Build



Schematics

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Code

*//There are 2 ways to wake up a system, those are called Interrupts *//hardware Interrupts is based on external events where signals are sent to the GPIO *//Software Interrupts occur when we program the device like through a wake up alarm or timer

#define uS_T0_S_FACTOR 1000000
to Minutes
#define TIME_T0_SLEEP 10
sleep

#define uS_T0_S_FACTOR 1000000 *//Equation to convert milliseconds

*//Determined amount of minutes at

RTC_DATA_ATTR int bootCount = 0;

*//Keeps data of times awaken in internal RTC

3 reasons

```
switch(wakeup_reason)
{
    case ESP_SLEEP_WAKEUP_EXT0 : Serial.println("PUSHED BUTTON caused the
system to WAKEUP"); break;
    case ESP_SLEEP_WAKEUP_TIMER : Serial.println("TIMER caused the system to
WAKEUP"); break;
    default : Serial.printf("DeepSleep didn't wake up ESP32:
%d\n",wakeup_reason); break; *//Initial Boot will yield this reason
}
```

*//We made the system wake up due to the internal timer and a pushed button, the reason for the push button is that in the case we want to take a measurement at our will without having to wait for the timers.

```
void setup(){
   Serial.begin(115200);
   delay(1000);
```

pinMode(32,0UTPUT); *//Illuminates a LED when the system is awake.
For visual confirmation.

```
pinMode(33,INPUT_PULLUP);
```

*//ESP32 has pull-up resistors built on the pins, when we activate it *//it avoids the use of external resistors

*//INPUT_PULLUP keeps the signal HIGH by default

*//floating currents which can produce erroneous readings are avoided by pull up/down resistors

```
for(int i=0;i<5;i++)
{
    digitalWrite(32,HIGH);  *// This are the parameters for the LED
flashing
    delay(1000);
    digitalWrite(32,LOW);
    delay(1000);
    }
</pre>
```

++bootCount; Serial.println("Reboot count number: " + String(bootCount)); *//We want to know how many times the system has booted *//easy

way to know if there are issues internal or battery

*//issues

```
print_wakeup_reason();
```

esp_sleep_enable_ext0_wakeup(GPI0_NUM_33,0);

```
*//During Sleep only Pins connected to the RTC are operational
*//A General Purpose Input/output pin are used to perform digital readings
and output functions.
*//By default those pins have no predefined purpose.
*//The pin used has to be named after their GPIO
esp_sleep_enable_timer_wakeup(TIME_T0_SLEEP * uS_T0_S_FACTOR);
Serial.println("ESP32 is going into DeepSleep for " +
String(TIME_T0_SLEEP) +
    " Seconds");
Serial.println("Going to sleep now.....");
delay(1000);
Serial.flush();
esp_deep_sleep_start();
```

Description

Results

rst:0x1 (POWERON_RESET),boot:0x13 (SPI_FAST_FLASH_BOOT) configsip: 0, SPIWP:0xee clk_drv:0x00,q_drv:0x00,d_drv:0x00,cs0_drv:0x00,hd_drv:0x00,wp_drv:0x00 mode:DIO, clock div:1 load:0x3fff0030,len:1344 load:0x40078000,len:13516 load:0x40080400,len:3604 entry 0x400805f0 Reboot count number: 1 DeepSleep didn't wake up ESP32: 0 ESP32 is going into DeepSleep for 10 Seconds Going to sleep now..... ets Jun 8 2016 00:22:57 rst:0x5 (DEEPSLEEP_RESET),boot:0x13 (SPI_FAST_FLASH_BOOT) configsip: 0, SPIWP:0xee clk_drv:0x00,q_drv:0x00,d_drv:0x00,cs0_drv:0x00,hd_drv:0x00,wp_drv:0x00 mode:DIO, clock div:1 load:0x3fff0030,len:1344 load:0x40078000,len:13516 load:0x40080400,len:3604 entry 0x400805f0 Reboot count number: 2 TIMER caused the system to WAKEUP ESP32 is going into DeepSleep for 10 Seconds Going to sleep now..... ets Jun 8 2016 00:22:57 rst:0x5 (DEEPSLEEP_RESET),boot:0x13 (SPI_FAST_FLASH_BOOT) configsip: 0, SPIWP:0xee clk_drv:0x00,q_drv:0x00,d_drv:0x00,cs0_drv:0x00,hd_drv:0x00,wp_drv:0x00 mode:DIO, clock div:1 load:0x3fff0030,len:1344 load:0x40078000,len:13516 load:0x40080400,len:3604 entry 0x400805f0 Reboot count number: 3 PUSHED BUTTON caused the system to WAKEUP ESP32 is going into DeepSleep for 10 Seconds Going to sleep now..... ets Jun 8 2016 00:22:57

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