Barcode Implementation

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Abstract

- Create a labeling system
- Study on Co-Existing issues of RFID and Barcode

<table>
<thead>
<tr>
<th>Barcode</th>
<th>Done</th>
</tr>
</thead>
<tbody>
<tr>
<td>Code128</td>
<td>O</td>
</tr>
<tr>
<td>Code93</td>
<td>O</td>
</tr>
<tr>
<td>UPC-E</td>
<td>O</td>
</tr>
<tr>
<td>Code25 Industrial</td>
<td>O</td>
</tr>
<tr>
<td>Code25 Interleaved</td>
<td>O</td>
</tr>
<tr>
<td>Code25 Matrix</td>
<td>X</td>
</tr>
<tr>
<td>MSI</td>
<td>O</td>
</tr>
<tr>
<td>Postnet</td>
<td>O</td>
</tr>
<tr>
<td>Codabar</td>
<td>O</td>
</tr>
<tr>
<td>(Optional) PDF417</td>
<td>X</td>
</tr>
</tbody>
</table>


I read articles about recent issues RFID and barcode on the web.

I used Visual Studio 2005Beta2 to make them.

Introduction

The barcodes have been used for several decades all over the world and to every industry. It helps track the merchandise and check the stock in the inventory. It has been used in the post office, market, enterprise and so on.

In these days, RFID(Radio Frequency Identification) is used instead of barcode. It is more efficient that barcode. But it has one problem. It’s the cost. People have to use more RFID to decrease the cost of each RFID tag. However it isn’t cheap, it’s not possible to use more RFID tags.

It is a transition from barcode to RFID today.

Even though new technology called RFID appears, I think I have to know the barcodes that are led industry. RFID has some problems, we cannot avoid using the barcode.
**Previous Research**

This is the schedule table during six weeks.

<table>
<thead>
<tr>
<th>Date</th>
<th>Work</th>
</tr>
</thead>
<tbody>
<tr>
<td>7/4~7/8</td>
<td>Study about RFID&amp;barcode.</td>
</tr>
<tr>
<td>7/11~7/15</td>
<td>Analysis of a sample code and Start to implement.</td>
</tr>
<tr>
<td>7/18~7/22</td>
<td>Implementation of Code128, Code93 and UPC-E.</td>
</tr>
<tr>
<td>8/1~8/5</td>
<td>Implementation of MSI, Postnet, Codabar and Test.</td>
</tr>
<tr>
<td>8/8</td>
<td>Test.</td>
</tr>
</tbody>
</table>

Here is some information about each barcodes.

- Code128 : It is a widely used barcode.
- Code93 : It is compressed form of code39. Code39 is an initial barcode.
- UPC-E : It is a Universal Product Code. There are three UPC barcodes such as UPC- A, UPC-C, UPC-E. We can easily see this barcode in our life such as chocolates, candy and so on.
- Code25 Industrial : 25 means that it use 5 bars, 2 are always wide. It is used in airline ticket marketing, photo finishing.
- Code25 Interleaved : It is used in warehouse and industrial applications.
- MSI : It is Modified Plessey code and used in library.
- Postnet : It is printed by U.S post office on envelopes.
- Codabar : It is used in libraries and blood banks.

**[Project Main content]**

I made a capture what I implemented.
The user interface consists of three parts. They are input section (Textbox), some buttons and output section.

- Code128  
  (Input: HI345678)
- **Code93**  
**Input:** TEST93

- **UPC-E**  
**Input:** Manufacture - 42100, Product - 00526  
Number 425261 below comes from a combination from manufacture and product code.

- **Code25 Industrial**  
**Input:** 1234567
- Code25 Interleaved  
  (Input: 1234567)

- MSI  
  (Input: 8052)

- Postnet  
  (Input: zip code 80122)
(Input: zip code 80122-1905)

(Input : zip code 80122-1905 12)

- Codabar
  (Input: A40156B)
These are pictures when I test barcode. I used barcode reader and checked whether it works well or not.

Summary

I've implemented Code128, Code93, UPC-E, Code25 Industrial, Code25 Interleaved, MSI, Postnet, Codabar and gotten basic information about RFID.

Before I started this project, I didn’t know that barcodes are made with programming. During the project, I realized that barcodes are widely used in our life and how many barcodes exist.

Reference