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Smart Art Gallery

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Abstract

Many applications require deployments of thousands of sensors per square meter with high sampling rates to observe specific phenomena of interest. One of the most important application of Bluetooth sensor technology is to exchange information between or amongst device. The information can be a text file, media file or any normal text. This project aims to design an android application for server-client interaction through wireless sensor (WS). We propose nRF51822 Bluetooth programming model with its application for the purpose of fetching details about objects in art gallery.

Keywords: Server-client interaction, Android Application, Bluetooth technology, nRF51822 Bluetooth sensor chip.

Introduction

Sensor networks are getting deployed in an increasing number of scenarios including application for environment awareness, weather stations. Example pollution monitoring. Data and information processing on constrained device poses new challenges to the accomplishment of a robust cyber physical system. Advancement in the context in the

Of wireless sensor network (WSN) and the new internet of things (IOT) technologies are pawing ways for novel application following server-client interactions.

A sensor network is controlled through a software core engine. The network is typically wireless but may also be wired, sensor networks are designed to be self configuring such that they can gather information. However due to the limited resources available on a typical sensor device and in order to achieve lower energy consumption on the nodes, it is important to reduce the amount of the exchanged data. One of the key challenges in wireless networking is the efficient utilization of the available transmission spectrum because the frequency spectrum available for wireless communication is normally limited ,frequencies must be reused within the same geographic area .The spectrum used for wireless communication typically ranges up to

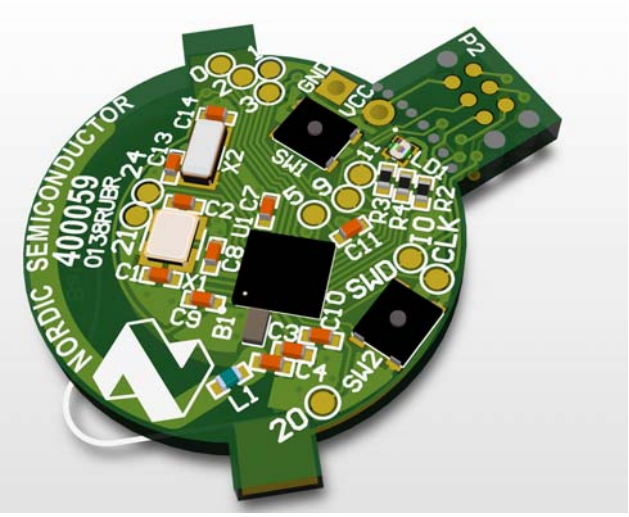

Figure: nRF51822 Bluetooth sensor chip.

Several GHz. Nowadays, the use of mobile phones, computers and the internet has become essential for most people. Advanced technology enables people to access all kinds of information about any product on their mobile phones. It is sometimes difficult for the people to fetch in information regarding the objects displayed in the gallery.

Usually BARCODE Scanner can hold any type of Information you encode but with product labels the price is not usually encoded .Every item in the super market and books in the library are labelled with different barcode .The sensor in the barcode scanner generates text once it is scanned.

With the reference of barcode technology we propose nRF51822 BLUETOOTH sensor for fetching the effective information about the objects displayed in the Art Gallery.

The nRF51822 is a powerful highly flexible multiprotocol System on Chip (SoC) ideally suited for low energy and 2.4 GHz ultra-low power wireless applications. Wireless Networks also known as wireless sensor network (WSN) have been widely used in various fields.

The nRF51822 sensor design lets you explore the full range of development possibilities for beacons using Bluetooth present technology. This paper is prepared for the effective benefit of people in various fields like Art gallery, super markets and library.

Problem Description

It's a disadvantage to dictators, who hate it because they cannot control it, they can kill the artist of course wreck the art to get their stooges by tagging their name to others Art and advertise it as their works and being common people totally unaware of this fraud happening they get into the track of the dictator kind of people, because of all this happening issues many of the artists are left behind the barriers. Due to the above consequences there are no enough art though needed.

People visiting the places of Art Galleries often find it difficult to get the detailed information about the objects and the person behind the creation .Though we have guides at every step to provide information, it's not always feasible because sometimes even they will not have the enough knowledge about it.

Purpose

A society without art is a society that will die of emotional impoverishment. A world empty of art first loses its history, then its imagination and finally its conscience. In this emerging situation it is necessary to preserve Art and Artist. In order to preserve the art and bring the artist out into the world to peoples knowledge.

Our work helps to preserve the artist work by educating the people with actual information about the real artist behind the work. This done by linking the android application and nRF51822 Bluetooth sensor chip, where people get the actual and effective information's about the art and artists.

Working Procedure

Figure: 1.shows the diagrammatic representation of Server-Client interaction. Server-client model is distributed application structure that partitions tasks or workloads between the providers of a resource or service called servers and service requesters called clients. The clients therefore initiate communication sessions with servers which await incoming requests. Often clients and servers communicate over a computer network on separate network, but both client and server may reside in the same system. A server host runs one or more server programs which share their resources with clients. A client does not share any of its resources, but requests a servers content or service function.

The nRF51822 is a SoC placed somewhere on the object with a unique ID number people need not have to go close and scan the object as like barcode. They can also fetch details easily even by staying 1 feet away from the object. The server detects the id number and display the information stored in it with the help of Android Application making use of server-client interaction concept. Figure no. 2 contain nRF51822 Bluetooth sensor chip.

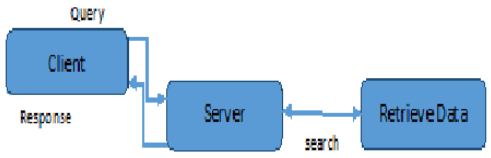

Figure: 1. Server-Client Interaction

Conclusion

Based on the observations and information gathered from different resources, we came across many disadvantages in the system of Art Gallery. One major disadvantages is that the people often do not get information of interest about the objects displayed in Art Gallery. The other worst case situation, where people use other ART to make frauds for their own benefits due to the lack of knowledge provided to people regarding objects.

This work presents an programming Android application for the benefit of people. It makes it easy for the them to know the detailed information of the object displayed in the Art Gallery making use of nRF51822 Bluetooth wireless sensor device.

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