APGAR Software Flowchart.

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Start
|
Reset
|
Fetch Reset Vector
|
? Is it a Power ON Reset - No -> Goto Critical Failure (Error 1)
|
Yes
|
|
|
Label: System initialisation System Initialisation
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|
|
Check the micro-controller for errors
|
|
Initialise General Registers
|
Set APGAR score/Continuous pattern flag to Continuous pattern
|
|
Port Initialisation
|
|
Initialise PWM for sounder
|
|
Initialise LCD
|
Initialise LCD interface
|
Initialise LCD data for continuous pattern
|
Start LCD
|
|
Real Time Clock
|
Initialise One Hour timer registers for ADC conversion
|
Initialise APGAR score timer registers
|

Enable RTC interrupt

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|

Enable interrupt for the 3 key port pins.

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|

|

<u>Main Program Loop</u>

Enter here from the RTC interrupt routine

|

|

<u>Update LCD</u>

|

? Is it an APGAR score time update Yes -> Goto Update APGAR

|

No

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Update Continuous LCD pattern

|

|

<u>Check the Battery Voltage</u>

Note – if the APGAR score time is being updated, this routine will not update until the APGAR has finished

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? Has the One Hour timer reached one hour No -> Goto Label: Update interrupts

|

Yes

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Initialise the ADC

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Use the voltage reference to check the accuracy of the ADC

|

? Is the ADC accurate No -> Goto ADC Error (Error 2)

|

Yes

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? Is the battery above the Low Battery limit No -> Goto Battery Low routine

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Yes

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Label: Enable interrupts <u>Enable interrupts</u>

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|

<u>Kick Watch Dog Timer</u>

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Enter Active-Halt sleep mode