

# SWE 645: Extra Credit Assignment

## Objective:

Reimplement **Homework Assignment #3** using **Python**, containerize your application, and deploy it to a **Kubernetes cluster** using the **CI/CD pipeline** that you developed in previous assignments. This extra credit opportunity can help **boost your overall grade** and give you valuable hands-on experience with end-to-end deployment pipelines.

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## Group Work:

- You may complete this assignment with your **current group**.
  - Alternatively, you may **merge with another group**, but the total group size must **not exceed 8 students**.
  - Be sure to **list all group members** in your documentation.
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## Requirements for Full Credit:

1. **Documentation (MS Word or PDF):**
  - Describe the **design** and **implementation** of your Python solution.
  - Include **screenshots** of your source code.
  - The document should clearly explain all steps you took — I should be able to understand your entire solution just by reading it.
2. **Video Presentation:**
  - Create a **video recording** (screen capture with voiceover) walking through your documentation.
  - Explain your design and code.
  - Demonstrate the **working CI/CD pipeline** that deploys your Python application to Kubernetes.
3. **Optional In-Class Demo:**
  - You are encouraged (but not required) to present your work in class.
  - You don't need a separate slide deck — simply walk through your documentation and demo the CI/CD pipeline deployment.
4. **Final Submission:** Submit a **zip file** that includes:
  - All source code and configuration files required to implement and deploy your application
  - Your **documentation** (MS Word or PDF)
  - Your **recorded video** walkthrough and demo