Worcester Polytechnic Institute
Department of Computer Science

Module 5: Data Analysis with adb

Objectives

- Create a virtual Android phone in Santoku Linux.
- Use adb to perform operations such as analyzing data, pulling files from a device, and getting system usage statistics and wifi information.

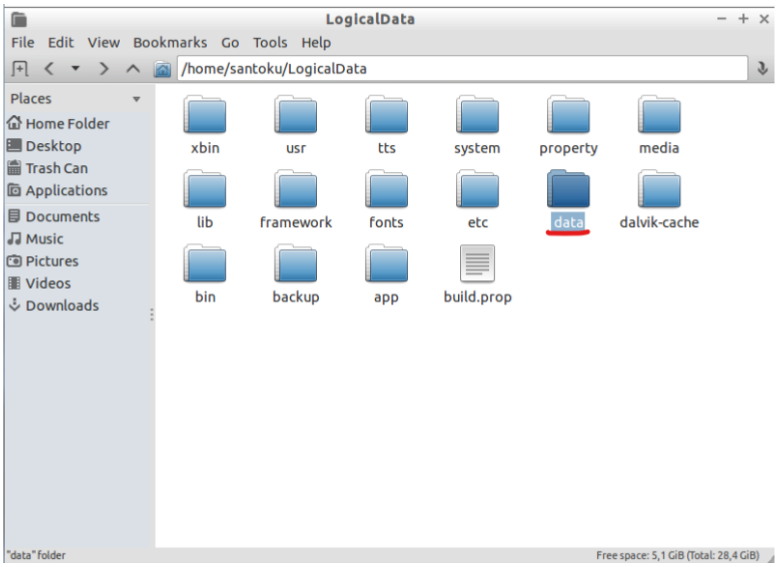
Task

Task 1. Emulator preparation

1. Follow the instruction in Module 9.2 to set up the emultor and then pull the data. (Including make a phone call, create a contact, and send messages, etc.)

Task 2. Data analysis with adb

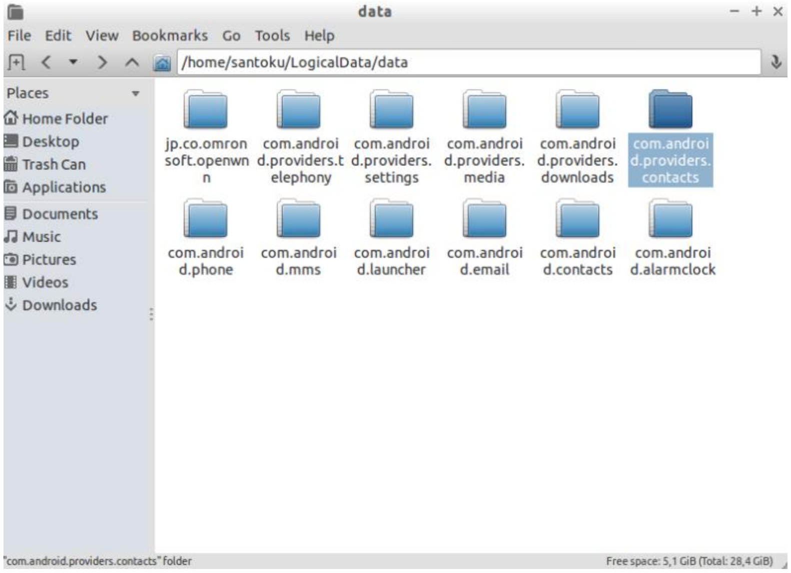
2. Open the folder "LogicalData", open "data", then open "com.android.providers.contacts", and open the folder "databases", then right click "contacts2.db" (or contacts.db) and choose "Sqliteman" to open the database. (As shown in the screenshots). After opening the contact.db, double click "tables" ->" raw_contacts". The contact you saved in previous steps will show up. If you click "calls", the call logs will show up.



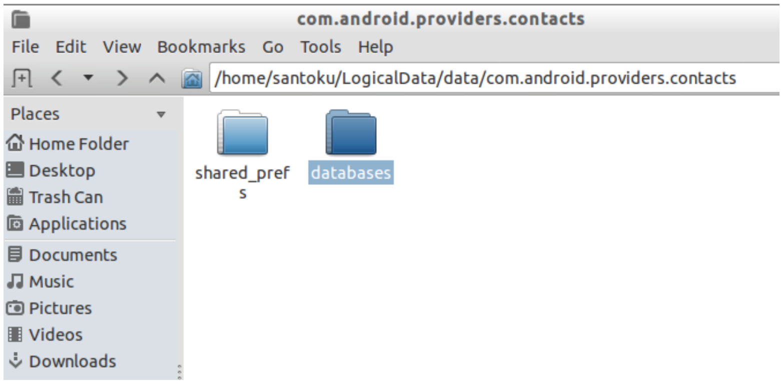
/home/santoku/LogicalData

"data" folder

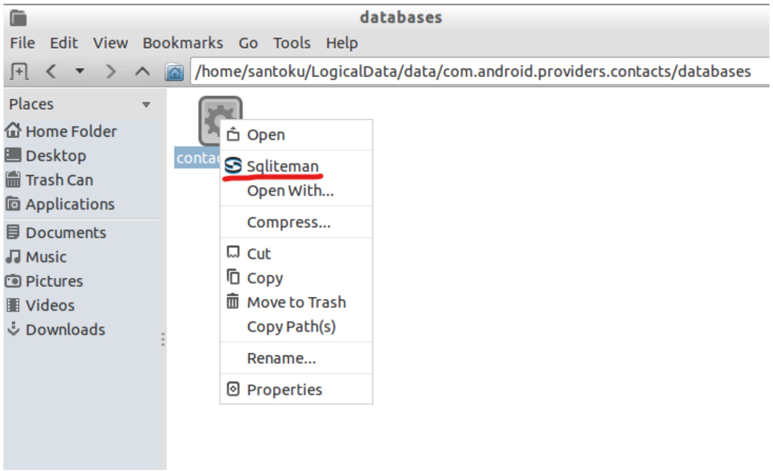
Free space: 5,1 GiB (Total: 28,4 GiB)


data
File Edit View Bookmarks Go Tools Help
Places
Home Folder
Desktop
Trash Can
Applications
Documents
Music
Pictures
Videos
Downloads
jp.co.omronsoft.openwnn
com.android.providers.telephony
com.android.providers.settings
com.android.providers.media
com.android.providers.downloads
com.android.providers.contacts
com.android.phone
com.android.mms
com.android.launcher
com.android.email
com.android.contacts
com.android.alarmclock
"com.android.providers.contacts" folder
Free space: 5,1 GiB (Total: 28,4 GiB)

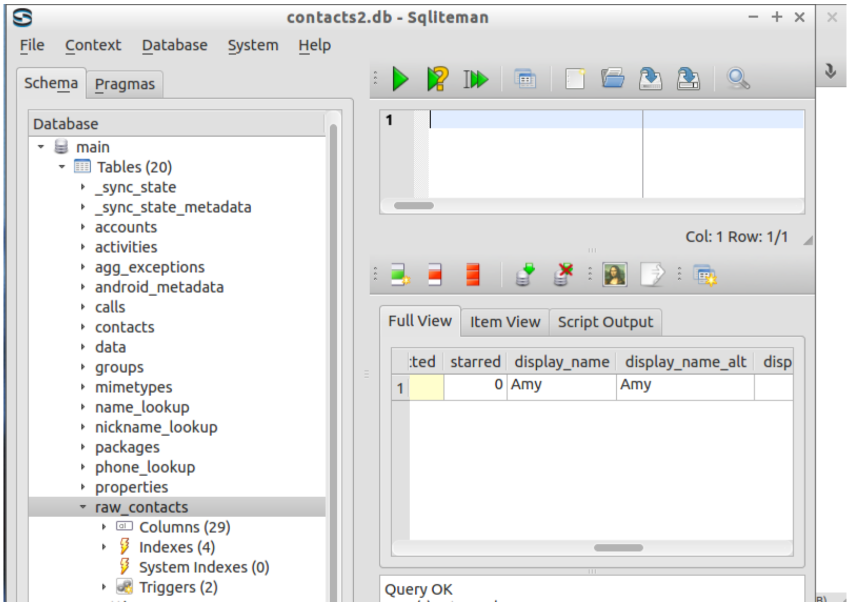
/home/santoku/LogicalData/data



/home/santoku/LogicalData/data/com.android.providers.contacts

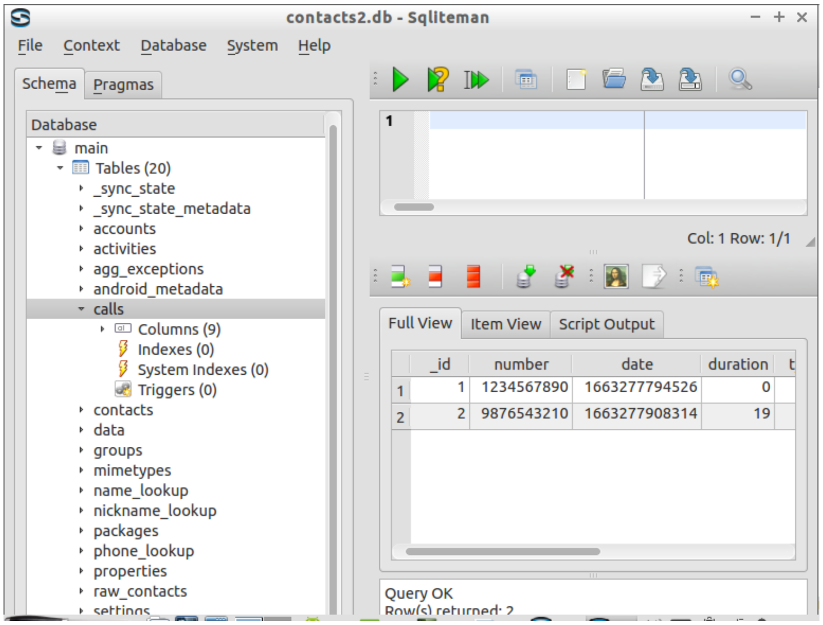


/home/santoku/LogicalData/data/com.android.providers.contacts/databases



	:ted	starred	display_name	display_name_alt	disp
1		0	Amy	Amy	

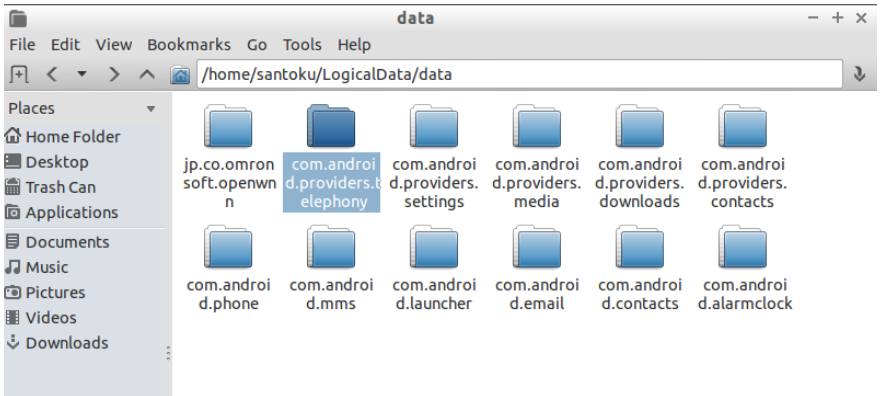
Query OK



	_id	number	date	duration	t
1	1	1234567890	1663277794526	0	
2	2	9876543210	1663277908314	19	

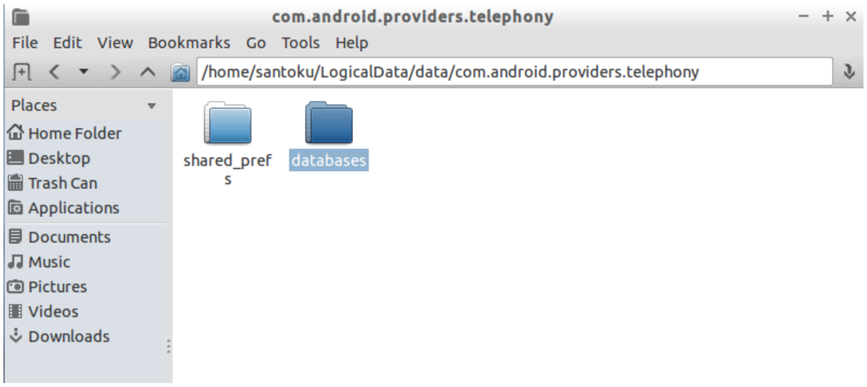
Query OK
Row(s) returned: 2

3. Go back to /home/santoku/LogicalData/data folder, open “com.android.providers.telephony” -> “databases” folder, then right click “mmssms.db”, and choose “Sqliteman” to open the database. Click “sms” table, the messages are stored in this table.



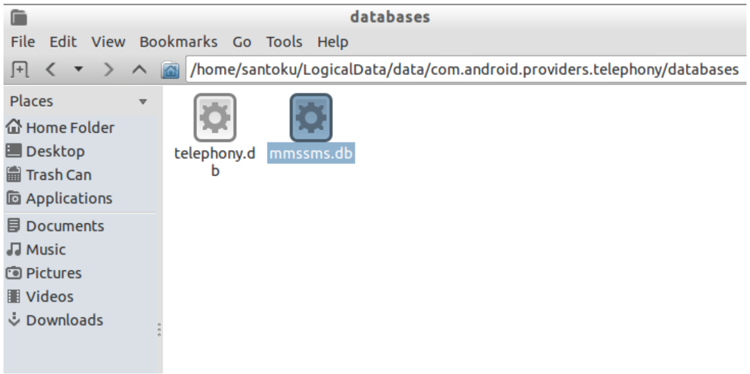
data

/home/santoku/LogicalData/data



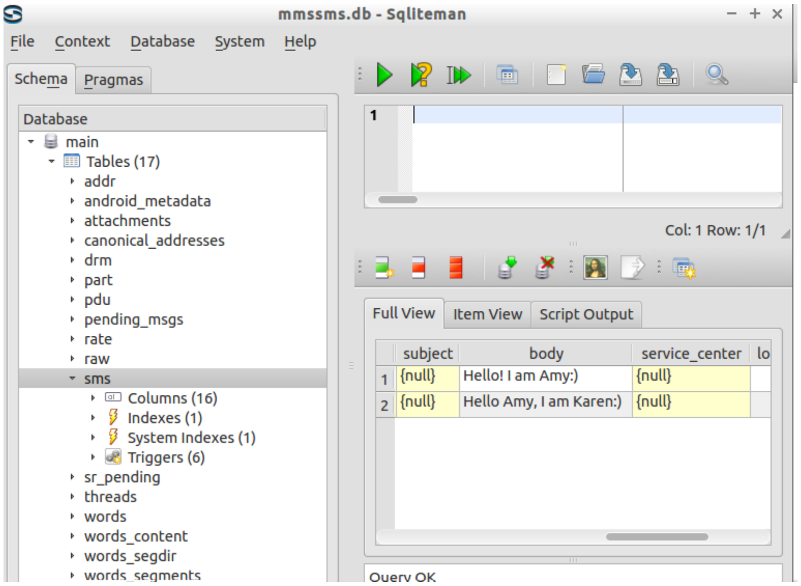
com.android.providers.telephony

/home/santoku/LogicalData/data/com.android.providers.telephony



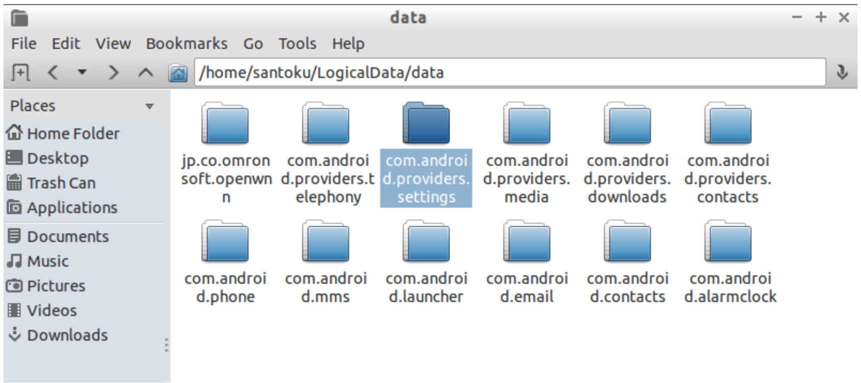
databases

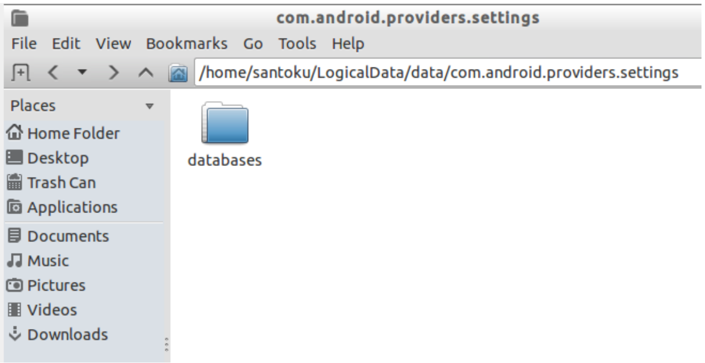
/home/santoku/LogicalData/data/com.android.providers.telephony/databases

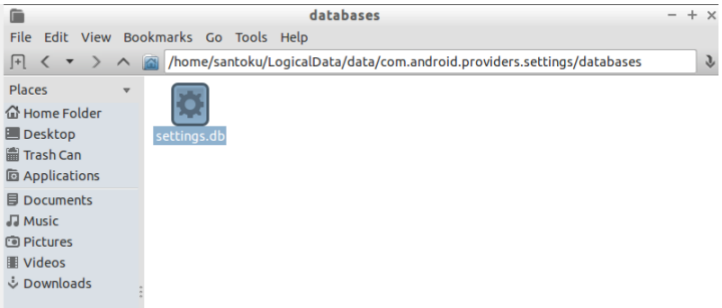


	subject	body	service_center	lo
1	{null}	Hello! I am Amy:)	{null}	
2	{null}	Hello Amy, I am Karen:)	{null}	

4. Go back to /home/santoku/LogicalData/data folder, and open “com.android.providers.settings” -> “databases” folder, then right click “settings.db”, and choose “Sqliteman” to open the database. Click “secure” table, scroll down and the information about the Wi-Fi connection will show up. However, since the API version of this emulator is API 8, this version does not support the Wi-Fi connection. Therefore, the wifi_on is closed, which is represented by “0”.

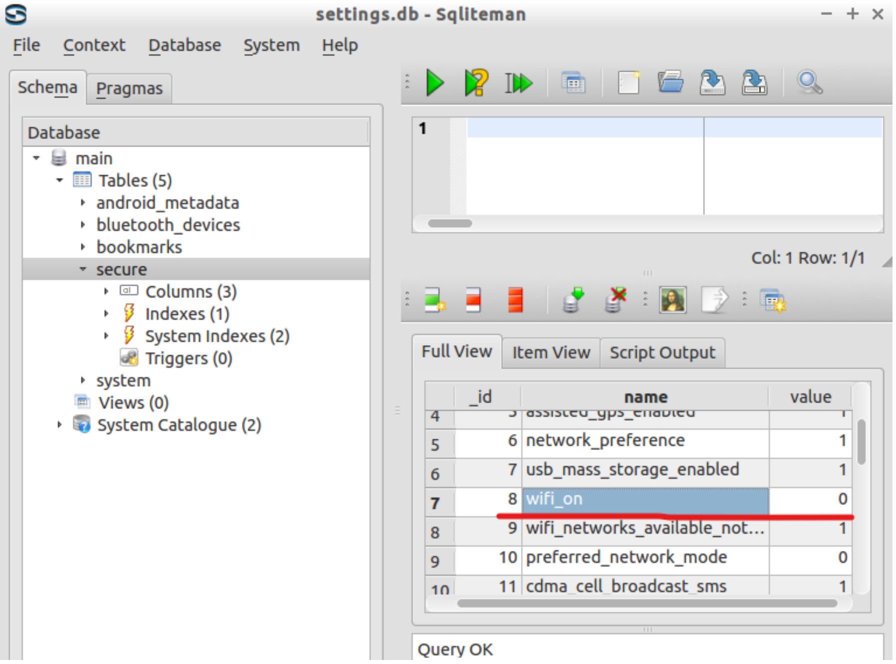



com.android.providers.settings
File Edit View Bookmarks Go Tools Help
/home/santoku/LogicalData/data/com.android.providers.settings
Places
Home Folder
Desktop
Trash Can
Applications
Documents
Music
Pictures
Videos
Downloads
databases



/home/santoku/LogicalData/data/com.android.providers.settings/databases

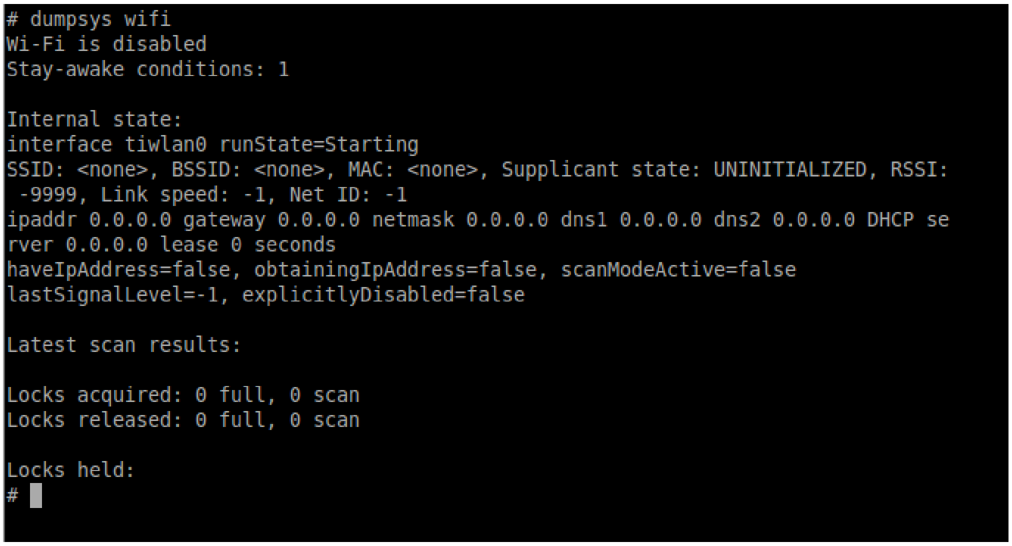
settings.db



	_id	name	value
4	5	assisted_gps_enabled	1
5	6	network_preference	1
6	7	usb_mass_storage_enabled	1
7	8	wifi_on	0
8	9	wifi_networks_available_not...	1
9	10	preferred_network_mode	0
10	11	cdma_cell_broadcast_sms	1

Query OK

Besides, the adb command ***dumpsys wifi*** is another way to check the Wi-Fi connection. As shown in the screenshot below, the wi-fi is disabled.



```
# dumpsys wifi
Wi-Fi is disabled
Stay-awake conditions: 1

Internal state:
interface tiwlan0 runState=Starting
SSID: <none>, BSSID: <none>, MAC: <none>, Supplicant state: UNINITIALIZED, RSSI:
 -9999, Link speed: -1, Net ID: -1
ipaddr 0.0.0.0 gateway 0.0.0.0 netmask 0.0.0.0 dns1 0.0.0.0 dns2 0.0.0.0 DHCP se
rver 0.0.0.0 lease 0 seconds
haveIpAddress=false, obtainingIpAddress=false, scanModeActive=false
lastSignalLevel=-1, explicitlyDisabled=false

Latest scan results:

Locks acquired: 0 full, 0 scan
Locks released: 0 full, 0 scan

Locks held:
# 
```

Deliverable:
You need to submit a lab report to Canvas. (You can submit a report with all the screenshots and questions for activity 8 in one file or you can submit several files for each module). Note: Your lab report should contain two parts.

1) Screenshots (3-4 screenshots in total for this module): Please take screenshots of the files such as message files, contact information files, and the Wi-Fi information files, etc.

2) Please answer the following questions:

1. What are the commands used in this module to pull the data from the emulator?

2. Please find the path of the contact database.

3. Please find the phone call logs and take a screenshot of it to show all the phone calls.

4. Please find the message logs and take a screenshot of it to show the messages you sent.

5. Which command can you use to find the Wi-Fi information? Which file you pulled from the virtual phone contains Wi-Fi information?