# Containers and Cloud Exam Preparation

Problems for the exam for the ["Containers and Cloud"](https://softuni.bg/trainings/4359/containers-and-cloud-january-2024) course @ SoftUni

## Deploy a NodeJS app to Azure

You are provided with a simple Node.js app with a MongoDB database called "Reading List".

You should deploy the app the Azure, using Azure App Service and Azure Cosmos DB for MongoDB.

### Requirements

Provide **screenshots** of the **Resource Group**, the **app service configuration** with **visible** **values**, and from the running in a **web** **browser app**.

Place the URL for your deployed app in a text file.

Place all of the files in a folder named **{username}-task-1.**

## Deploy an ASP.NET Core MVC app to Azure via Terraform

You are provided with a .NET application that consists of two projects – one for the **web application** and one for the **SQL Server database**.

Your task is to deploy the app to Azure via Terraform. Deploy the app using four Terraform configuration files – **main.tf**, **variables.tf**, **values.tfvars**, **outputs.tf**.

### Requirements

Provide the Terraform configuration files and an **screenshot** of the deployed app.

Place all of the files in a folder named **{username}-task-2**.

## BONUS: Set up App Monitoring

Set up monitoring for the deployed .NET app in Azure. You should follow the steps and instructions below.

#### Set up Prometheus and Blackbox Exporter (pts.)

Set the following configurations in the **prometheus-exam.yml file:**

* Scrape the target every 15 seconds
* Metrics should be accessed on **/probe**

#### Set up AlertManager (pts.)

Set the following configurations in the **alertmanager-exam.yml file:**

* Set the timeout for alert resolution for 1 minute
* Specify the **webhook\_receiver (use the** [**web.hook**](https://webhook.site/) **website)**
* Specify that the alerts are sent to the **webhook\_receiver**
* Configure the alerting rules

Don't forget to change the configurations in the **prometheus-exam.yml** file

#### Set up Grafana (pts.)

Add a **Prometheus Data Source** in Grafana.

Create a Grafana Dashboard and create a **histogram** for the **HTTP probe duration metric**, then export the Grafana **dashboard** as a **JSON** file.

### Requirements

Provide the **prometheus-exam.yml** and **alertmanager-exam.yml** configuration files and the **JSON export** file from **Grafana**.

Place all of the files in a folder named **{username}-task-3**.

## Submission

Add all of the folders in an archive (**.zip**, **.rar**, **.7z**) and upload it to the **SULS** system.