Convert a wired printer into wireless using a Raspberry Pi

Requirement specification document:

Printers may not be the most convenient peripheral devices for your computer. They look inappropriate at most desks, but you can also spend hundreds of dollars on a sleek new network printer in one corner and receive print orders from any computer on your local network.

At our school, we have the AJP Printer and it has been so annoying to move the printer from a room to another each time someone needs to use it, let along, plugging it every time, checking the connection via USB etc..

Or, if you are a maker, you can connect a regular USB printer to the Raspberry Pi and hack together a network printer! If you have not used your printer on Linux, before you start, go to the Open Printing website and check if your printer is compatible with CUPS print server software.

That is why, we came in with a solution to such problem: converting the wired AJP Printer into a wireless printer with a Raspberry Pi. We are five students from GITAM*, and through this document, you'll find the different requirement specifications of the project.

With a $25 RPi Model A, a $2 power supply, a $5 SD card and a $5 of LEDs and resistors, it is possible to turn almost any wired printer to a wireless one thanks to CUPS software, a Raspberry Pi, and some programming skills. Let's go!

1. **<u>User Perspective</u>:**

- Download the software
- Choose the document you want to print
- Press print
- Go get your papers from the room where the printer is situated

2. **<u>Designer Perspective</u>:**

- When browse a file is clicked, the software will let you choose a file
- When print is clicked, the file will be sent via sockets to the Raspberry Pi, which is connected to the printer via an USB cable, and will print it
- If two people connect at the same time, both can send their files, and the one who sends first will get his documents first (Last in First Out)

3. **<u>Constraints</u>:**

- Cost: Less than 40$ in total ($25 RPi, $2 power supply, $5 SD card, $5 of LEDs and resistors)
- Implementation time and performance:
    - File transfer speed: 0.5Mb/s → 1.5Mb/s
    - Printer speed: 9 → 10 PPM (Pages Per Minute)