

Phase #1:

I. Printer Simulator Requirement specification:

The purpose of this Printer Simulator is to provide a virtual printer where users can test and simulate the printing process of a computer printer.

Support the printer status: It should be enumeration with values:

Idle: The printer is ready to print and waiting for a print job.

Printing: The printer is currently printing a document.

Paper Jam: The printer has experienced a paper jam and cannot print until the jam is cleared.

Out of Paper: The printer is out of paper and cannot print until more paper is added.

Offline: The printer is not connected to the network or computer, or it is turned off.

Low Ink or Toner: The printer is running low on ink or toner and may not print until the cartridge is replaced or refilled.

Error: The printer has encountered an error and cannot print until the error is resolved.

Busy: The printer is currently printing another job and cannot accept any new print jobs.

Paused: The user has manually paused the print job or the printer is waiting for user input before proceeding.

Cancelled: The print job has been cancelled by the user or the printer due to an error or issue.

Unknown: The printer status is unknown or cannot be determined.

Printing Queue.

It should have a printing queue that manages the print requests.

Printer Operations:

Print: The printer produces a hard copy of a document or image. As a simulator just export the text into pdf file.

Cancel Print: The printer stops the current print job.

Pause Print: The printer temporarily stops the current print job.

Resume Print: The printer resumes a paused print job.

Check Ink or Toner Levels: The printer checks the remaining ink or toner levels in the cartridges.

Replace Cartridges: The printer replaces empty or low cartridges with new ones.

Calibrate Printer: The printer adjusts its settings to optimize print quality and accuracy.

Power On/Off: The user can turn the printer on or off.

Update Firmware: The user can update the printer's firmware to fix any issues or add new features.

Reset Printer: The printer can be reset to its default settings or cleared of any errors or issues.

Printer Stats

Last Print, Last Run, Count of all printed documents.

II. Architecture

The Printer Simulator should be designed as a client-server application. The client will be the user interface, and the server will handle the printing process. The server should run as a service written by Python. Implement the REST-FULL API requests of all the functions described above.