Assignment K – Kernel

In this assignment, you will design and build two microseconds response drivers as RPi kernel modules. You may want to follow the following approach.

Make sure the kernel sources and headers are installed on RPi host and located in

```
/lib/modules/`uname -r`/build
```

We will help you with this task. We have also posted two example driver codes for your work.

```
blink_km.c  dht11.c
```

Use these drivers as examples to develop your own drivers. This assignment has now two parts.

Part 1 – *Blinking LED*: Your driver should be based on the code you developed for the blinking LED assignment, which at that time was not written as a kernel module. Note, you cannot use application-space libraries in your driver code.

Once you have developed the driver, you should compile the code using a makefile similar to the one posted for you.

After compilation and debugging, you should produce the driver module which should insert in the kernel using kernel utility commands.

```
insmod blink_km.ko
```

Test the new driver that it works on the same setup you used during the blink LED assignment.

Part 2 – *Temperature Humidity Sensor*: For this part of the assignment you should follow the instructions and the attachments posted separately.

For both assignment parts, you should compare the kernel module method against the previous method in terms of response time, results and accuracy.