A GPS BASED REAL-TIME TRACKING SYSTEM

Project Code: JQ2-07
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A Based GPS Medical System is to provide a tracking system monitor the health condition of patient. Both the heart beat rate and current GPS information will act the most important factor in our system that needed in order to determine the patient’s condition. By using our system, the cardiac patients are able to gain better care and services for emergency events by using the GPS technology.
**Methodology**

**Channel**

- **Satellite**
- **GPS Transmission**
- **GPS Bluetooth Receiver**
- **Patient’s Mobile Phone**
- **Doctor**
- **Internet**

**The Features of 3 Wireless Technologies:**

1. **Bluetooth**
   - Provides short range wireless communication channel.
   - Low cost and Low power
   - Popular used in Mobile
2. **Short Message Service (SMS)**
   - Most widely supported, versatile, and secure
3. **General Packet Radio Service (GPRS)**
   - Best-effort packet switched service.

**Display**

**Displaying Patient Position:**
- The J2ME in the mobile phone collects the user position information
- The information will be displayed in the text mode immediately
- The J2ME is able to create the map view by referencing the position information

**Displaying ECG graph:**
- The J2ME in the mobile phone collects the user ECG data from circuit board
- The information will be displayed in the graphic mode as the patient make a request

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- Patient’s Mobile Phone
- Doctor
- Internet
**ECG Circuit:**
- Extract the typical ECG signals between 0.5Hz and 15Hz from the user body.

**Filter Circuit:**
- Notch filter to filter the power interference

**Bluetooth LinkMatik 2.0:**
- Transmit the ECG data via the Bluetooth channel.

**Analog to Digital Converter:**
- Convert analog signal to digital signal.

**Microprocessor:**
- Collect all the digitalized ECG data and packet it.
- Sent the Packet data to the Bluetooth Module via Serial Port.

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1. The Latitude and Longitude can be captured and displayed on the user interface. The system is able to update them when the patient is moving along the street.
2. The patient can display his current position in a map view. The system is able to display the map on the user interface by referencing both the latitude and longitude that just had been captured.
3. The system is able to display the digitalized ECG signal with 200Hz sampling rate and 8 bits resolution. At the same time, the condition of the patient’s heart beat rate can be evaluated by the system.