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Intelligence System for Retail using Bot Technology

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***Abstract*—Usually, customers in retail shops getting struggles to find products which they want to buy and stand in a billing queue for bill payment of the products. This may makes the customers to spent long time. As in this modern and fast moving world, each minute is valuable for peoples. So, the Mobile retail application saves peoples estimable time by making the process faster to complete. By using DBTech, which is widely used in the business applications to evolve transaction processing faster and safer. As consumers Internet activities were shifted from the desktop web to mobile, new opportunities to interact with products are becoming prominent. Using android apps with BOT Technology, the users have to pick the mall and availability of products details by using text and/or voice search to make purchasing as faster.**

***Index Terms*— Mobile application, Android Technology, Database technology (DBTech), Build Operate Transfer (BOT) Technology, Text and Voice searching.**

I. INTRODUCTION

Mobile Computing is a modern technology that allows transmission of text, audio and video through a computer or any other wireless devices without having to be connected to a stable physical links.

A. Mobile Communication

The mobile communication technology refers to the infrastructure which in place to ensure that seamless and reliable communication goes on. These would include devices such as services, bandwidth, portals and protocols which are necessary to facilitate and support all kind of services. The highly supported data format is defined at this place. This make sure that there is no data collision with other existing systems which offer the same type of service. Since the media is unguided, the overlaying infrastructure is radio wave-oriented. That is, the signals are carried over the air to wireless devices that are capable of receiving and sending same types of signals as a data.

B. Mobile Hardware

Mobile hardware includes mobile devices or wireless device components that receive the service of mobility. They would have range from smaller to larger types of devices like portable laptops, smartphones, tablet Pc's, Personal Digital Assistants. These devices will have a receptor medium that is capable of sense and percept signals. These devices are configured to work in full- duplex mode, whereby they are capable of sending and receiving signals at the same time. They no need to wait until one device has to finish communication and another one to initiate communications. Above mentioned devices use an existing and established network to operate on that wireless network.

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C. Mobile Software

Mobile software is the type of program that runs on the mobile devices. It deals with the characteristics and requirements of mobile applications. This act as the engine of the mobile devices. In other words, it is the operating system of all appliance. Since portability is the very important factor, this type of computing make sure that users are not tied to a single physical location, but are able to operate from anywhere and any location. In today's computing world, different types of new technologies have emerged. These have to support the existing computer networks all over the world.

D. Smartphones

Smartphone combines all kinds of features of a PDA with that of a mobile phone. It has a superior edge over other kinds of mobile phones. These phones have the capability to run different types of programs concurrently. These phones include high-resolution touch screens, web browsers that can access and properly display standard web pages, and high-speed data access via Wi-Fi devices and high speed cellular broadband connections. The most common mobile Operating Systems (OS) used by modern smartphones include Apple's iOS, RIM's BlackBerry OS, Nokia's Symbian, Google's Android, Samsung's Bada, Microsoft's Windows Phone, and embedded Linux distributions such as Maemo and MeeGo.

E. Cloud Computing

Cloud computing is one of the Internet-based computing which gives shared computer processing resources and data to computers and other devices on demand. It is a type of model for enabling ubiquitous, on-demand access to a shared pool of configurable computing resources, which can be rapidly released and provisioned with optimal management effort. Cloud computing and storage solutions give users and enterprises with various capabilities to store and compute their data in either privately owned, or third-party data centers that may be located far from the population–ranging in distance from across a city to state to across the world.

F. Cloud Computing Concepts

Cloud computing is the process of evolution and adoption of old technologies and paradigms. The goal of cloud computing is to permit users to take benefit from these technologies, without the need for deep knowledge about or expertise with each one of them. The cloud aims to cut costs, and helps the users focus on their core business instead of being impeded by IT obstacles. The important technology for cloud computing is virtualization. Virtualization gives the agility which required to speed up IT services, and reduces cost by increasing infrastructure usages. Autonomic computing automates the process through which the user can provision resources on-demand. By reducing user involvement, automatically speeds up the process, reduces labor costs and minimize the possibility of human errors. Users repeatedly facing difficult business problems. Cloud computing adopts with Service-oriented Architecture (SOA) that can help the user to break these problems into multiple services and solve, finally can be integrated to provide a solution. Cloud computing provides all of its resources as services, and makes use of the well-established standards and best practices gained in the domain of SOA to allow global and easy access to cloud services in a standardized way.

G. Cloud Service Models

Though service-oriented architecture comprise of "everything as a service", cloud-computing providers offer their "services" according to the peoples expectation into different models, of which the three standard models are Infrastructure as a Service (IaaS), Platform as a Service (PaaS), and Software as a Service (SaaS). These models offer increasing abstraction; they are thus often portrayed as layers in a stack: infrastructure-, platform- and software-as-a-service.

The definition of cloud computing defines the service models as follows:

- Software as a Service (SaaS): The facilities provided to the consumer is to use the provider’s applications running on a cloud infrastructure. The applications are accessible from anywhere in the world client devices through a thin client interface, such as a web browser, or a program interface. The consumer doesn’t manage or control the underlying cloud infrastructure including server, network, storage, operating systems, or even individual application capabilities, with the possible exception of limited user-specific application configuration settings. In the software as a service (SaaS) model, users gain access to any kind of application software and databases. Cloud providers manage the infrastructure and platforms that run the application software. SaaS is sometimes referred to as "on-demand software" and is usually billed on a pay-per-use basis or using a subscription fee.

- Platform as a Service (PaaS): The capability given to the consumer is to deploy onto the cloud infrastructure consumer-created or acquired software applications developed using programming languages, services, libraries, and tools which is supported by the provider. The consumer does not manage or control these cloud infrastructure including server, network, operating systems, or storage, but it has control over the deployed applications and possibly configuration settings for the application-hosting environment. PaaS vendors offer a software development environment to application developers. The provider typically develops their own toolkit and standards for development and channels for distribution and payment. A recent specialized PaaS is the Blockchain as a Service (BaaS), In that some vendors such as Microsoft Azure have already included in their PaaS offering.
- Infrastructure as a Service (IaaS): The capability provided to the consumer peoples are to provision processing, storage, networks, and other fundamental computing resources where the consumer is able to configure, deploy and run arbitrary software, which can include operating systems and applications. The consumer does not manage or control the cloud infrastructure but has control over operating systems, storage, and deployed applications; and possibly less control of select networking components. IaaS-cloud providers supply these resources in an on-demand from their large pools of equipment installed in data centers.

II. Existing System

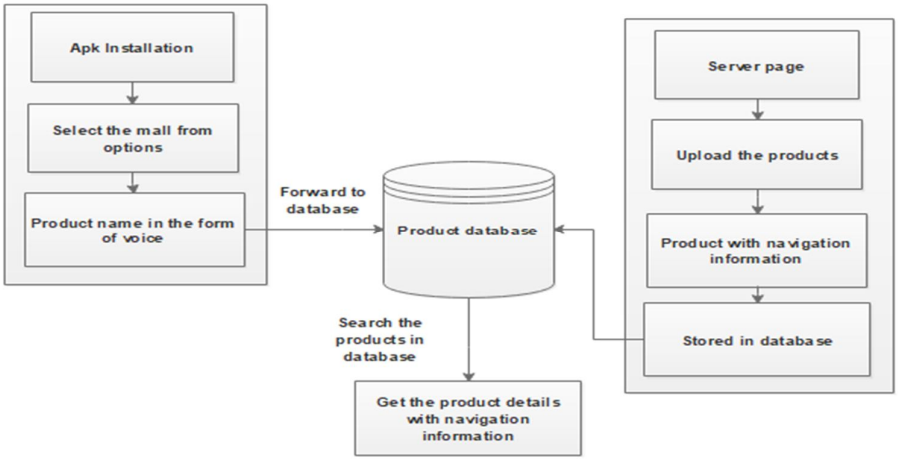
The wireless technology along with any other communication techniques has made for people to adopt e-commerce. A contemporary is to look ahead forward to a product is one that aids the comfort, efficiency and convenience in everyday life. In the real world, all the peoples face many problems in standing in queue because we have to wait for long time to complete any kind of activities. Especially, when the peoples are in shopping mall it's easy for us to take the shopping cart and shop whatever we want but when we have to take the products outside then we have to wait in queue for billing the products for long time. Hence it takes more time for billing during more crowd in the mall. As we have to use the technology of Radio frequency identification (RFID) for transmission and then photodiode used for reception. We can use RFID for collecting product details from the shopping cart. When the product details are being collected from the shopping cart, then have to use RFID to transmit product details for billing. When the shopping cart is been taken near to the billing part, then the products in shopping cart will be taken automatically to the system and printed bill will be given to consumer. RFID technology has been used for widely enabled field of construction during the last two decades. Basically, RFID can be used and facilitates the control on a wide variety of processes during different stages of the lifecycle, from its conception to its inhabitance. The main objective of this paper is to present a review of RFID applications, and pointing out the existing developments, limitations and gaps.

III. Proposed System

The application which is proposed here is used for detecting an object/product from shopping mall, based on text or voice recognition and database technology. Giving voice or text instructions about the product, which can discover using database schema and discover logic to identify the location and direction of an object/product to peoples. This can be helps to the blind peoples also. First of all developer will need to train the system regarding the object information. Android applications are packaged file system with .apk file extension which holds the .dex and resource files etc., in this application; user can pick the mall detail which is available near from options. System will gets the voice instruction from user and it converts into text, where text is passed to the database schema. This will get execute and provide navigation details. After that giving the instructions about the directions to the (blind) peoples, then it provide navigation information. System gets used in social approach where the object in place or in path everyday life and with the help of this system (blind) peoples easily travels or visit common places. And the search option is also enabled to look for the desired item. The item displayed with name, cost and navigation details.

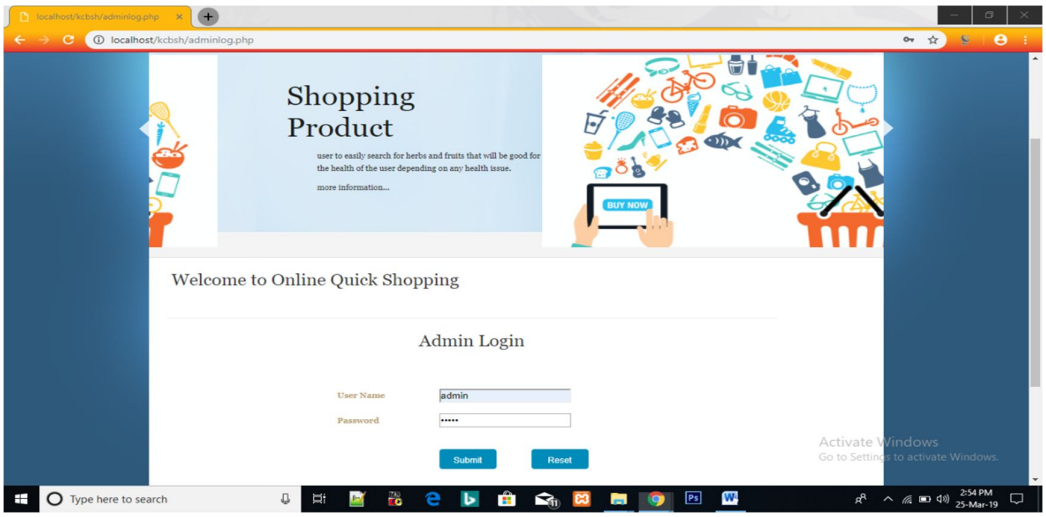
This application should be used to solve discover of nearest shopping mall details, the available product details, direction to go, and fast billing after purchase. This will act as an Intelligent system to support (blind) peoples to make their purchase faster, safer and easier. Thus the mobile, database and BOT technologies are highly support for the above activities in an enormous manner. There are different models are coming to arise, which are go through below words.

IV. MODULES DESCRIPTION



A. Admin Phase

Admin page can be constructed using PHP and MYSQL as a back end database, which can be used for administrator activities. Product details and shop details are gathered and stored in database. Product details contain the information about product name, navigation information and so on.

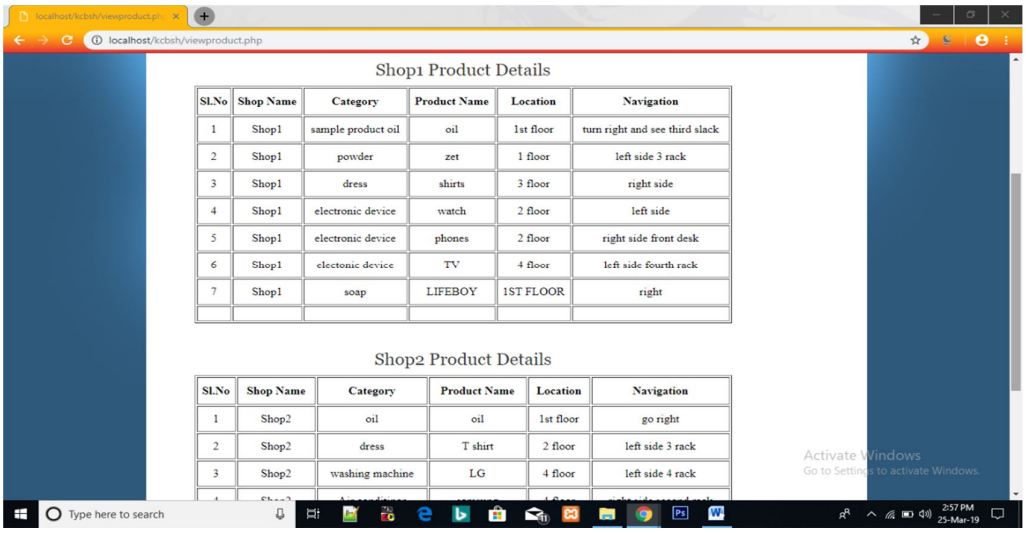


B. Mall Selection

User can use this application to select the mall from options. These system can design to have two options such as shop 1 and shop 2. Each shop has their products details individually.

C. Product Request

In this module, user gives the instruction in the form of voice, then the voice can be converted into text for processing. A voice-user interface (VUI) makes human interaction with computers possible through a voice/speech platform in order to initiate an automated service or process. A VUI is the interface to any type of speech application. Controlling a machine, by using simply talking to it, this was science fiction only a short time ago. Until recently, this area was considered to be artificial intelligence. However, with advances in technology, VUIs have become more common environment for the peoples to taking with hands-free, eyes-free interfaces provided in many situations. The product information can be converted to text and forward to database server.



D. Navigation Information

The text queries are forward to web server page. The web server then find the query logic which is available inside of request, then forward it to database server. A database server is a server which houses a database application that provides database services to other computer programs or to computers, as defined by the client–server model. Database management systems frequently provide database-server functionality, and some database management systems (DBMSs) (such as MySQL) rely exclusively on the client–server model for database access. After matching the query data, that can retrieve the information about product and forward to android side based on navigation information.

V. Conclusion

The proposed system helps the people to move independently and safely. It can be used in any public places. As it is a voice based system, the user can find the destination easily. This system is designed in less time with low cost and low power consumption. The application requires less space and it is dynamic. Compared to other existing system, this system is more efficient. In this project, it designed a navigation system for (blind) peoples in order to provide precise location information. Suggested system, as an independent program, is fairly cheap and it is possible to install onto Smart phone which will held by blind peoples also. This allows blind people to easy access the program. The developed service utilized Smart Phone in order to search route between the current locations of user to the destination and provide a voice-navigation too.

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