

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 *ith* 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...
4. UI calls the PRNG Service
5. UI calls the Image Service using the pseudo-random number from the PRNG Service
6. 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/ ).](https://www.kaggle.com/%20).%20) **Store images locally in a folder**; no API calls needed. No DB 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 then displays the image (or path) to the user

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

# Submission

Embed or link to **video**.

**For video, you must follow instructions at Modules > “HOW TO: Create and Upload a Video”.**

# 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.