Advances in Operating Systems Design

Programming Assignment -1, Part - A

Team Details:
1. Sai Saketh Aluru - 16CS30030
2. G Chandan Ritvik - 16CS30010

Part A-1: Building kernel without including any Bluetooth Support

We can remove the bluetooth support in the kernel by unselecting the "Bluetooth subsystem support" under Networking Support options in menuconfig.
The changes observed upon doing this are:

1. In the .config file generated, we observe that CONFIG_BT is not set and no bluetooth drivers or modules are configured for installation.
2. Checking for the status of bluetooth module using the command $lsmod | grep bluetooth returns nothing, indicating no bluetooth module is present.
3. /lib/modules/5.2.6/kernel/drivers/ doesn't have a bluetooth folder indicating no drivers for bluetooth are installed.

Part A-2: Building kernel with Reno as the default TCP congestion control algorithm

We can change the default TCP congestion control algorithm by selecting the choice in the options provided under Networking Support -> Networking options -> TCP/IP networking -> TCP: advanced congestion control -> Default TCP congestion control.
The changes observed upon changing the default congestion control algorithm from cubic to Reno are:

1. In the .config file generated, we can observe the following lines -
   # CONFIG_DEFAULT_CUBIC is not set
   CONFIG_DEFAULT_RENO=y
   CONFIG_DEFAULT_TCP_CONG="reno"

   Indicating that cubic is not selected as the default and that Reno algorithm is chosen as the default congestion control algorithm.
2. We can check the current congestion control algorithm in terminal with the command $sysctl net.ipv4.tcp_congestion_control which returns net.ipv4.tcp_congestion_control = reno, indicating that Reno is the current default running algorithm for TCP congestion control.