A. Information Gathering
1.
    A) Bugs:
        • Not possible to enable signal driven I/O by specifying O_ASYNC when calling open().
        • Must check two different error codes EISDIR and ENOENT when determining whether the kernel supports O_TMPFILE functionality.
        • When both O_CREAT and O_DIRECTORY are specified in flags and the file specified by pathname does not exist, open() will create a regular file.

    B) Required files:
        • sys/types.h
        • sys/stat.h
        • fcntl.h

    C) Related system calls:
        • chmod(2)
        • chown(2)
        • close(2)
    D) Close()
        • No bugs listed.
        • Required files: unistd.h

2.   Searched against kernel 5.0.7

    A) "usb_device" struct is defined in the linux/usb.h file on line 633.
        ○ LXR hits on this line in usb.h "struct usb_device {...}"
    B) The first five members of the structure are int devnum, char devpath[16], u32 route, enum usb_device_state state, and enum usb_device_speed speed.
    C) The type is declared for the 5th member of the struct in the linux/usb/ch9.h file.

    D)
    enum usb_device_speed {
        USB_SPEED_UNKNOWN = 0,   /* enumerating */
        USB_SPEED_LOW, USB_SPEED_FULL,   /* usb 1.1 */
        USB_SPEED_HIGH,   /* usb 2.0 */
        USB_SPEED_WIRELESS,   /* wireless (usb 2.5) */
        USB_SPEED_SUPER,   /* usb 3.0 */
        USB_SPEED_SUPER_PLUS,   /* usb 3.1 */
        };

3. Source code for temp_conversion.

```c
#include <stdio.h>
#define MAX_lim

float temp_conversion(int);

int main()
{
        int myInt;
        float celsius;

        printf("Enter a temp in fahrenheit: ");
        scanf("%d", &myInt);
        printf("\n");
        printf("You entered: %d \n",myInt);

        celsius = temp_conversion(myInt);
        printf("Value in celsius: %f \n", celsius);

        return 0;
}

float temp_conversion(int value){

        float celsius;
        celsius = (value - 32) / 1.800;

        return celsius;
}
```

4. Execution of temp. conversion program.

```
Script started on 2019-04-09 15:29:56-0700
gcc -g -o temp_take temperature_conv.c
0;pproctor@pproctor-MacBook: ~/Documents/ECE373/hw01;
32mpproctor@pproctor-MacBook~/Documents/ECE373/hw[00m$ ./temp_take
Enter a temp in fahrenheit: 0

You entered: 0
Value in celsius: -17.777779
]0;pproctor@pproctor-MacBook: ~/Documents/ECE373/hw01;
32mpproctor@pproctor-MacBook~/Documents/ECE373/hw[00m$ ./temp_take
Enter a temp in fahrenheit: 32

You entered: 32
Value in celsius: 0.000000
]0;pproctor@pproctor-MacBook: ~/Documents/ECE373/hw01;
32mpproctor@pproctor-MacBook~/Documents/ECE373/hw[00m$ exit

Script done on 2019-04-09 15:31:00-0700
```

5. Hello.c module code for section D.

```c
#include <linux/init.h>
#include <linux/module.h>

MODULE_LICENSE("Dual BSD/GPL");

static int __init hello_init(void)
{
        printk(KERN_INFO "Hello, kernel\n");
        return 0;
}

static void __exit hello_exit(void)
{
        printk(KERN_INFO "Goodbye, kernel\n");
        return 0;
}

module_init(hello_init);
module_exit(hello_exit);
```

6. Log file printout for section D.

```
Apr 10 16:07:09 pproctor-MacBook /usr/lib/gdm3/gdm-x-session[1310]: (EE)
event11 - bcm5974: libinput bug: invalid tap event TAP_EVENT_PALM in state TAP_STATE_TAPPED
Apr 10 16:07:15 pproctor-MacBook systemd-resolved[643]: Server returned
error NXDOMAIN, mitigating potential DNS violation DVE-2018-0001, retrying transaction with reduced feature level UDP.
Apr 10 16:07:15 pproctor-MacBook systemd-resolved[643]: Server returned error
NXDOMAIN, mitigating potential DNS violation DVE-2018-0001, retrying transaction with reduced feature level UDP.
Apr 10 16:09:03 pproctor-MacBook pulseaudio[1051]: W: [pulseaudio]
sink-input.c: Failed to create sink input: sink is suspended.
Apr 10 16:10:40 pproctor-MacBook kernel: [ 9617.458732] Hello, kernel
Apr 10 16:10:42 pproctor-MacBook kernel: [ 9619.673863] Goodbye, kernel
```

7. Shell Practice Session

```
Script started on 2019-04-09 14:16:55-0700
pproctor@pproctor-MacBook: mpproctor@pproctor-MacBook pwd
/home/pproctor
pproctor@pproctor-MacBook: mpproctor@pproctor-MacBook ls - l [K [Kl
total 52
drwxr-xr-x  2 pproctor pproctor 4096 Apr  5 18:14 Desktop
drwxr-xr-x  3 pproctor pproctor 4096 Apr  7 14:35 Documents
drwxr-xr-x  2 pproctor pproctor 4096 Apr  5 18:14 Downloads
-rw-r--r--  1 pproctor pproctor 8980 Apr  5 17:54 examples.desktop
drwxr-xr-x  2 pproctor pproctor 4096 Apr  5 18:14 Music
drwxr-xr-x  2 pproctor pproctor 4096 Apr  5 18:14 Pictures
drwxr-xr-x  2 pproctor pproctor 4096 Apr  5 18:14 Public
drwxr-xr-x  3 pproctor pproctor 4096 Apr  5 19:06 snap
drwxr-xr-x  2 pproctor pproctor 4096 Apr  5 18:14 Templates
-rw-r--r--  1 pproctor pproctor    0 Apr  9 14:16 typescript
drwxr-xr-x  2 pproctor pproctor 4096 Apr  5 18:14 Videos
drwxr-xr-x 11 pproctor pproctor 4096 Apr  7 10:09 vim
pproctor@pproctor-MacBook: mpproctor@pproctor-MacBook mkdir ECE373
pproctor@pproctor-MacBook: mpproctor@pproctor-MacBook cd ECE373
pproctor@pproctor-MacBook: ~/ECE373[pproctor@pproctor-MacBook[~/ECE373[00m$ exit

Script done on 2019-04-09 14:17:28-0700
```