TEMPERATURE MONITORING SYSTEM USING A ANDROID PHONE  

MWH2b-11

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Nowadays, smartphones play an important role in our life, thus our project shows that Android phone dominates almost half of the market of mobile operation system. Body Temperature can indicate the physical condition and can be easily obtained and measured, such as fever and hyperthermia. So, according these two things, we have built a temperature monitoring system.

Aim and Objectives
- The temperature can be recorded by Apps.
- Provide a user friendly interface
- Provide an accuracy measurement
- Alert message remind

Product Specifications
- Software
  - Eclipse
  - Android 6.0 Update
  - Android 2.3 API
  - Android SDK
  - Android Development Tools (ADT)

User Interface
- Multi
  - Personal info
  - Data Record
  - Temperature measuring
  - Health Condition identification

Data getting
Get the data from the I/O Board by using these three codes.

Data Transform

For Ambient Temperature

<table>
<thead>
<tr>
<th>Temperature</th>
<th>10°C</th>
<th>12°C</th>
<th>14°C</th>
<th>16°C</th>
<th>18°C</th>
<th>20°C</th>
<th>22°C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading 1</td>
<td>10</td>
<td>11</td>
<td>12</td>
<td>13</td>
<td>14</td>
<td>15</td>
<td>16</td>
</tr>
<tr>
<td>Reading 2</td>
<td>12</td>
<td>13</td>
<td>14</td>
<td>15</td>
<td>16</td>
<td>17</td>
<td>18</td>
</tr>
<tr>
<td>Reading 3</td>
<td>14</td>
<td>15</td>
<td>16</td>
<td>17</td>
<td>18</td>
<td>19</td>
<td>20</td>
</tr>
<tr>
<td>Reading 4</td>
<td>16</td>
<td>17</td>
<td>18</td>
<td>19</td>
<td>20</td>
<td>21</td>
<td>22</td>
</tr>
</tbody>
</table>

The relationship between signal from sensor and the actual temperature

Data for Object Temperature

<table>
<thead>
<tr>
<th>Temperature</th>
<th>30°C</th>
<th>32°C</th>
<th>34°C</th>
<th>36°C</th>
<th>38°C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading 1</td>
<td>31</td>
<td>32</td>
<td>33</td>
<td>34</td>
<td>35</td>
</tr>
<tr>
<td>Reading 2</td>
<td>32</td>
<td>33</td>
<td>34</td>
<td>35</td>
<td>36</td>
</tr>
<tr>
<td>Reading 3</td>
<td>33</td>
<td>34</td>
<td>35</td>
<td>36</td>
<td>37</td>
</tr>
<tr>
<td>Reading 4</td>
<td>34</td>
<td>35</td>
<td>36</td>
<td>37</td>
<td>38</td>
</tr>
</tbody>
</table>

Using these two tables to form two matrices and use the matching function to match the signal and the value inside the two matrices.

Alarm message

Send alerting

User may be hyperthermia

Analysis

Testing for the accuracy

The message context is shown above.

Compare with our device and thermometer by testing human body. The result is shown above.