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 a non-negative integer i, returns the i^{th} image in a set (order doesn't matter) (**Image Service**)
    - If i is larger than the number of images, modulo i by the size of the image set
3. A graphical user interface (**GUI**) with one button. When the button is pushed...
    (a) GUI calls the PRNG Service
    (b) GUI calls the Image Service using the pseudo-random number from the PRNG Service
    (c) GUI displays the image

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

Use **any set of images** (e.g., downloaded from https://www.kaggle.com/). **Store images locally**; no API calls needed.

Requirements

- GUI must have a button
- 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. GUI calls PRNG Service by putting the word "run" in prng-service.txt
    2. PRNG Service reads prng-service.txt, erases it, and writes a pseudo-random number to it
    3. GUI reads prng-service.txt to get the pseudo-random number
    4. GUI 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. GUI reads image-service.txt then displays the image to the user

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

Submission

Video via Canvas (there will be a Record / Upload feature when you go to submit the assignment)

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.