DEVLEOPMENT STAGES & PROCESS

The complete development of thissystem can be divided into the following stages:

* problem definition stages
* designing block diagram
* implementing circuits and components
* developing algorithms cfor software
* writing actual code for micrcontroller
* compiling the code
* burning the hex file into micrcontroller with programmer
* testing and run

PROBLEM DEFINITION STAGE

This is the very first stage to develop any project. It actually defines the aim and the concept of the project. The aim of "Automatic Paper Vending Machine" is to deliver the

DESIGNING BLOCK DIAGRAM

At this stage we have categorised the whole system into different individual modules. These modules will be helpful in understanding the concept and working of the integrated system.

IMPLEMENTING CIRCUITS AND COMPONENTS

This is the actual implementation of circuit of each block. At this stage we have actually designed each block separately and finally integrated them into the compplete working system.

DEVELOPING ALGORITHM FOR SOFTWARE

To get the logical flow of software the development of algorithm is having a prominnet role so that we have analysed the complete system and organised the algorithm in such a manner that one can understand the complete working of the software.

WRITING ACTUAL CODE FOR MICROCONTROLLER

After the development of alorithm of flowchart we have actully translated them in C language for PIC16F877A Microcontroller so that it can understand the instructions and run as per our requirement. The instructions are in ANSII C language.

COMPILING THE CODE

The code is implemented on the computer for which we have used Keil preinstalled on PC. The Keil is a computer aided program to simulate the working of microcontroller in real time without burning the software into actual IC. We simulated and compiled our program for error checking. After removing of several compiling errors the program was converted into machine language i.e. Intel hex format.

ADVANTAGES

The main advantages of this automatic paper vending machine include:

1. It reduces the time taken to deliver the paper when a customer asks for the number of papers.
2. The counting of the required number of papers to be delivered would be accurate.
3. Faster delivery of papers to the customers would be possible during peak time and the unnecessary crowd near the stationery shops near the educational institutions, during examination season would be avoided.
4. Reduces human effort.

DISADVANTAGES

The disadvantages of this automatic paper vending machine include:

1. Since Vending machine is used in public areas it can suffer vandalism.
2. Passive RFID tags cannot be used for long range detection.
3. RFID signal frequencies across the world are non standardized. For instance, the US and Europe have a different range of frequencies at which RFID tags function. This makes it mandatory for international shipping companies and other organizations to be aware of the working pattern in other nations.
4. RFID is considered by many to be an invasive technology. Consumers tend to worry about their privacy when they purchase products with these tags, as there is a belief that once radio chips are installed in a product, it continues to track a person, and his personal information can be collected by it and transmitted to the reader. So while many stores claim that they deactivate the tags after the product has been purchased, buyers still continue to remain apprehensive of this technology.

FUTURE SCOPE

There are ample choices of future implementation aspects to this system. They are as follows:

1) A scanner can be added for detection of barcode and authorized signatures; this can be used when authorized medicines are given. Scanner that verifies and counts can be used.

2) The capacity of the machine can be increased by adding springs and motors.

3) It can be made more user-friendly by making it a touch screen based vending machine.

4) Using combination of different type of sensors, the machine can check whether the product is in stock or not.

5) Using advance currency detector and acceptors can increase in number of detection of different types of currency notes and coins.

APPLICATIONS

Automatic paper vending machines can be used in places such as

Food Outlets

Educational institutions

Government offices such as District Collector office, Tahsildar office, employment exchanges, etc.

Courts, Railway stations, Bus stands, Parks etc.

CONCLUSION

Though, automatic vending machines are available to deliver various commodities, the vending machine to deliver raw sheets of paper do not exist, which is a much needed one. Paper finds applications almost everywhere and this type of automatic paper vending machines could be used to reduce time and human effort with improved accuracy.

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