

ZHENG Hongyi 13104036d COMP3438 Assignment 2

Configuration of Makefile

```
Applications Places System
hal@ubuntu:/tiny6410/linux-3.0.8/drivers/char
File Edit View Terminal Help
obj-$(CONFIG_PC8736x_GPIO) += pc8736x_gpio.o
obj-$(CONFIG_NSC_GPIO) += nsc_gpio.o
obj-$(CONFIG_GPIO_TB0219) += tb0219.o
obj-$(CONFIG_TLCLCLOCK) += tlclk.o

obj-$(CONFIG_MWAVE) += mwave/
obj-$(CONFIG_AGP) += agp/
obj-$(CONFIG_PCMCIA) += pcmcia/
obj-$(CONFIG_IPMI_HANDLER) += ipmi/

obj-$(CONFIG_HANGCHECK_TIMER) += hangcheck-timer.o
obj-$(CONFIG_TCG_TPM) += tpm/

obj-$(CONFIG_DCC_TTY) += dcc_tty.o
obj-$(CONFIG_PS3_FLASH) += ps3flash.o
obj-$(CONFIG_RAMOOPS) += ramoops.o

obj-$(CONFIG_JS_RTC) += js-rtc.o
js-rtc-y = rtc.o

obj-$(CONFIG_S3C_MEM) += s3c_mem.o

obj-$(CONFIG_MINI210_LEDS) += mini210_leds.o
obj-$(CONFIG_MINI210_HELLO_MODULE) += mini210_hello_module.o
obj-$(CONFIG_MINI210_BUTTONS) += mini210_buttons.o
obj-$(CONFIG_MINI210_BUZZER) += mini210_pwm.o
obj-$(CONFIG_MINI210_ADC) += mini210_adc.o
obj-$(CONFIG_MINI210_BACKLIGHT) += mini210_backlight.o

#obj-$(CONFIG_COMP309_LAB3) += comp309_lab3.o
#obj-$(CONFIG_COMP309_LAB4) += comp309_lab4.o
#obj-$(CONFIG_COMP309_LAB5) += comp309_lab5.o
#obj-$(CONFIG_COMP309_LAB6) += comp309_lab6.o
obj-$(CONFIG_BUZZER) += buzzer-driver.o
obj-$(CONFIG_BUTTON) += button-driver.o
obj-$(CONFIG_LED) += led-driver.o
```

Configuration of Kconfig

```
Applications Places System
hal@ubuntu:/tiny6410/linux-3.0.8/drivers/char
File Edit View Terminal Help
default n
depends on MSM_SMD
help
    Enables userspace clients to read and write to some packet SMD
    ports via device interface for MSM chipset.

#config COMP309_LAB3
#
#   tristate "COMP309 LAB3"
#   depends on CPU_SSPV210

#config COMP309_LAB4
#
#   tristate "COMP309 LAB4"
#   depends on CPU_SSPV210

#config COMP309_LAB5
#
#   tristate "COMP309 LAB5"
#   depends on CPU_SSPV210

#config COMP309_LAB6
#
#   tristate "COMP309 LAB6"
#   depends on CPU_SSPV210

config BUZZER
    tristate "BUZZER"
    depends on CPU_SSPV210

config BUTTON
    tristate "BUTTON"
    depends on CPU_SSPV210

endmenu
```

Make

```
hai@ubuntu:/tiny6410/linux-3.0.8
File Edit View Terminal Help
hai@ubuntu:/tiny6410/linux-3.0.8$ make
scripts/kconfig/conf --silentoldconfig Kconfig
#
# configuration written to .config
#
CHK include/linux/version.h
CHK include/generated/utsrelease.h
make[1]: 'include/generated/mach-types.h' is up to date.
CALL scripts/checksyscalls.sh
CHK include/generated/compile.h
CC [M] drivers/char/buzzer-driver.o
drivers/char/buzzer-driver.c: In function 'hongyi_change hz':
drivers/char/buzzer-driver.c:139:2: warning: ISO C90 forbids mixed declarations and code
Kernel: arch/arm/boot/Image is ready
SHIPPED arch/arm/boot/compressed/lib1funcs.S
AS arch/arm/boot/compressed/lib1funcs.o
LD arch/arm/boot/compressed/vmlinux
OBJCOPY arch/arm/boot/zImage
Kernel: arch/arm/boot/zImage is ready
Building modules, stage 2.
MODPOST 7 modules
LD [M] drivers/char/buzzer-driver.ko
hai@ubuntu:/tiny6410/linux-3.0.8$
```

Mount/cd

```
COM3 - PuTTY
[root@POLYU_COMP309 linux-3.0.8]# mount -t nfs -o nolock,rsize=4096,wsiz=4096
192.168.1.145:/tiny6410 /mnt/nfs
mount: mounting 192.168.1.145:/tiny6410 on /mnt/nfs failed: Device or resource b
usy
[root@POLYU_COMP309 linux-3.0.8]# cd /mnt/nfs/linux-3.0.8/
[root@POLYU_COMP309 linux-3.0.8]#
```

Insmod/mknod

[illegible]

Compile application

```
Browse and run installed applications
hal@ubuntu:/tiny6410/linux-3.0.8/drivers/char/button-led$ arm-linux-gcc applications.c |
current_value = gpio_get_value(KEY1);
if(KEY1 == GPIO_PIN_LOW) {
    key_values[i] = "A";

    gpio_set_irq_type(
}

finish:
ex_press = ~ current_value;
wake_up(button_wait);

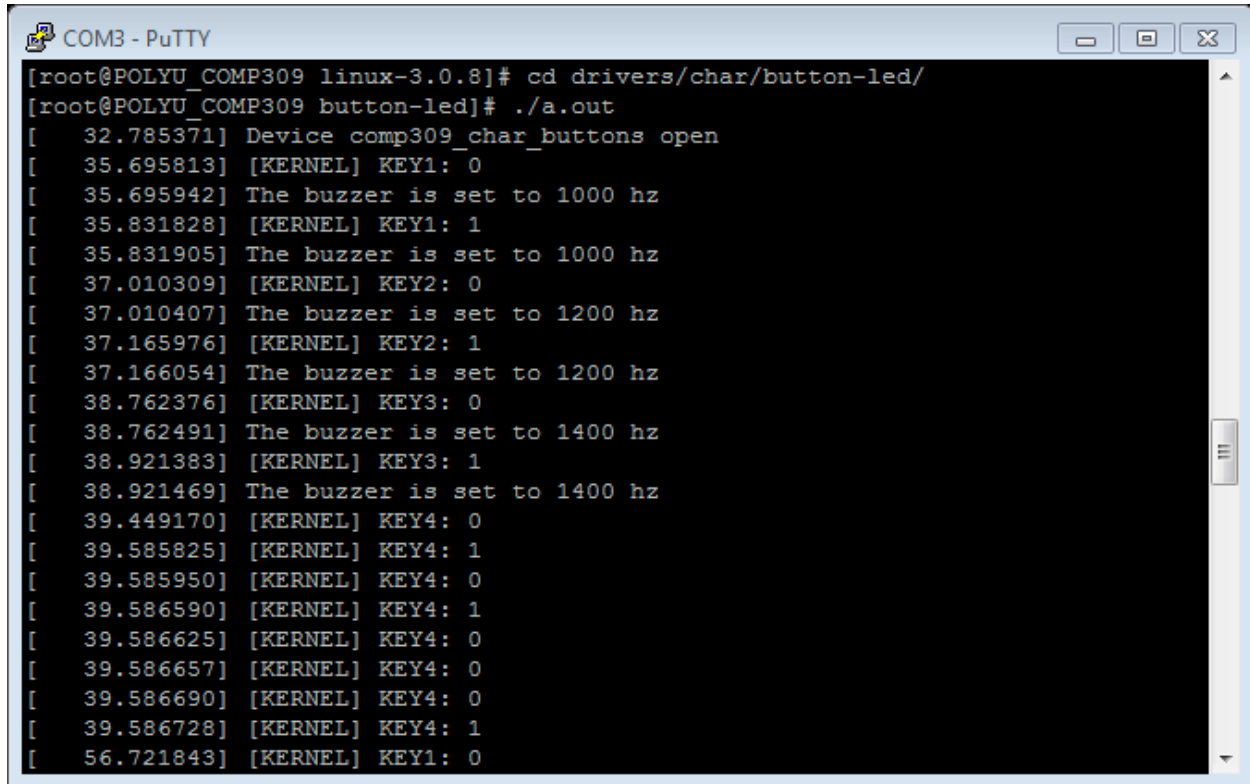
return IRQ_HANDLED;
}

static int __init devedm_char_button_open(struct inode *inode, struct file *file)
{
    int irq;
    int ret = -1;

    irq = gpio_to_irq(KEY1);
    ret = request_irq(irq, &devedm_char_button_interrupt, IRQ_TYPE_EDGE_BOTH, "key", &irq);
    if(ret != 0)
    {
        printk(KERN_ERR "failed to get irq\n");
    }

    irq = gpio_to_irq(KEY2);
    ret = request_irq(irq, &devedm_char_button_interrupt, IRQ_TYPE_EDGE_BOTH, "key", &irq);
    if(ret != 0)
```

run



```
[root@POLYU_COMP309 linux-3.0.8]# cd drivers/char/button-led/
[root@POLYU_COMP309 button-led]# ./a.out
[ 32.785371] Device comp309_char_buttons open
[ 35.695813] [KERNEL] KEY1: 0
[ 35.695942] The buzzer is set to 1000 hz
[ 35.831828] [KERNEL] KEY1: 1
[ 35.831905] The buzzer is set to 1000 hz
[ 37.010309] [KERNEL] KEY2: 0
[ 37.010407] The buzzer is set to 1200 hz
[ 37.165976] [KERNEL] KEY2: 1
[ 37.166054] The buzzer is set to 1200 hz
[ 38.762376] [KERNEL] KEY3: 0
[ 38.762491] The buzzer is set to 1400 hz
[ 38.921383] [KERNEL] KEY3: 1
[ 38.921469] The buzzer is set to 1400 hz
[ 39.449170] [KERNEL] KEY4: 0
[ 39.585825] [KERNEL] KEY4: 1
[ 39.585950] [KERNEL] KEY4: 0
[ 39.586590] [KERNEL] KEY4: 1
[ 39.586625] [KERNEL] KEY4: 0
[ 39.586657] [KERNEL] KEY4: 0
[ 39.586690] [KERNEL] KEY4: 0
[ 39.586728] [KERNEL] KEY4: 1
[ 56.721843] [KERNEL] KEY1: 0
```