

Barcode Enabled Inventory Management Systems for Pharmaceutical Company

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Abstract: This research explicates the advance of Inventory Management System (IMS) and as a part of the research a system has been developed to automate the manual inventory management of a pharmaceutical company. Most of the inventory systems which are being used by pharmaceutical companies are either paper based manual systems or file based systems which make use of spread sheets or similar electronic documents to keep track of their inventory. It was found that these manual/file based systems are causing many problems such as finding correct unit of stock and they are unable to be used for order management and automatic inventory identification. To develop the system, necessary data were collected directly by interviewing the stake holders and the system was designed to fulfill their needs. In addition a case study was done at Staatum Pharmaceuticals (Pvt) Ltd. In order to provide a holistic solution bar code technology was incorporated. Data Flow Diagram (DFD) is used for process modeling where it shows the complete movement of data between entities: Staff, Management and Information executives, and also between the processes and data stores within the system. A context diagram was prepared to define system's boundaries by highlighting its sources and destinations and an ER diagrams was prepared for designing the database. Barcode enabled IMS was developed using Microsoft Visual Studio 2008 as a development tool and the core language of the system is ASP.net with Visual Basic. The database used for the system is Microsoft Access 2007 and ADO.NET and XML are used for the data access technology and it can be hosted on any Internet Information Server (IIS) that supports .NET framework 3.5 or any ASP.NET development server. Visual Basic.Net (VB.Net) is chosen for Graphics User Interface (GUI). Bottom-up testing strategy is used in this system to avoid unnecessary duplication of effort. Individual objects were tested in isolation using unit testing and gradually integrated for the higher-level integration testing and system testing. For the user testing, two Inventory department employees and managing director of Staatum Pharmaceuticals (Pvt) Ltd, were involved to confirm that the developed system meets the user requirements. User testing was done in a simulated "real" user environment. The developed system is found to be save time in stock management and able to automate all other related functions with the help of the Barcode technology. The system is able to run on any web browser. Pharmaceutical companies can use the system and increase their productivity by saving more time and resources. This system is able to provide a better solution not only for pharmaceutical companies but also other similar retail business organizations.