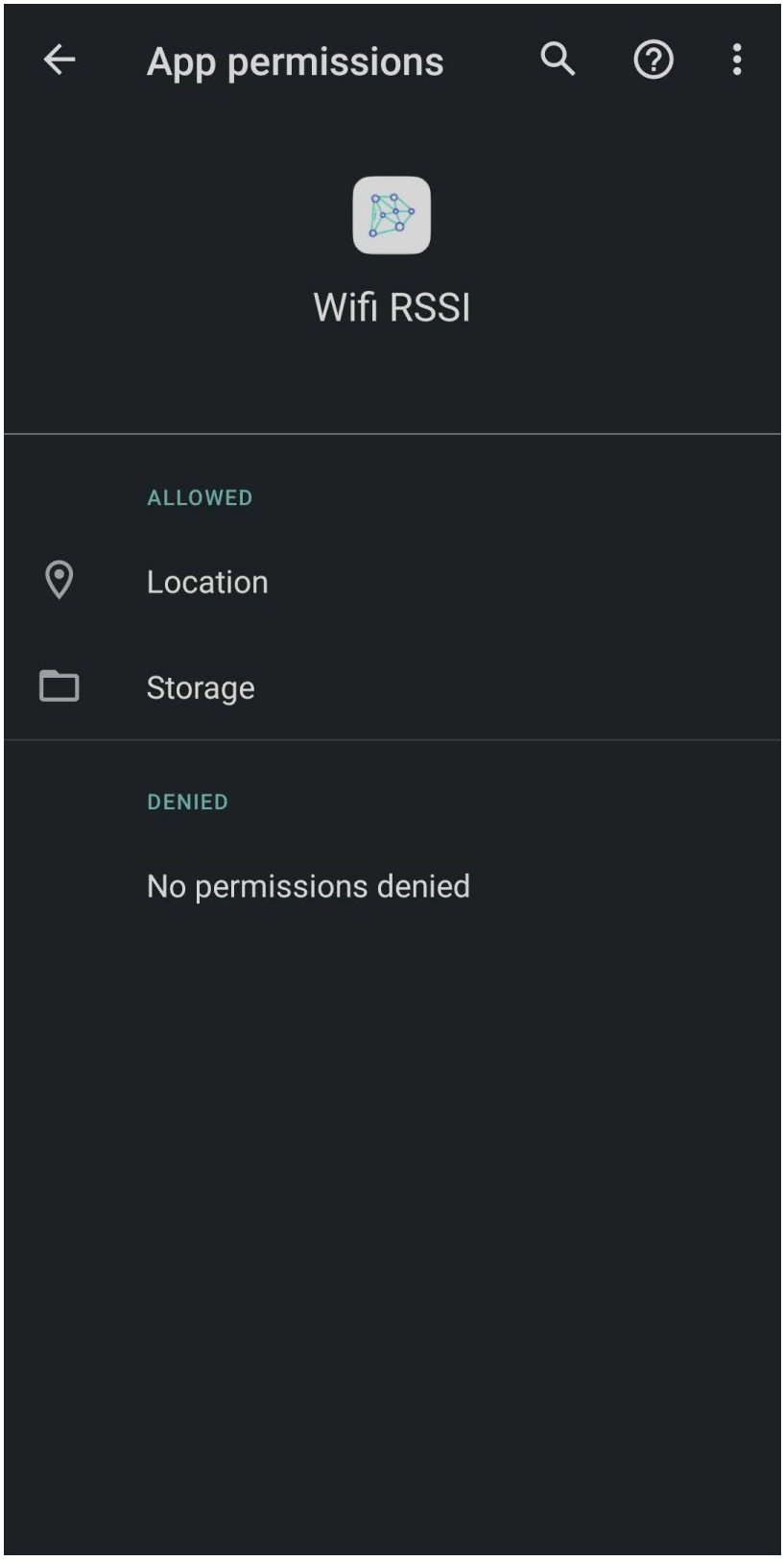
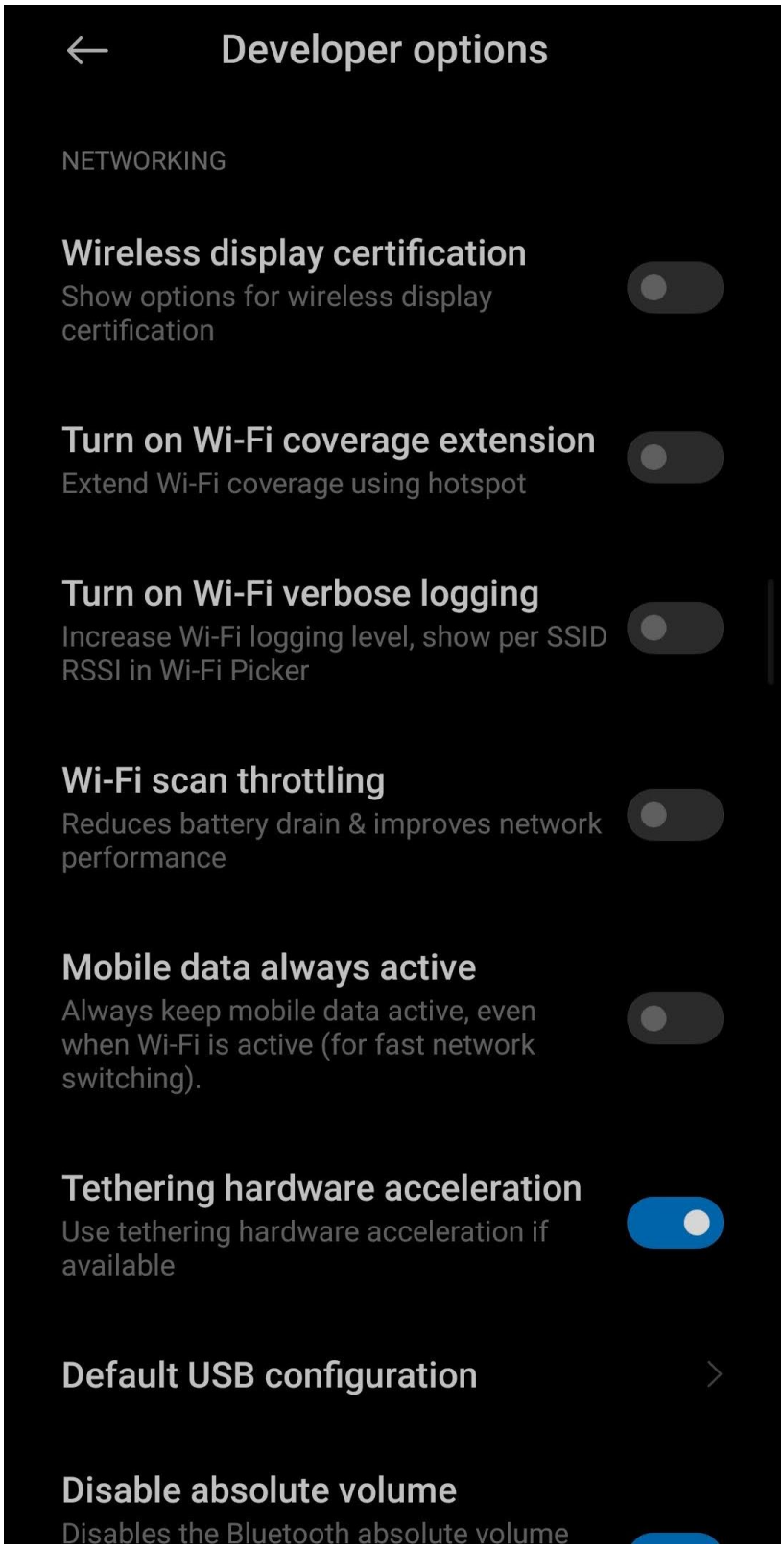
(Give All Required Permissions to App)

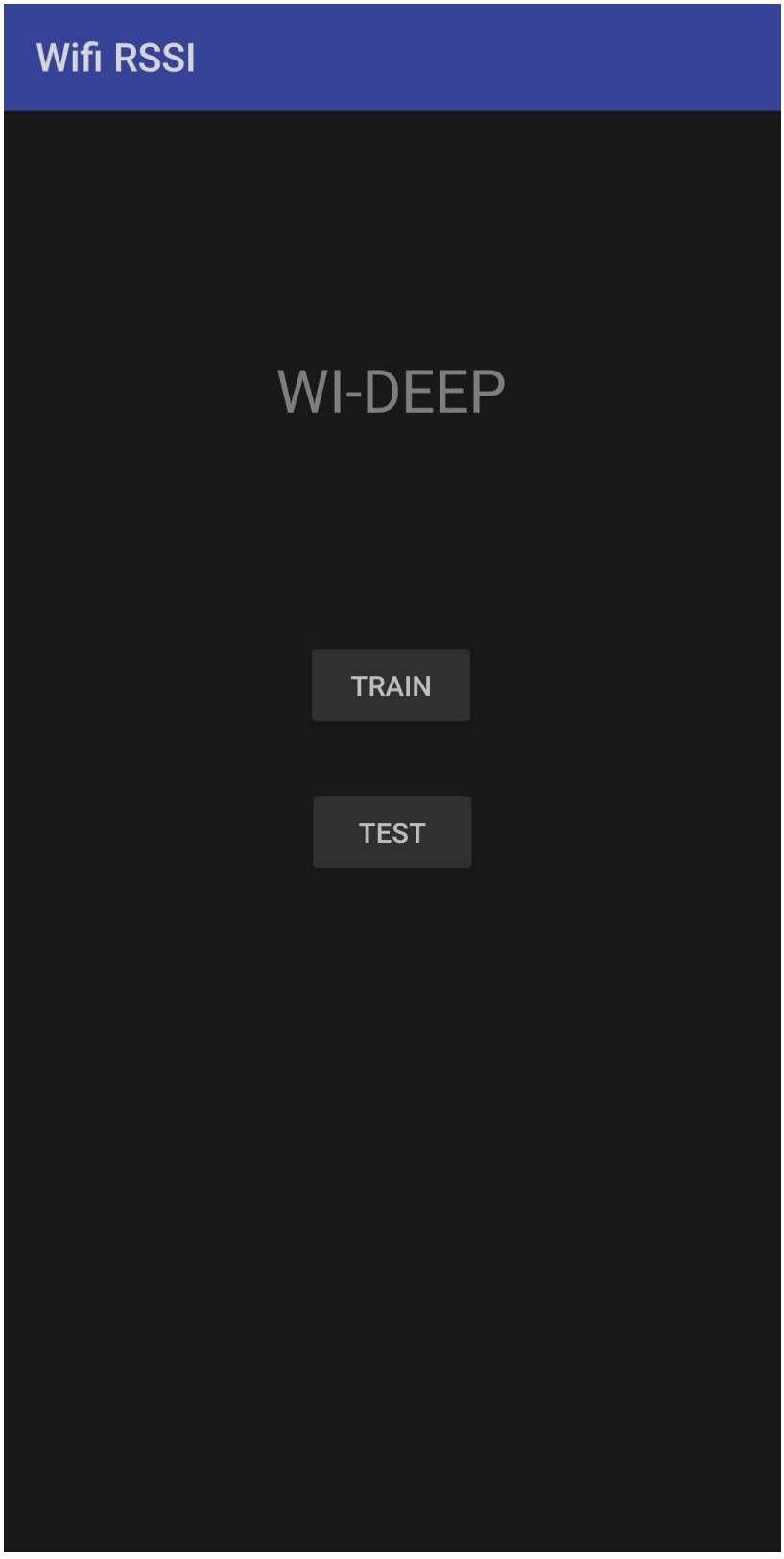


Collecting Data

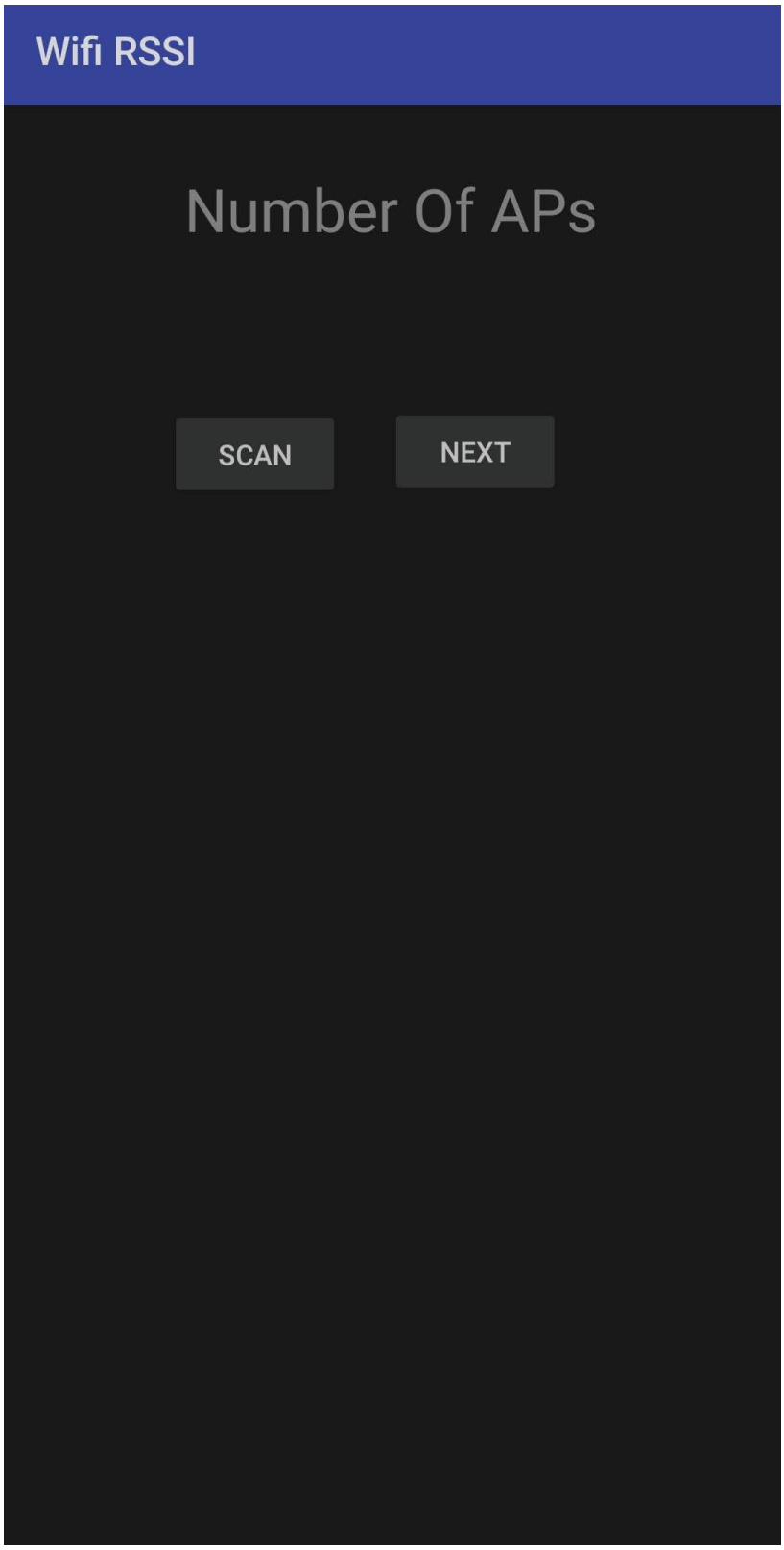
- Disable Wifi Scan Throttling Setting in Android System

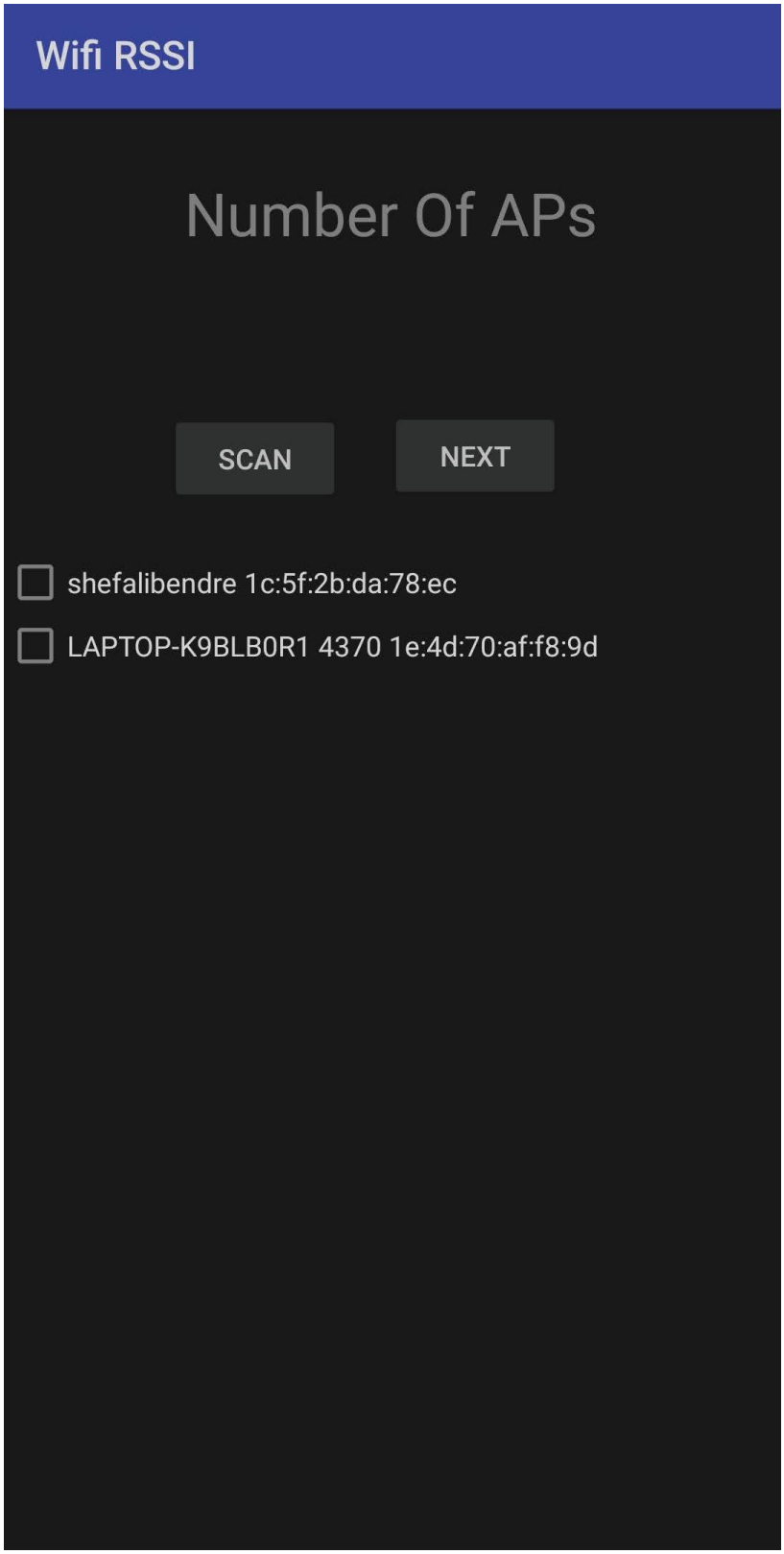


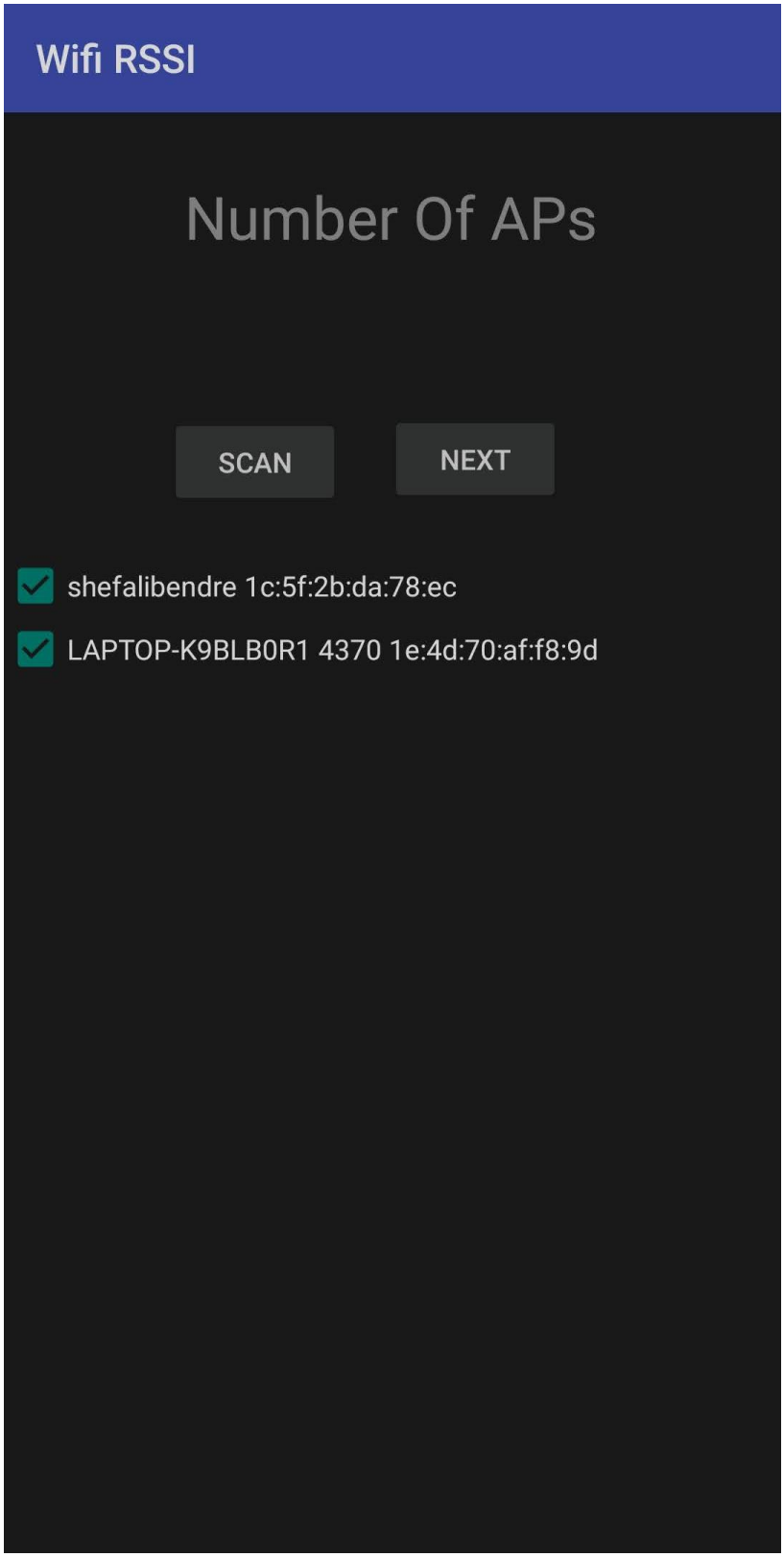
- Open Android App and select Train



- Select Scan and then select From the Available Aps (Make sure that the aps selected for scanning are stable throughout the scanning process)


Wifi RSSI
Number Of APs
SCAN
NEXT

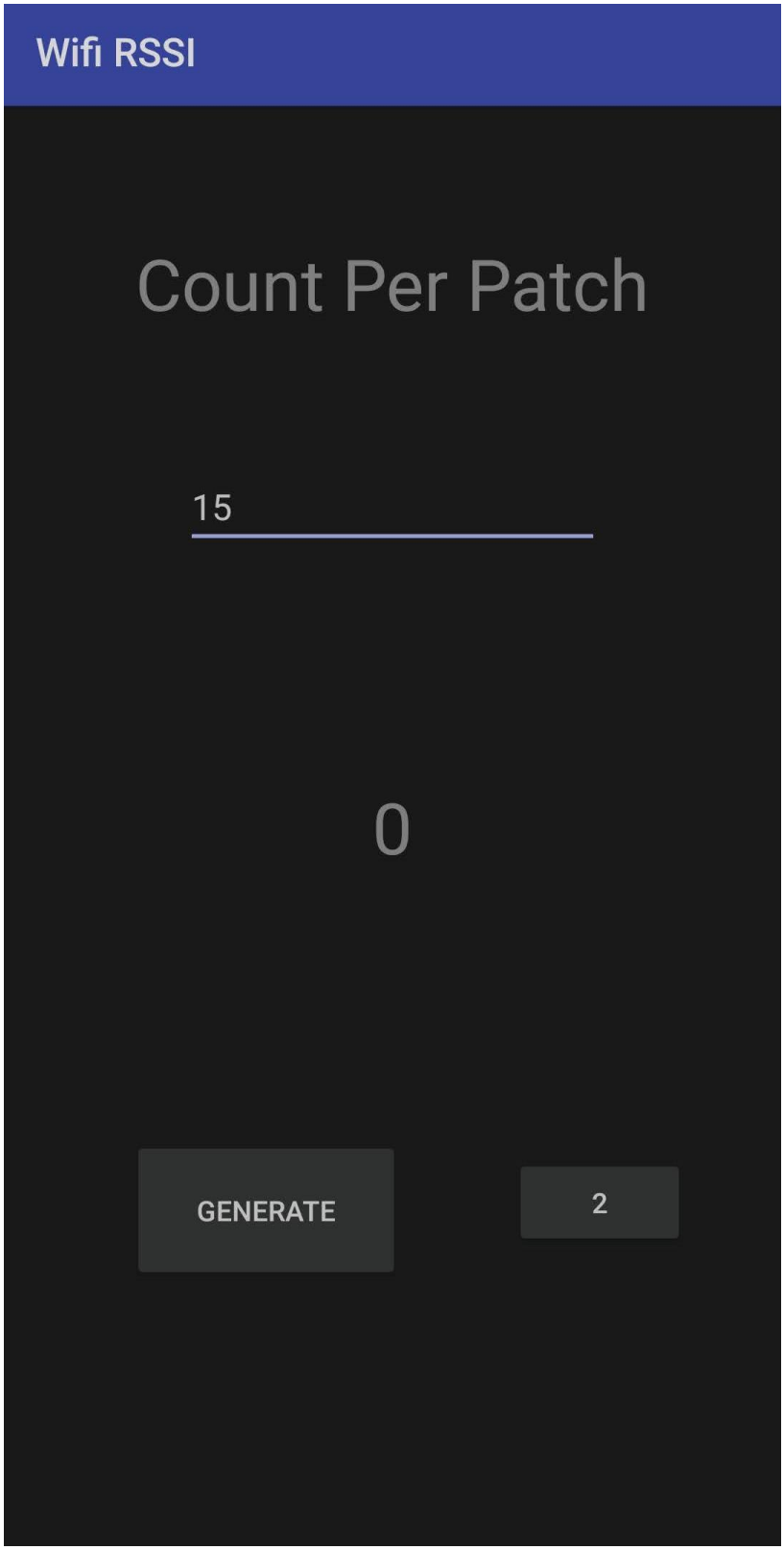

Wifi RSSI
Number Of APs
SCAN
NEXT
shefalibendre 1c:5f:2b:da:78:ec
LAPTOP-K9BLB0R1 4370 1e:4d:70:af:f8:9d



- Collect Fingerprints per Patch and click on generate


Wifi RSSI
Count Per Patch
15
14
WAIT
1

- The patch number can be incremented by clicking on the patch number



- A Samples.txt will be created in Internal Storage

Train Data (Aps by Default are 4. Make Appropriate Changes)

- Copy Collected Data in a csv file
- Remove SSID, MAC Address from csv file
- Train model using ann_train.py

(Changes to be made Before Training

X = dataset.iloc[:,0:4].values

Y = dataset.iloc[:,4].values

Change value of 4 to number of aps

classifier.add(tf.keras.layers.Dense(units = 25, kernel_initializer= 'uniform', activation = 'relu', input_dim = 4))

classifier.add(tf.keras.layers.Dense(units = 25, kernel_initializer= 'uniform', activation = 'relu'))

classifier.add(tf.keras.layers.Dense(units = 5, kernel_initializer= 'uniform', activation = 'softmax'))

Change input_dim to number of aps

Add more layers if necessary

Change units in last layer to aps + 1

)

- Model and Transformation will be exported

- Train model using autoencoder_train.py

(Changes to be made before training

nb_aps = 4

Change nb_aps to number of aps

self.fc1 = nn.Linear(nb_aps, 2)

self.fc2 = nn.Linear(2, 1)

self.fc3 = nn.Linear(1, 2)

self.fc4 = nn.Linear(2, nb_aps)

Here we can more layers and vary number of nodes

In this case, nb_aps/2 i.e, 2 and nb_aps/4 i.e, 1 has been considered

mean_corrector = nb_aps/float(4.0 + 1e-10)

Change 4.0 to number of aps with decimal point

)

- Model will be exported

- Create a Dictionary file which will store MAC addresses and its index according to csv file and store it as 'mac_dictions'

For eg.

Key	Type	Value
1c:5f:2b:da:78:ec	str	0
1e:4d:70:af:f8:9d	str	3
1e:96:e6:3d:e2:df	str	2
a6:ae:12:0e:37:ff	str	1

Deployment

- Install xampp

- Create Wideep_Project Folder in htdocs and copy Server Files in it

- Change Server IP in Android Project

- Run xampp

- Run rssi_to_point.py on Server

- Run App to See Respective Positions