Module assignment list		教学模块任务列表
IAR Introduction	**Marks(分)**	**IAR简介**
Add the variable "u32Counter" to main, initialize to 0, increment it, and set a break point where it increments.	5	添加变量“u32Counter”，初始化为0，自动增加计数，并在计数增加的地方设置一个断点。
Show how many instruction cycles each loop iteration takes	5	显示循环指令周期数
Firmware System Introduction	**Marks(分)**	**固件系统简介**
Explain the main loop rule	1	解释主循环规则
BEFORE YOUR WRITE ANY CODE, draw a picture or flowchart of the assignment's designs.	5	在你动手写任何代码之前，一定要根据你的作业画出流程图
Start blinking at 1.024Hz and double the blinking rate every 2 seconds until it appears solid.	2	以1.024hz的频率开始闪烁，然后每2秒加倍闪烁直至显示为常亮
Reduce the blinking rate back down to 1.024Hz; then back up and down forever	2	降低闪烁频率到1.024Hz，然后不停重复这个过程（上一步，即先加倍闪烁，然后降低闪烁，然后再加倍，重复此过程）
Bonus: implement a 100Hz blink that continuously changes duty cycle every 100ms from 0 to 100 then 100 to 0 in 10% steps	+2	奖励分：实现100Hz频率闪烁，每100毫秒按10%步幅增减，从0到100，再从100到0。
LED Basic	**Marks(分)**	**LED基础**
BEFORE YOUR WRITE ANY CODE, draw a picture or flowchart of the assignment's designs.	5	在你动手写任何代码之前，一定要根据你的作业画出流程图
Create an interesting custom pattern of LEDs	3	创建一个自定义的LED图案。
Make one LED fade in and out. Do this by repeatedly stepping through LED_PWM_0 to LED_PWM_100 and back down to LED_PWM_0. Step every 40ms.	2	实现淡入淡出效果。通过每40毫秒反复从LED_PWM_0到LED_PWM_100然后返回到LED_PWM_0步进来实现这个过程
Button Interface	**Marks(分)**	**按钮界面**
BEFORE YOUR WRITE ANY CODE, draw a picture or flowchart of the assignment's designs.	5	在你动手写任何代码之前，一定要根据你的作业画出流程图
Create a password that is entered using BUTTON0, BUTTON1, and BUTTON2; press BUTTON3 to enter. The red LED should be on when locked. Blink red if the password is wrong, or blink green if correct until a button is pressed. The code must support any length of password up to 10 buttons and be easily changed.	5	创建一个用按键0到按键2的密码输入序列然后按键3为确认输入。当锁住时红灯亮，当密码输入错误时红灯闪烁，输入正确时绿灯闪烁。代码必须支持由10个按键决定的任何长度的密码并且便于修改。
If BUTTON3 is held when the board starts, enter a state where the user can create their own password. Blink the red and green LED during this state. When finished, go to the password entry mode.	+5	当板子启动时如果按键3持续按下，进入用户密码创建界面，并闪烁红灯和绿灯。当完成后，进入密码输入状态。
LED Advanced	**Marks(分)**	**LED高级**
BEFORE YOUR WRITE ANY CODE, draw a picture or flowchart of the assignment's designs.	5	在你动手写任何代码之前，一定要根据你的作业画出流程图
Recreate the "icicle effect" along the 8 LEDs. The leading LED is 100% bright, and the trailing ones are 70%, 50%, 30% and 10%.	5	重建8LED的“icicle”效果，第一个LED亮度100%，后面依次为70%，50%，30%和10%。
Bonus: each change should happen faster than the last since the drop should "speed up" as it falls.	+2	奖励分：实现滴落速度越往后越快的效果。
Debug Interface	**Marks(分)**	**调试界面**
BEFORE YOUR WRITE ANY CODE, draw a picture or flowchart of the assignment's designs.	5	在你动手写任何代码之前，一定要根据你的作业画出流程图
Write code to detect every time your name is typed on the input and count how many times it's typed. You do not need to press enter - just monitor the input buffer. Make sure the code works when you repeat letters in your name.	3	编写代码检测每次输入自己的姓名，并统计输入次数。你无须按enter键，只用监控输入缓存。确保代码在你名字中的字母重复出现时也同样正常工作。
Each time your name is detected, print the current count surrounded by a box of * characters. Ensure the box changes size with the number of digits. ***** *102* *****	2	每当你的名字被检测到，按下列格式输出次数，并且*号框大小随着数位增加自动调整。 ***** *xxx* *****
Buzzer Basic Operation	**Marks(分)**	**蜂鸣器基本操作**
BEFORE YOUR WRITE ANY CODE, draw a picture or flowchart of the assignment's designs.	5	在你动手写任何代码之前，一定要根据你的作业画出流程图
Add a full octave (12 notes including sharps and flats) by using keyboard keys to enter notes through the debug interface. You may select the keys to use.	5	添加一个全八度音阶（12个音符包括变音符号），使用键盘通过调试界面输入。
Bonus: use BUTTON0 through BUTTON3 to select the current octave from C2 to C5	+2	使用按键0到3从C2到C5选择当前音阶。

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Buzzer Advanced Operation	**Marks(分)**	**蜂鸣器高级操作**
BEFORE YOUR WRITE ANY CODE, draw a picture or flowchart of the assignment's designs.	5	在你动手写任何代码之前，一定要根据你的作业画出流程图
Implement your own song including customizing the LEDs that are displayed -- be creative but do something that makes visual sense.	3	定制自己的歌曲及LED显示效果 -- 尽量发挥创意作出特别的视觉效果。
Print the frequency and duration of each note that's played on the debug port.	2	输出通过调试端口演奏出的每个音符的频率及持续时间。
Character LCD Basic Operation	**Marks(分)**	**液晶屏字符基本操作**
BEFORE YOUR WRITE ANY CODE, draw a picture or flowchart of the assignment's designs.	5	在你动手写任何代码之前，一定要根据你的作业画出流程图
Design and code some type of animation of your name.	5	设计并编程显示自己名字字符的动画效果。
Bonus: add LED, Button and Sound I/O to your animation.	+2	奖励分：为动画增加LED，按钮和声音效果。
Bonus: Display typed characters on the LCD from the debug port. A maximum of 255 characters are allowed. If more than 40 characters are typed, the display should scroll up. When the user presses enter, output ALL of the typed characters to the debug port.	+5	奖励分：通过调试端口在液晶屏上显示输入的字符，最大255字符。如果输入字符数大于40，则滚屏显示。当用户按下确认键，在调试端口输出所有字符。
ANT Introduction	**Marks(分)**	**ANT简介**
Set the Device Type to the last two digits of your phone number and show that the channel is connected in ANTWare.	4	将设备类型设置为自己电话号码的最后两位，并显示频道与ANTWare连接。
Write out the broadcast message being sent by your device and identify all of the data fields.	2	写出通过自己的设备发送的广播信息并识别出所有数据字段。
Change the radio frequency to 2440MHz and show that the channel connects to your device using ANTWare.	4	将无线电频率改为2440MHz，并显示频道通过ANTWare与自己的设备连接。