Chapter 4D: BLE Centrals

Time 2 ½ Hours

This chapter expands your basic knowledge of BLE Peripherals by introducing more Attribute Procedures, GATT Database Features, Security, WICED Configuration Files, Advertising Packet Features, Service Discovery, …

4B.1 Central Roles 2

4B.2 WICED Scanning 2

4B.3 Attribute Protocol 2

4B.3.1 Read 2

4B.3.2 Write 2

4B.3.3 Notify 2

4B.3.4 Indicate 2

4B.3.5 Find Information 2

4B.3.6 Find by Type Value 2

4B.3.7 Read by Group Type 2

4B.4 Service Discovery 2

4B.5 Running a GATT Server 2

4B.6 Exercises 2

Exercise 4B.1 Make an Observer 2

Exercise 4B.2 Add a filter to show only your device 2

Exercise 4B.3 Update (2) to connect to your device & turn on/off the LED 2

Exercise 4B.4 Add keys to turn on CCCD 2

Exercise 4B.5 Make your project do service discovery 2

Exercise 4B.6 Make a central that is a “TV” running a GATT DB 2

Exercise 4B.7 Make a remote control peripheral to talk to the TV 2

Exercise 4B.8 Make your TV Handle multiple remote controls 2

Exercise 4B.9 Update your peripheral remote control to do service discovery 2

Exercise 4B.10 Run the advertising scanner 2

# Central Roles

# WICED Scanning

# Attribute Protocol

## Read

## Write

## Notify

## Indicate

## Find Information

Input – starting handle and ending handle

Output – handles, types

## Find by Type Value

Input – starting handle, ending handle, Attribute type & Attribute value

Output – handles, values

* Discover all of the characteristics of a service

## Read by Group Type

Input – starting, ending handle, group type (Service, Char, etc)

Output – handle, end group handle, value

# Service Discovery

# Running a GATT Server

# Exercises

* 1. Make an Observer
  2. Add a filter to show only your device
  3. Update (2) to connect to your device & turn on/off the LED
  4. Add keys to turn on CCCD
  5. Make your project do service discovery
  6. Make a central that is a “TV” running a GATT DB
  7. Make a remote control peripheral to talk to the TV
  8. Make your TV Handle multiple remote controls
  9. Update your peripheral remote control to do service discovery
  10. Run the advertising scanner