SWE-455: Cloud Application Engineering
Homework 01:
Deploying a simple Cloud-based application
Due Date: February 23, 2025
Points: 50

You are required to deploy a simple web application to a cloud platform of your choice (e.g., AWS, Google Cloud, Microsoft Azure). The application can be a 'static website' or a "Hello World" REST API. The homework consists of the following four tasks along with their rubric (points distribution).

Task 1: Develop a sample application [10 points]

a. Create a simple web application using a framework of your choice (e.g., Flask, Node.js, Django, or React).

Task 2: Cloud deployment [10 points]

a. Select a Cloud Platform (AWS, Google cloud, or MS Azure)
b. Follow your chosen platform's documentation to deploy the app (Ensure your application is publicly accessible via a URL)
c. Set environment variables (if required)

Task 3: Scalability and Monitoring [20 points]

a. Configure your cloud service to scale up/down based on traffic (e.g., 2 instances minimum, 5 maximum).
b. Enable basic monitoring (e.g., AWS CloudWatch, Google Cloud Monitoring).
c. Include a screenshot of your app's health metrics (CPU, memory, requests).

Task 4: Documentation [10 points]

Write a Short Report that contains the following:

1. Describe the steps you took to deploy the app.
2. Explain any challenges you faced and how you resolved them.
3. Include screenshots of:
   3.1. Your application running in the browser.
   3.2. Your cloud platform's dashboard showing the deployed app.

Submission instructions:

Submit the following as a ZIP file or GitHub repository link:

1. Source code for your application.
2. Screenshots and report (PDF).

Note: This is an individual homework.