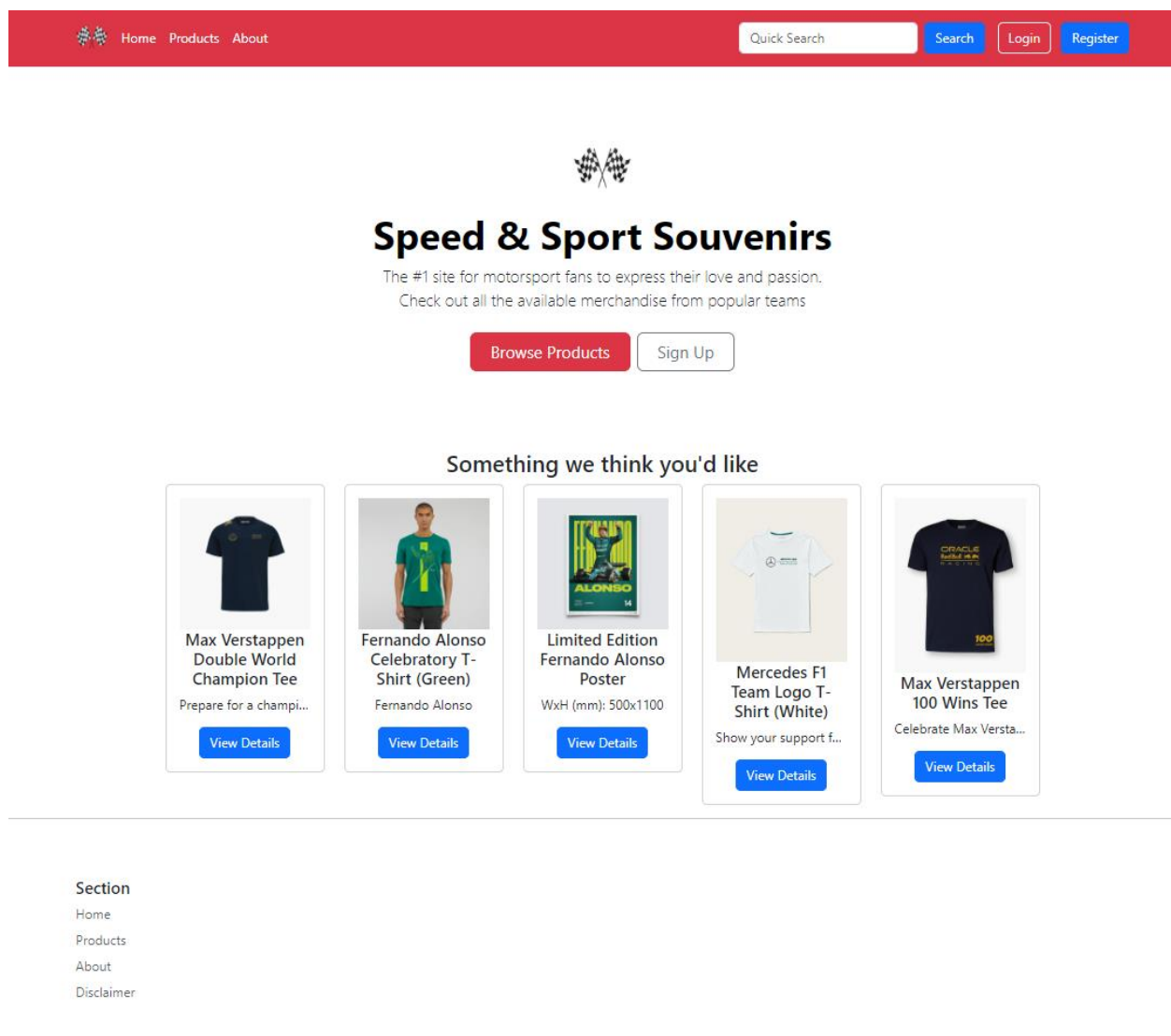
Во овој проект се работи на контејнеризирање и испорака на апликација со користење на Docker и Kubernetes. Апликацијата во овој проект претставува онлајн продавница за сувенири од мотоспорт развиена со Django и со користење на PostgreSQL база на податоци. Оваа апликација е земена од проект по предметот „Дизајн на интеракцијата човек и компјутер“.

Линкови до проектни фајлови:

GitHub - https://github.com/BorisTodorov/KIII_Project_SSS

DockerHub - https://hub.docker.com/repository/docker/t0dorov/speed_sports_souvenirs/general

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Dockerfile:

```
FROM python:3.12

ENV PYTHONDONTWRITEBYTECODE 1
ENV PYTHONUNBUFFERED 1

WORKDIR /app

COPY requirements.txt /app/

RUN pip install -r requirements.txt

COPY . /app/

CMD ["sh", "-c", "python manage.py migrate && python manage.py runserver 0.0.0.0:8000"]
```

Docker-compose:

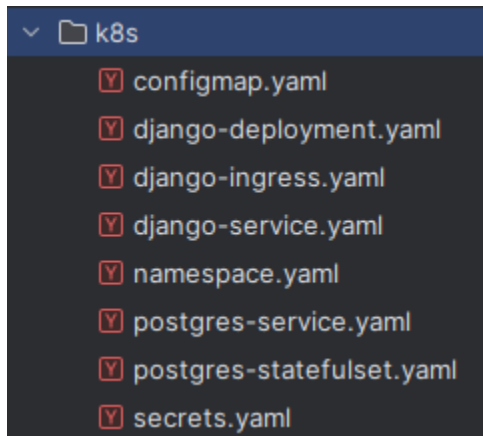
```
version: '3.8'

services:
  db:
    image: postgres:16
    environment:
      POSTGRES_DB: ${POSTGRES_DB}
      POSTGRES_USER: ${POSTGRES_USER}
      POSTGRES_PASSWORD: ${POSTGRES_PASSWORD}
    volumes:
      - postgres_data:/var/lib/postgresql/data
    ports:
      - "5432:5432"

  web:
    build: .
    command: >
      sh -c " python manage.py migrate &&
        python manage.py createsuperuser --no-input --username
        ${DJANGO_SUPERUSER_USERNAME} --email ${DJANGO_SUPERUSER_EMAIL}
        python manage.py runserver 0.0.0.0:8000"
    volumes:
      - ./app
    ports:
      - "8000:8000"
    depends_on:
      - db
    env_file:
      - .env

volumes:
  postgres_data:
```

Kubernetes:



Некои од манифестите:

Deployment:

```
apiVersion: apps/v1
kind: Deployment
metadata:
  name: speed-sport-souvenirs
  namespace: speed-sport-souvenirs
spec:
  replicas: 1
  selector:
    matchLabels:
      app: speed-sport-souvenirs
  template:
    metadata:
      labels:
        app: speed-sport-souvenirs
    spec:
      containers:
        - name: speed-sport-souvenirs
          image: t0dorov/speed_sports_souvenirs:latest
          ports:
            - containerPort: 8000
          env:
            - name: DATABASE_NAME
              valueFrom:
                configMapKeyRef:
                  name: django-config
                  key: DATABASE_NAME
            - name: DATABASE_HOST
              valueFrom:
                configMapKeyRef:
                  name: django-config
                  key: DATABASE_HOST
            - name: DATABASE_PORT
              valueFrom:
                configMapKeyRef:
```

```

        name: django-config
        key: DATABASE_PORT
- name: DATABASE_USER
  valueFrom:
    secretKeyRef:
      name: django-secrets
      key: DATABASE_USER
- name: DATABASE_PASSWORD
  valueFrom:
    secretKeyRef:
      name: django-secrets
      key: DATABASE_PASSWORD
- name: DJANGO_SUPERUSER_USERNAME
  valueFrom:
    configMapKeyRef:
      name: django-config
      key: DJANGO_SUPERUSER_USERNAME
- name: DJANGO_SUPERUSER_EMAIL
  valueFrom:
    configMapKeyRef:
      name: django-config
      key: DJANGO_SUPERUSER_EMAIL
- name: DJANGO_SUPERUSER_PASSWORD
  valueFrom:
    secretKeyRef:
      name: django-secrets
      key: DJANGO_SUPERUSER_PASSWORD

```

Service:

```

apiVersion: v1
kind: Service
metadata:
  name: django-service
  namespace: speed-sport-souvenirs
spec:
  selector:
    app: django
  ports:
    - protocol: TCP
      port: 80
      targetPort: 8000
  type: ClusterIP

```

StatefulSet за базата:

```
apiVersion: apps/v1
kind: StatefulSet
metadata:
  name: postgres
  namespace: speed-sport-souvenirs
spec:
  serviceName: postgres
  replicas: 1
  selector:
    matchLabels:
      app: postgres
  template:
    metadata:
      labels:
        app: postgres
    spec:
      containers:
        - name: postgres
          image: postgres:16
          ports:
            - containerPort: 5432
              name: postgres
          env:
            - name: POSTGRES_DB
              valueFrom:
                secretKeyRef:
                  name: postgres-secrets
                  key: POSTGRES_DB
            - name: POSTGRES_USER
              valueFrom:
                secretKeyRef:
                  name: postgres-secrets
                  key: POSTGRES_USER
            - name: POSTGRES_PASSWORD
              valueFrom:
                secretKeyRef:
                  name: postgres-secrets
                  key: POSTGRES_PASSWORD
          volumeMounts:
            - name: postgres-data
              mountPath: /var/lib/postgresql/data
      volumeClaimTemplates:
        - metadata:
            name: postgres-data
          spec:
            accessModes: ["ReadWriteOnce"]
            resources:
              requests:
                storage: 1Gi
```