Oregon State University
Ecampus

CS361: Assignment 2: Microservices Warm-Up

Overview

To demonstrate you can implement the microservices architecture, write software comprised of three separate programs:

1. A program that generates pseudo-random numbers (**PRNG Service**)
2. A program that, given non-negative integer *i*, returns the i^{th} image in a set (order doesn't matter) (**Image Service**)
    - If *i* is **>=** the number of images, modulo *i* by the size of the image set
3. A user interface (**UI**) that either has a button or can receive a user command. When the button is pushed or the command is entered...
    (a) UI calls the PRNG Service
    (b) UI calls the Image Service using the pseudo-random number from the PRNG Service
    (c) UI displays the image (or a path to it)

Programs can be written in **any language(s)**.

Use **any set of images** (e.g., downloaded from https://www.kaggle.com/). **Store images locally in a folder**; no API calls are needed. No DB is needed.

Requirements

- UI must either have a button (if UI is graphical) or be able to receive a user command (if UI is text-based)
- Each of the three programs must run in a **different process**
- Programs must **NOT call each other** directly (e.g., do not import one program into another)
- As the **communication pipe**, use text files as follows:
    1. UI calls PRNG Service by writing the word "run" to prng-service.txt
    2. PRNG Service reads prng-service.txt, erases it, and writes a pseudo-random number to it
    3. UI reads prng-service.txt to get the pseudo-random number

4. UI writes the pseudo-random number to image-service.txt
5. Image Service reads image-service.txt, erases it, and writes an image path to it
6. UI reads image-service.txt and then displays the image (or path) to the user

- Create a **short video** (5 minutes or less) demonstrating you have satisfied the requirements.

Submission

Submit a **link** to your video.

There are two options for recording/uploading your video:

1. Record and upload following the instructions in Canvas > “Start Here - ReadMe First” > HOW TO: Create and Upload a Video

   OR

2. Record using the technique of your choice (ex: upload it to YouTube, and set it as Unlisted)

Grading

You are responsible for satisfying all criteria listed in the Canvas rubric for this assignment. You will be able to revise this assignment if you miss points.

Questions?

Please ask via Ed so that others can benefit from the answers.