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# Assignment 1 – Software Engineering

# Glucometer – SRS functional part.

# The screen

* Ac
  + Indicate charging (on battery). When receiving signal from hardware that an AC is plugged in, show a “charging” symbol on the upper left part of the screen.
* Battery
  + Indicate current level. A horizontal battery symbol, showing the current battery level. A fully charged battery is completely full (black). A half-full will be 50 % black, 50% white. Read battery level periodically, but how?
* Test result
  + When the test reading is complete, show result in the current selected unit. Read more below.
* Date
  + Shows the current date, in the from mm/dd/yy. Read the current date periodically from the date and timer register (How often?)
* Time
  + Shows the current time in the form HH:MM (24h). Read the current time from the date and time register (How often? More often than date…)
* Progressive bar
  + When the test strip is inserted, the progressive bar appears and shows the progress of the reading, being filled the further the reading is going. A reading will take approximately 30 seconds, so the bar should take 30 seconds from being completely empty till being 100 % full.
* Unit
  + Shows the current unit. U or UL.
* Error
  + ??? What could go wrong?
* Operation modes
  + There are three modes, test mode, browse mode and USB mode, the current mode has a bold font. See below for description on the different modes.

# The Button

This is the only way to interact with the device. The device will acknowledge two types of button interaction, short press and long press. The device will behave different depending on the mode, of which there are three (Test, Usb, Browse).

# The USB

* Upon insertion of USB connector, the hardware should signal that a USB is connected. Enter USB-mode, and upload the current data from the memory to the connected PC. (What data, on what form?)

# The Beeper

Send signal to the hardware to sound the beeper. When?

# Operation modes

## Test

This mode starts whenever the test strip is inserted. A signal to start the device should be received. When this signal is received, start the display, read time and date from registers, read last used unit from memory, read battery level and display all this information on the screen.

In this mode, the progressive bar should start (see above). Do nothing for 30 seconds, then check the A/D & R register for the digital version of the reading and display the reading in the current selected unit. If received signal that the test strip has been removed, initiate shut down. If no such signal is received with in 15 seconds after the result has been displayed, initiate shut down.

## Usb

This mode starts whenever the USB is inserted and connected to a computer with the correct software. In this mode, the device will automatically transfer all the test history to the computer. (What should the display display? Is it possible to interact with the device when USB is connected? Why would you like to interact with it?)

## Browse

Browse what?