Embedded Tourist guide Using ARM-7 and RFID Techniques.

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Abstract:

In India, many places are there, to see these places such as historical places, museum tourist come .But; problem faced by the tourist is as follow:

- To see the different places tourist come, but they don't understand many things
- Sometimes guide are not available
- When they are available, they not tell proper information, may not be correct information
- Tourist can't stay with guide for whole day.

So, we are going develop embedded tourist guide system which will provide a multimedia touring experience for visitors And then automatically retrieves the related multimedia information of the exhibit that the visitor is is gazing at. In this system problem is solved as follow:

- Tourist will understand each and every minute thing about that place
- System will always with you.
- System will always give true information as it is mark with ISO
- We can keep the system with us for whole day as mobile

As the visitor walks up to another exhibit, without any clicks or operations, the screen on the PDA will be changed to the related multimedia information of that exhibit automatically. The presented embedded guide system is implemented on palm-based personal digital assistants (PDAs), so basically, the developed museum guide system plays the role of a personal guide assistant, so as to construct the mobile learning environment in museums. Automatic visitor or tourist guide information announcement system, which it is designed mainly for privacy of visitors and reduce loud noise caused by common announcement.In an RF based application, which targeted to reach requirements and aims for particular user group or individual to listen to target within a no familiar or totally unknown area without taking any help out side. Starting from the entrance gate, application guides the user until wherever the user wants to reach and in vise versa direction.

Location-aware tour guide systems in museums: Museums are important public places the storage and restoration of human heritage. They not only record culture and historical development from the past to the present but also preserve relics from the past as the basis for future development.

Traditional museums generally provide their service which artifacts have a single content can be recognized for museum visitors. However, with the advance of modern technology, there will be further services for museums to discover for the benefit of the public. Mobile technology is certainly an area which most museums should invest and research in order to improve their services.

BLOK DIAGRAM:
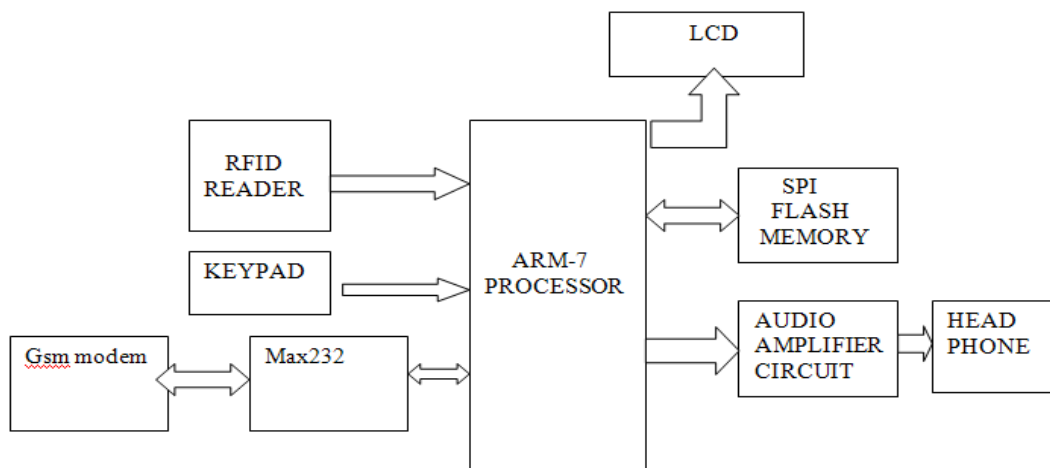
Description of Block Diagram   :-

The system will consist of ARM-7 32 bit processor. It consists of inbuilt DAC inside it. The audio files will be stored in flash memory in "WAVE" format. The processor will read these files and play them back using audio amplifier circuit. The information will be also stored in memory, which will be displayed on LCD at particular exhibit. The RFID reader will be used to detect particular exhibit. Passive RFID tags will be placed at every exhibit.

The Block diagram of Tourist Guide using RFID which consist of mainly following blocks.

1) RFID tag
2) RFID reader
3) ARM 7 Processor
4) Flash Memory
5) Audio Amplifier
6) Headphone
7) LCD
8) Keypad.

1) RFID tag:-

Consists of silicon microchip connected to antenna which is constructed of small coil of wires. Chip can store a unique serial number or other information based on tag's type of memory. Antenna transmits information from chip to reader.

Three types of tags are present :-

1) Active tags
2) Passive tags
3) Semi-active tags.

1. **Active tags**:-

    i. Contains its own power source.
    ii. Can initiate Communication.
    iii. More Expensive than passive.
    iv. Provides Read/Write Capability.
    v. Range: up to 750 feet (Depending upon battery).

2. **Passive tags**:-

    vi. Do not contain their own power source.
    vii. Cannot initiate communication with reader.
    viii. Derives power from radio waves transmitted by reader.
    ix. Range: 10-20 feet.
    x. Can operate at low, high, ultrahigh or microwave frequency.

3. Semi-active tags:-

      i.   Contain a battery but cannot initiate communication.

     ii.   Battery is to perform other operations such as to power tag's internal Circuitry.

    iii.   Battery increases storage capacity.

    iv.   Range up to 100 feet.

WORKING:

The system will consist of ARM-7 32 bit processor. It consists of inbuilt DAC inside it. The audio files will be stored in flash memory in "WAVE" format. The processor will read these files and play them back using audio amplifier circuit. The information will be also stored in memory, which will be displayed on LCD at particular exhibit. The RFID reader will be used to detect particular exhibit. Passive RFID tags will be placed at every exhibit.gsm modem is used to detect some problem occurred in modem. Or some information if center want to inform some information to person they can easily provide information to user. Also we can record the sound in various language.

Also our system will be useful to the illustrate people as they are not able to read the information which is on the display board The system will consist of ARM-7 32 bit processor. It consists of inbuilt DAC inside it. The audio files will be stored in flash memory in "WAVE" format. The processor will read these files and play them back using audio amplifier circuit. The information will be also stored in memory, which will be displayed on LCD at particular exhibit. The RFID reader will be used to detect particular exhibit. Passive RFID tags will be placed at every Radio-frequency identification (RFID) is the use of an object (typically referred to as an RFID tag) applied to or incorporated into a product, animal, or person for the purpose of identification and tracking using radio waves. Some tags can be read from several meters away and beyond the line of sight of the reader. Radio-frequency identification comprises *interrogators* (also known as *readers*), and *tags* (also known as *labels*). The LPC2141/2/4/6/8 microcontrollers are based on a 32/16 bit ARM7TDMI-S CPU with real-time emulation and embedded trace support, that combines the microcontroller with embedded high speed flash memory ranging from 32 kB to 512 kB.

Project problem definition   :-

The main objective of our project is to identify the RFID tag placed at any tourist spot and to listen to information about that place using RFID reader on headphones.

Why to Go For RFID based Tourist Guide System:

- Tourist will understand each and every minute thing about that place
- System will always be with you.
- System will always give true information as it is mark with ISO (International Organization of Standardization).
- We can keep the system with us for whole day as it is mobile.

How to use this system?

The RFID reader will be used to detect particular exhibit. Passive or Active RFID tags will be placed at every exhibit. Tag can store a unique serial number or other information based on tag's type of memory. These tags get activated and transmit unique code to the RFID reader. An RFID reader is a device that is used to interrogate an RFID tag. The reader then passes the information in digital form to a computer system or processor.

Super RFID Applied in Automatic Visitor/Tourist guide information for personnel announcement and visitor evaluation system replacing conventional guide.

Automatic visitor or tourist guide information announcement system, which it is designed mainly for privacy of visitors and reduce loud noise caused by common announcement.

In an RF based application, which targeted to reach requirements and aims for particular user group or individual to listen to target within a no familiar or totally unknown area without taking any help out side. Starting from the entrance gate, application guides the user until wherever the user wants to reach and in vise versa direction.

Plant Scanner A Handheld PDA Using RFID tags for child visitors.

This thesis project investigates the viability of using interactive handheld and RFID technology in the Indoor 4-H Children's Garden at Michigan State University. The project involves the integration of technologies such as RFID, Flash, Embedded Visual Basic and XML to develop a usable interface on a Pocket PC.

The Plant Scanner Project is designed to teach children introductory plant biology and enhance their exploration of the Indoor 4-H Children's Garden. The results from initial testing suggest that students learn more about plants by using the Plant Scanner, students use the technology with ease, students engage with the technology, the Plant Scanner works better in the outdoor garden, and that learning with the Plant Scanner is enhanced when a plant expert accompanies children

Advantages:-

1. Tourist will understand each and every minute thing about that place
2. System will always with you.
3. System will always give true information as it is mark with ISO(International Organization of Standardization).
4. We can keep the system with us for whole day as mobile.
5. System will avoid cheating done by human guide.

Applications:-

1. Electronics Exhibition – To get details of electronic appliances and their Distributors
2. Automobile exhibition – To get all details of Vehicles and their accessories vendors.
3. We can use Our system in Museums to give information about historical items.

4. It can be used in different exhibitions like

5. Auto expo   -   To know information about newly arrived cars.

6. Shopping festival   -   To know about particular consumer products.

7. We can replace human guide by our tourist guide system.

Conclusion:

In this way we have studied about our project the embedded tourist guide using ARM7 and RFID techniques which is helpful for multimedia touring experience for tourists…

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