IoT with MIT App Inventor

Fundamental

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Python Program - LED control through bluetooth

`$ hciconfig | grep "BD Address"`

MAC address: A media access control address (MAC address) is a unique identifier assigned to a network interface controller (NIC) for use as a network address in communications within a network segment. This use is common in most IEEE 802 networking technologies, including Ethernet, Wi-Fi, and Bluetooth.

Python Program - LED control through bluetooth

```python
Decode MAC to ASCII (utf-8 in python 3)
#--------------------------------------
                   #
#       decode Pi signal/data
                   #
#--------------------------------------


            try:
                while True:
                    data = client.recv(1024)            # Recieve data bytes
                    if data.decode('utf-8') == '1':        # 1 received
                        GPIO.output(LED, 1)            # LED ON
                    elif data.decode('utf-8') == '0':     # 0 received
                        GPIO.output(LED, 0)            # LED OFF

            except KeyboardInterrupt:                 # Keyboard interrupt
                client.close()
                s.close()
```

Python Program - LED control through bluetooth

```python
#-------------------------------------
#
#      decode Pi signal/data
#
#-------------------------------------

try:
    while True:
        data = client.recv(1024)          # Recieve data bytes
        if data.decode('utf-8') == '1':   # 1 received
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            GPIO.output(LED, 0)           # LED OFF

except KeyboardInterrupt:                 # Keyboard interrupt
    client.close()
    s.close()
```

```python
#
# start of the main program loop, read commands from
# the android mobile phone, decode them and control LED
#

Port = 1
MAC = 'DC:A6:32:8E:0F:3E'
s = socket.socket(socket.AF_BLUETOOTH,socket.SOCK_STREAM,socket.BTPROTO_RFCOMM)
s.bind((MAC, Port))
s.listen(1)
client, addr = s.accept()
```

Python Program - LED control through bluetooth

```python
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    while True:

        data = client.recv(1024)          # Recieve data bytes

        if data.decode('utf-8') == '1':      # 1 received

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except KeyboardInterrupt:                    # Keyboard interrupt

    client.close()

    s.close()
```
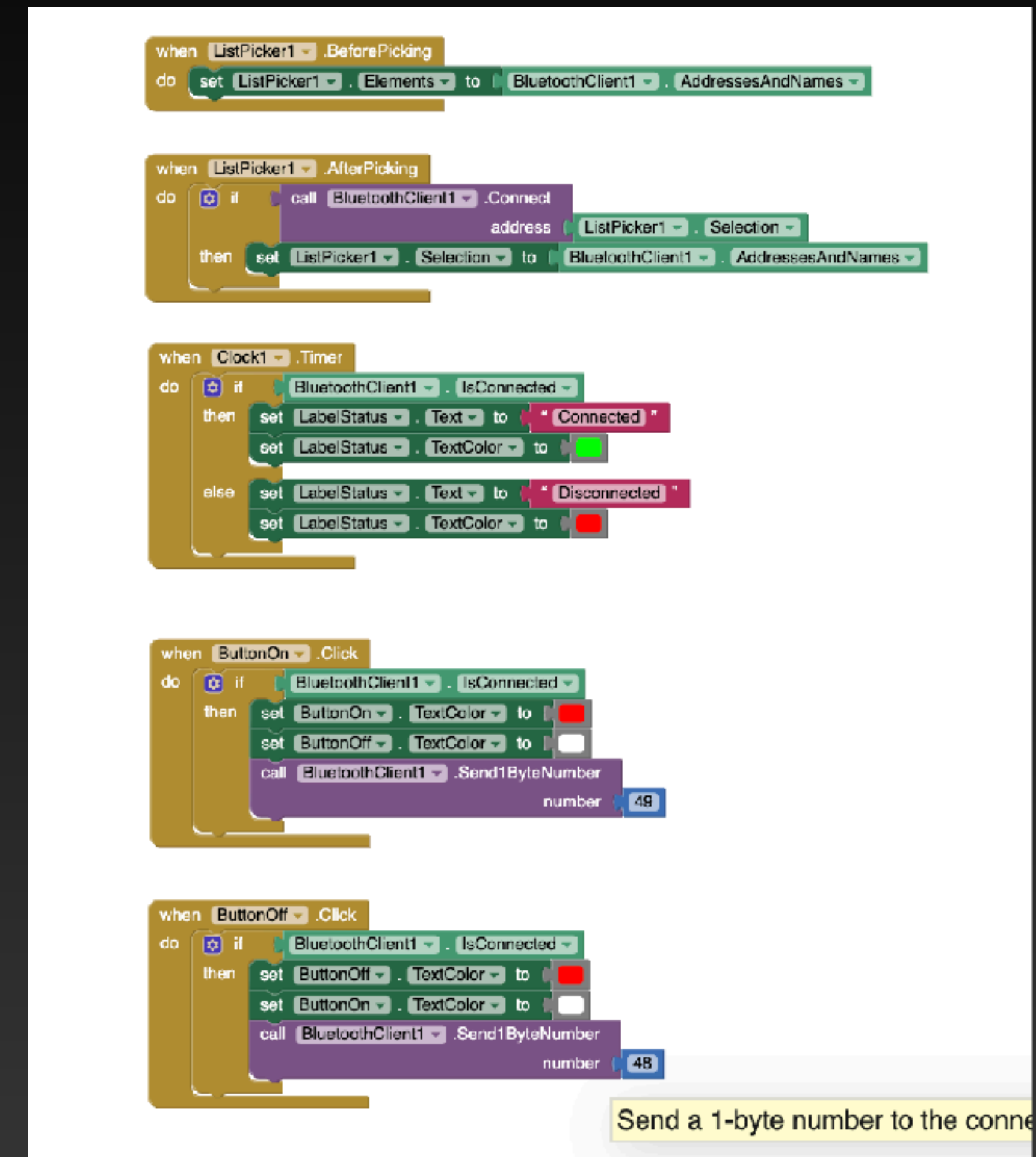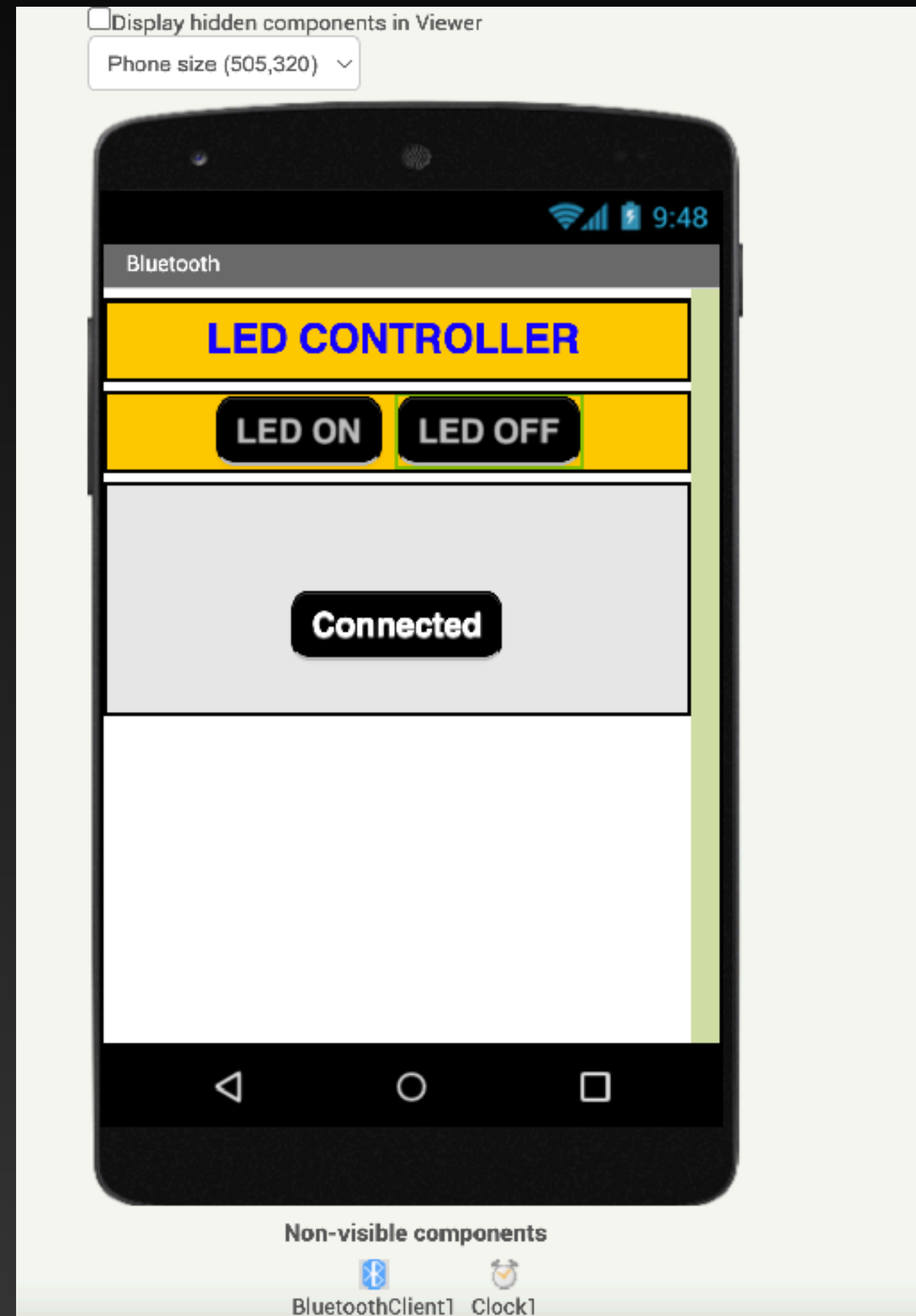
LED Control App - Bluetooth

Pair the RaspberryPi on your Android phone

LED control through bluetooth

Python Program - LED control through bluetooth

Home project - Develop app to control your LED ON/OFF through Voice