Required: android.bluetooth package

[Android.bluetooth.le documentation](https://developer.android.com/reference/android/bluetooth/le/package-summary)

low power requirements? --> BLE; arduino and Seeed supports both BLE and classic

bluetooh\_admin to start device discoverty or manipulate bluetooth settings

Find: new parings, validate connection, transfer data securely,

BLE basics

1. To setup comms b/n BLE devices, [declare permissions](https://developer.android.com/guide/topics/connectivity/bluetooth/permissions) in manifest file
   1. Looking for B devices 🡪 bluetooth\_scan perms
   2. Makes current device discoverable to other B devices 🡪 bluetooth\_advertise
   3. If comms w/ already-paired B devices 🡪 bluetooth\_connect
   4. These are runtime perms; must request user approval in app before B communication
   5. Can add android:usesPermissionFlags to Bluetooth\_scan and set value to neverForLocation (if physical location is never used)
      1. If location isn’t needed, remove ACCESS\_FINE\_LOCATION perms on app manifest
2. Access the Bluetooth adapter and [determine if Bluetooth is available on device](https://developer.android.com/guide/topics/connectivity/bluetooth/setup)
   1. After pems are in place, use Bluetooth adapter (reps the device’s own B adapter)
      1. Only on B adapter per system; call getDefaultAdapter() to get
      2. Check whether B is enabled, if it’s not startActivityForResult(); prompts a dialog to appear requesting B to be enabled
3. If available, [scan for nearby BLE devices](https://developer.android.com/guide/topics/connectivity/bluetooth/find-ble-devices)
4. Once device is found, [connect to the GATT server](https://developer.android.com/guide/topics/connectivity/bluetooth/connect-gatt-server) on BLE device
5. After connection made, [data can be transferred](https://developer.android.com/guide/topics/connectivity/bluetooth/transfer-ble-data) w/ connected device

ATT has UUIDs ??