Application of embedded system in Healthcare

There are a lot of advantages of “Embedded technology” as well as use of graphical user interface in medical devices.

In today’s world heart issues are one of the most common problems occurs in every second person in the world. As a result, to that, cardiology is the only medical department that takes maximum advantage of Embedded technology.

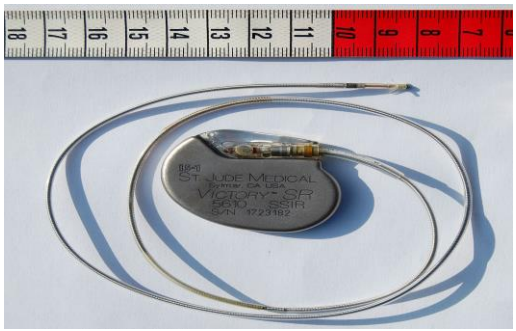
Existing devices:

1) *Pacemaker:*

- Pacemaker is one of the applications of embedded systems. A pacemaker is a small device that's placed in the chest or abdomen to help control abnormal heart rhythms. This device uses low-energy electrical pulses to prompt the heart to beat at a normal rate.

- A pacemaker consists of a battery, a computerized generator, and wires with sensors called electrodes on one end. The electrodes detect your heart's electrical activity and send data through the wires to the computer in the generator.

- If your heart rhythm is abnormal, the computer will direct the generator to send electrical pulses to your heart. The pulses then travel through the wires to reach your heart.



2) Pulse oximeter

- Pulse oximetry is a simple, relatively cheap and non-invasive technique to monitor oxygenation. It monitors the percentage of hemoglobin that is oxygen-saturated. Oxygen saturation should always be above 95%, although in those with long-standing respiratory disease or cyanotic congenital heart disease, it may be lower, corresponding to disease severity. The oxy-hemoglobin

dissociation curve becomes sharply steep below about 90%, reflecting the more rapid desaturation that occurs with diminishing oxygen partial pressure (PaO_2). On most machines the default low oxygen saturation alarm setting is 90%.

- Pulse oximetry does *not* provide information on the oxygen content of the blood nor ventilation and thus care is needed in the presence of anemia and in patients developing respiratory failure due to carbon dioxide retention, for example.