Remote Feeding System

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Introduction

Nowadays, owning a pet is always the dream of much people. However, some of them still cannot own a pet. For example, those who are living alone and need to work everyday cannot own a pet because they have no free time to take care of the pet. This is how our idea came about because we noticed the need. Our project aims to help the people who want to own a pet but have not enough time to take care of it.

The Remote Feeding Machine can prevent you from worrying about your pets when you are out of home. The product is mainly divided into 3 parts,

1) The Establishment of webpage by using JAVA.
2) The USB Communication between PC and MCU.
3) The Control of other hardware by the MCU (PIC18LF4550).

The user can simply login to the webpage and then taking out the action of remoting the Feeding Machine. The webpage is written by the Java scripts and the function is to transmit the data through the internet to the USB socket of another computer. After the MCU received the signal, it will run the stepper motor to take out the function of feeding.
Methodology

Hardware:

1) MCU (model: PIC18F4550)
2) USB Connector
3) Wire connecting to stepper motor

USB Connector is connected to PC at home which serves as a server. If the server received signal from remote user, that will be transmitted to the MCU through USB Connector and perform some tasks such as rotating motor for feeding.

Software:

This project allows users to login a webpage to send a signal to the machine for feeding. To achieve this, the software was designed to contain mainly 2 parts:
1) Java program for establishing WebPages.
2) C program contained in MCU.

What does the Java program do:
1) Decide what to be shown on webpage.
2) limiting who can login.
3) Searching the serial port to output signal.

What does the C program do:
1) Rotation of the stepper motor.
2) Migration of the USB Port to the Serial Port.
**Results**

1) The user can login to the system easily, the system is user-friendly 😊
2) Remote Feeding Machine can attract and feed the pet 😊

**Conclusion:**

As every pet owners want to take a good care of their pets, we then have the idea of making this project. This contains the communication through internet between PCs and MCU. After implementing all of them, the task like remotely controlling stepper motor can be easily done. The most challenging task of our project is the internet communication between two computers and the MCU.

**Further Work:**

After doing this project, we found that we can add more functions to our project to improve its value such as:

1) Implement **webcam** and **microphone** for transmitting video and audio signal.
2) Implement **heat sensor** and a **fan** for cooling when it is hot.