Vivekanand Education Society's Institute of Technology

In Association with IIC and IQAC

Presents

NATIONAL PROJECT EXHIBITION

TECH4GOOD 2022

"E-Printer using Radio Frequency Identification"

Team Members :

1] Hrutika Mahesh Pakhale

2] Nidhi Roshan Mundhada

3] Shripad Vinayak Kulkarni

Mentor Name: N. Gopalkrishnan

College Name: Vivekanand Education Society's Institute of Technology

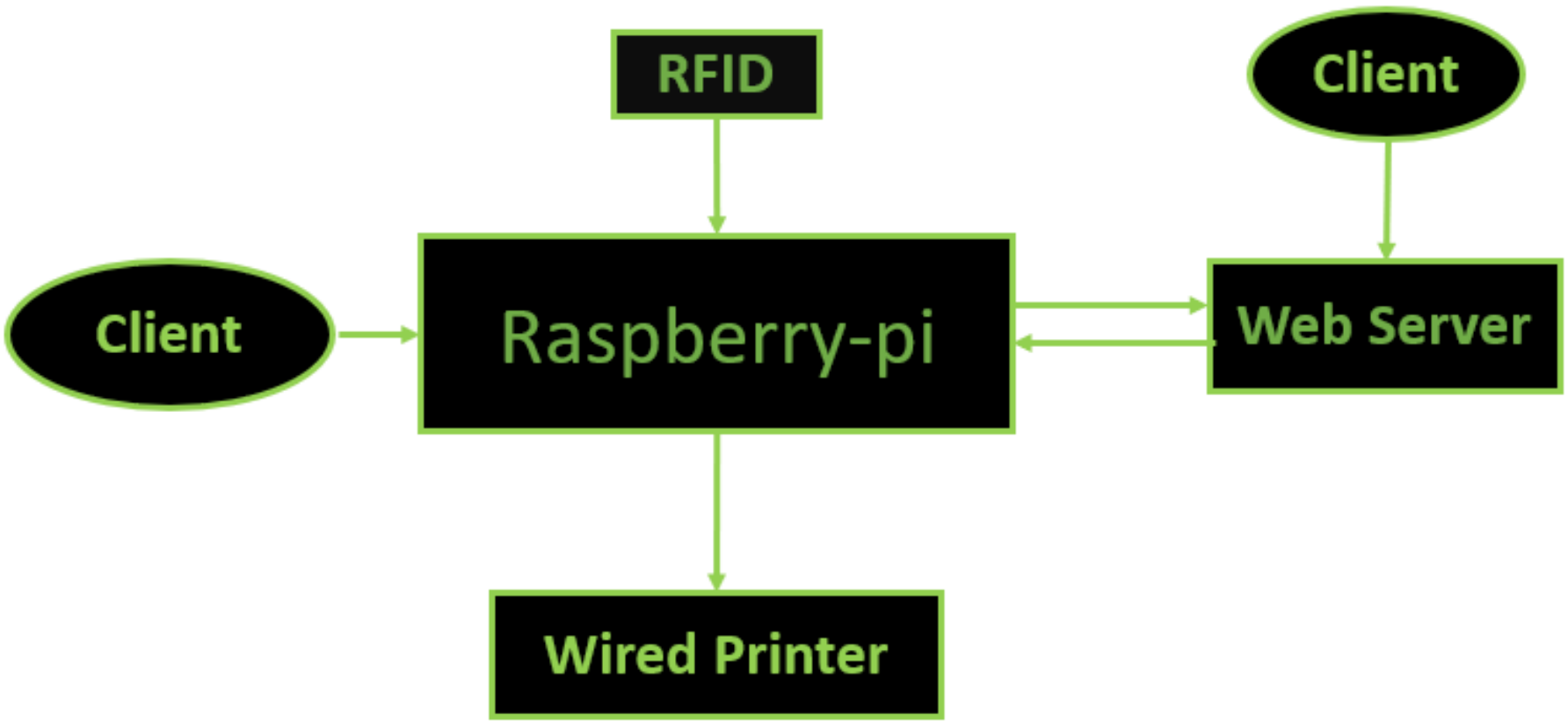
PROBLEM DEFINITION: To design an E-Printer to solve the following problems:

1. Long queues and overcrowding at printing workstations in various workplaces like schools, colleges, etc.
2. Manpower is required to print the required document.

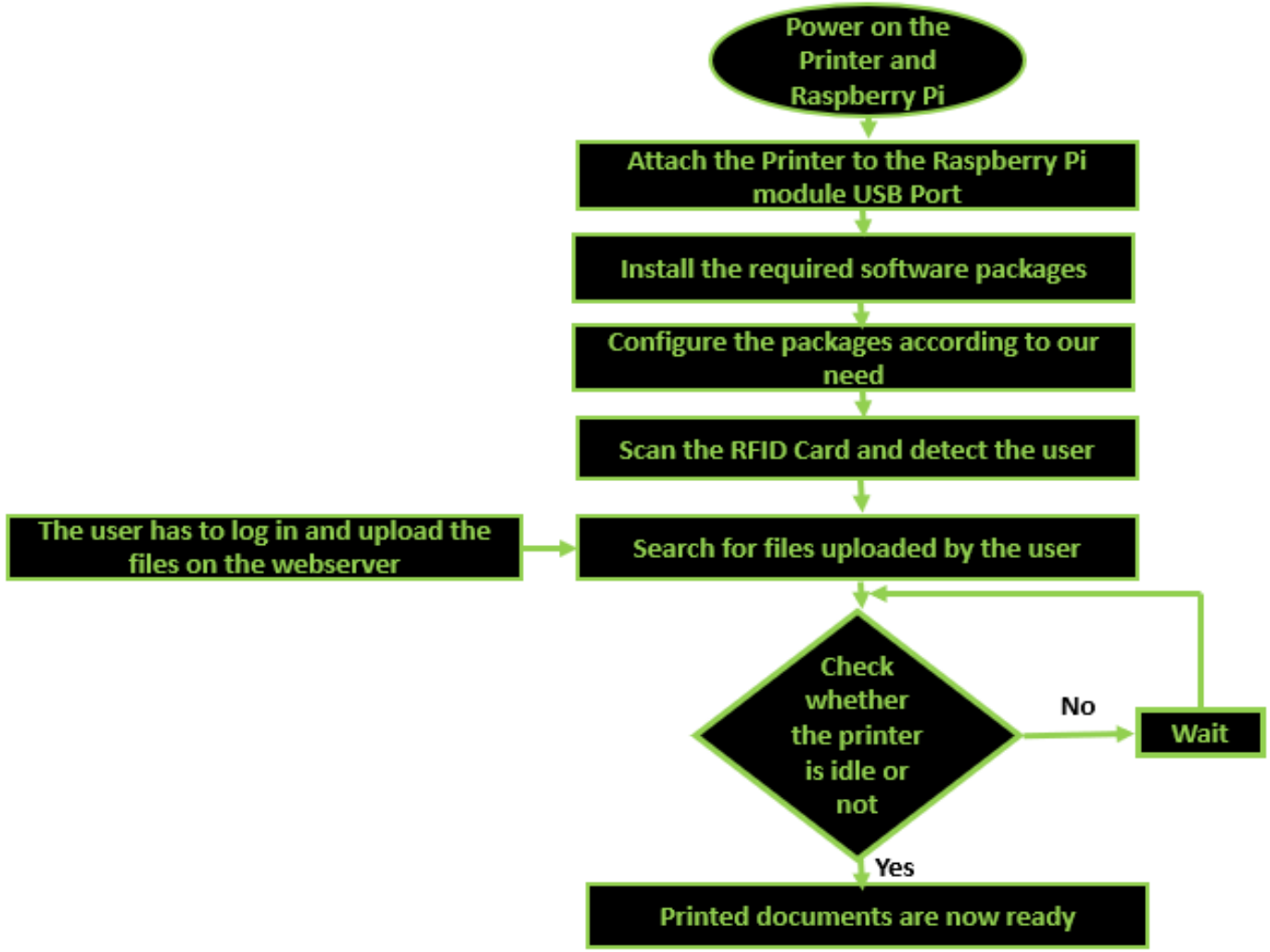
PROPOSED INNOVATIVE SOLUTION: The proposed design aims at printing from a local printer just like printing from a wireless printer. This idea has a lot of advantages, a few of which are mentioned below:

1. The use of a traditional printer as a wireless printer reduces the expenses of purchasing a new wireless printer, also it saves the dumping of an old traditional printer. Thus, it reduces E-Waste.
2. The wireless printers available in the market are costly and proprietary. There is a possible way to use the already available printer as a wireless printer in our homes, colleges, or office environment.

BLOCK DIAGRAM:



METHODOLOGY: Flowchart



RESULTS:

- Scanning the RFID Card, the user is identified by the Raspberry Pi.
- Then the Raspberry Pi would check for any files uploaded by the user on the webserver.
- If found, the Raspberry Pi would directly print it.
- In a few seconds printer gives the output. In this way, documents get printed. In this way, the human intervention during the printing of a document is reduced. Thus automating the system and making it faster.

CONCLUSION (Cost Incurred & Benefits to the Society) :

- In the proposed work a system is developed where a traditional local printer attached with a Raspberry Pi module working as a Print Server performs printing operations through web services. Due to this, the need for a dedicated desktop computer connected to the printer is now eliminated after using the designed system. By adopting this type of embedded system e-waste of old printers is lessened as there are millions of units are produced every year in the market according to International Data Corporation (IDC).
- The proposed methodology-based E-Printer's overall cost is the sum of the costs of the normal laser printer, the RFID, and the Raspberry Pi which is Rs. 2500/- approx. that can be further reduced if the dedicated hardware design will be carried for such kind of system.
- As the system at present comprises a Raspberry Pi board, dedicated hardware may be designed which will enable us to reduce overall cost and improve the processing performance. Even the possibility is to develop an online payment gateway for the users.