

A Survey on Interactive Clothing Based on IoT using QR code and Mobile Application

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Abstract— The invention of Internet has made the day-to-day life easy and less complicated. The proposed system is called Interactive clothes that make use of QR code and IoT. A QR code is embedded within the clothes that consist of a unique Id. A mobile application is developed that scans the QR code present in the cloth and gets linked to a database stored in a cloud database. It provides a digital environment for both the manufacturers and the end users. From manufacturing perspective, the system has the ability to identify fake brands, keep track of the loyal customers, and minimize the resources waste and keeping track of the goods using a single relational database system. For end users, the benefits are huge. The mobile application(Personal Stylist) provides a simple user interface where users could get suggestions regarding their clothes with other outfits, dressing according to the season and deciding whether the color suits their skin tone or not.

Keywords— Cloud database, IoT, Mobile application, QRcode, Relational database system.

I. INTRODUCTION

As we all know that, food, shelter, clothes, health and education are the fundamental need for human being. With the progression and increment in development, however changes made in cloths enhanced exponentially. These days, the real test looked by the vast majority of the mainstream brands like Adidas, Nike etc.is replication of their merchandise operating at a profit showcase. There are no any strategies have been innovatively created to perceive the fakes that are in some cases unwittingly purchased by customer. Anyone who buys cloths clearly look the brand esteem, shading, quality, surface and material. When a customer purchases a cheap cloths unconsciously, they may be pretended for the quality of original one.

Keeping in mind the end goal to satisfy the customer requirements with the end goal, Internet of things technology, QR code and Mobile Application advancements are used. IoT is another upset of the web which is utilized to interface items to a major system utilizing the Internet. Advancements in IoT are the need of great importance. IoT discovers its utilization in different fields like wellbeing, training, ventures, and so on. The proposed framework influences utilization of QR to code implanted inside the cloths. By associating the cloths to the terminal of the internet utilizing QR codes, recognizable proof, following and observing of the cloths to which tag is connected turns out to be simple. They are cheap substitution to conventional scanner tags and can hold much more

information. They also provides support to different encryption mechanisms.

The principle of most recent QR codes is that it can be influenced waterproof and tidy making it more vigorous. These days, everything depends on cloud and specialists too believe that distributed computing is the new pattern in the improvement of IT. For gadgets where memory is an issue, cloud innovation has given an answer. It is an Internet based figuring innovation where administrations are given to the end clients on a compensation for each utilization premise. It helps in the capacity, recovery and upkeep of large information with included points of interest like omnipresence, consistency, unwavering quality, etc. It in this manner fills in as the platform for the advancement of different new technological developments. The whole information inside the proposed framework "Interactive Clothes" is put away and recovered from cloud system; this incorporates every information beginning from the producers to the merchants and the end users.

Rest of the paper is organized as follows, Section I contains the introduction of IoT, Section II consists of Literature Survey, Section III consists of Proposed System Architecture, Section IV concludes research work with future directions.

II. LITERATURE SURVEY

With the improvement of web based business and the blasting of m-trade, recommendation(suggestion) frameworks turn into a basic capacity of web based shopping platforms (e.g.

Flipkart.com, Snapdeal.com) to help customers to rapidly and easily discover the things that address their issues and inclinations. Such proposal in this manner likewise accommodating to act programs as purchasers and thus expanding strategically pitching and also building user's reliability [1].

Current parking framework experience may go from delayed meetings; fine charge from the person in no parking zones, vehicles making tracks in an opposite direction from that dead zone the space that fringes on the stopping and furthermore no parking zone. With 900,000 autos and 16 million bikes are getting added to Indian nation streets consistently, finding a place to stop is a fight in the present world. For such issues, a critical arrangement has been proposed in the present parking administration frameworks with RFID innovation. For that reason, RFID readers, RFID labels, PC, barriers and softwares are utilized as principle components [2].

Due to the effect of capturing environment and resolution, these 2D barcode images are captured by scanner or digital camera, these 2D standardized tag are caught by scanner or advanced camera such as spherical distortion, geometric distortion, image blurring. Furthermore this 2D barcode is then even partly defiled so that it can't be recognized. In order to increase the efficiency of recognition for 2D barcode, the captured images must be gone through preprocessing [3].

Numerous conventional membership or rental administrations have gone online nowadays. The majority of these specialist organizations expect, users to enroll their, real identity. Tragically, if the suppliers gather and dissect their customer's rental records, this may cause security ruptures to the customers, for example, individual side interests, ways of life, or rental propensities [4].

Quick Response code (QR code) is the latest invention in the mobile marketing world. QR codes ability of linking brick world to digital domain is changing the approach of marketing. It gives marketers an opportunity to interact with consumers and engage them with their brand. In this paper, it intends to assess the need and necessity of the QR code in business, QR execution [QRI], the relationship between QR code and the production network, pros and cons of QR code. This article will endeavor to discover the right way in production sector. We should assemble more knowledge after the further investigation of various articles and this is the essential procedure [5].

The world has been changed significantly due to enhancing of the technology. With an expanding number of cell phone clients and customers grasping a versatile way of life, retailers ought to embrace a portable showcasing outlook keeping in mind the end goal to construct manageable and beneficial associations with portable insightful consumers. It is reported

that around 82% of U.S, mobile telephone clients scan for shopping data or make buys through their cell phones [6].

The need for data has increased with the increase in the number of users and data. So many cryptographic algorithms are implemented to provide better security at lower cost. Thus in this paper, MD5 and Blowfish (cryptographic algorithms) are studied. They are then compared based on different parameters and are then considered for FPGA implementation [7].

III. PROPOSED SYSTEM ARCHITECTURE

A. Embedding QR code in cloth

A laminated QR-code is impervious to water and dust, pressure is implanted inside the cloths. The QR-code has a special Id written in it by manufacturer. The manufacturer will create a new entry for the Id, fill his side of the table information. The retailer, after selling the product will fill a couple of extra points of interest. In the user side, the QR-code will be scanned by the Mobile Application, then the Id will be read by it. It is cross referenced with the database after that, corresponding details are retrieved.



Figure 1. Basic Positioning of NFC tag in a cloth.

B. Cloud Database

This database contains all the important fields to serve the inquiries of the manufacturers, retailers and end customers. Once the Id is read it is checked further for its a legitimate id or not, this helps to take out counterfeits All the insights about the item are not visible to everybody. Abstraction is done based on each entity's access rights and the type of query, and just the essential information is conveyed to them. This information is then used by these entities for the proposed purposes.

C. Mobile Application

A mobile application (Named as Personal Stylist) based on android platform is developed, acts as the Interface between the end user and the interactive clothes. The working of the whole system is illustrated in the figure below. Here the actual process is given below:

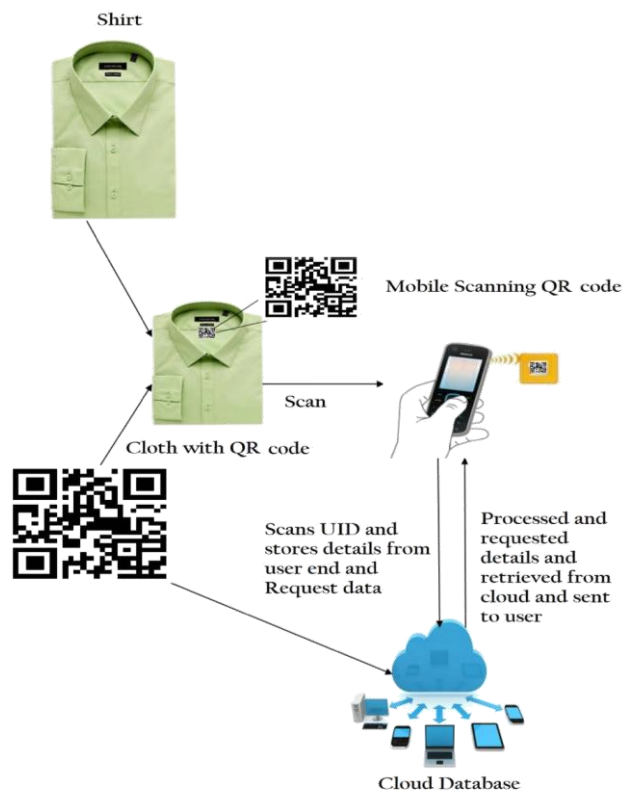


Figure 2. Basic Working of System

IV. CONCLUSION

The paper proposes the utilization of internet of things and QR code innovation to modernize the way toward assembling, purchasing, offering and overseeing items in the garments and form industry. The versatile application which is proposed helps the end clients as well as gives an extensive variety of administrations to the assembling organizations. Does it distinguish fakes as well as helps the clients in numerous ways like digitizing clothing occupations, keep wash checks, etc. Finally, the framework intends to connect web with the clothes part and along these lines centres around conveying new developments. Another measurement of administrations will be released because of this conjunction in this way enhancing the Quality of livelihood.

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