

Product Information on Your Cell Phone
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In our increasingly socially-conscious world consumers are wanting to have the ability to make product purchases that align with their particular moral and social beliefs. This can range from people choosing to purchase environmentally-friendly paper towels, to people wishing to purchase movies produced by a particular religious organization. Even more importantly, it has been shown that people are willing to pay more for items that align with their beliefs than they are for functionally-equivalent alternative items. Thus, companies are attempting to advertise on their products whether they are environmentally friendly, or free-trade, or any number of other factors which they think will entice individuals to purchase their product.

The goal of this project is to create a system that lets owners of cell phones which contain both a camera and internet connection be able to obtain personally-relevant information about any given product on their cell phone in a quick, simple, and easy to use manner. The main focus on this project is in creating a database which holds information on a large (nearly 1 million) number of items, and has as much information on these products as I can obtain. My goals for this class are to be able to associate with each product in the database the following pieces of information: Name, description, manufacturer, price at least two locations, whether the item has been recalled, and for food items whether the product has any allergens. I will also incorporate into the system a method to easily let approved third-party groups or individuals add information to the database.

The method the user will take to lookup information from the database is to use their cell phones camera to scan the barcode of an item. Using a barcode-recognition algorithm I am implementing the barcode will be converted to either a UPC or EAN-13 code and looked up in the database. Information will then be retrieved and presented on the users cell-phone screen using the cell phones web browser. The key to displaying the information will be to give the relevant information in a compact manner so the user can get all the information at a single glance, without having to scroll the page or navigate to other pages.

References: All references are for barcode detection methods

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[2] Otero, A. 1999. A Robust Software Barcode Reader Using the Hough Transform. In *Proceedings of the 1999 international Conference on information intelligence and Systems* (March 31 - April 03, 1999). ICIIS. IEEE Computer Society, Washington, DC, 313.

[3] Ohbuchi, E., Hanaizumi, H., and Hock, L. A. 2004. Barcode Readers using the Camera Device in Mobile Phones. In *Proceedings of the 2004 international Conference on Cyberworlds (Cw'04) - Volume 00* (November 18 - 20, 2004). CW. IEEE Computer Society, Washington, DC, 260-265.

[4] Chai, D and Hock, F. Locating and Decoding EAN-13 Barcodes from Images Captured by Digital Cameras. ICICS 2005.

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