

I. Content

There are 3 folders and one README file in HW3 Zip file

1. **APK Folder:** This contains all of the apk that I used in this homework.
2. **Python Folder:** This contain the code which will work on the xml files that generate from COVERT
 - (1)component.py : grab all component that contain a <action> in any <Intent> in <IntentFilter> in a xml file
 - (2)intent.py : grab all intent that contain at least one <action> in a xml file
 - (3)compare.py : This will compare each component in a certain app and all Intents in all twenty app to see if the intent can call the component in this app
 - (4)short.py: a additional python file which I coded for the result out from compare.py, since the data (dataAll.txt)is too large
 - (5)permission_get.py : this will get the permission data form a xml file
3. **XML Folder:** some result that come out in the process
4. **All20 Folder :** folder for each app
5. **index.html :** the visualization code

II. Process:

There are two parts in my visualization: the intent part and the permission part

First, the intent part

Step1:

Using COVERT to get the xml file for all apk

Step2:

Create a folder for each app, and store their xml file, intent.py, and component.py

Step 3:

Change the name to each xml file's name in the intent.py and component.py for each folder (All folder are in All20 folder)

Step 4:

Run intent.py and component.py in each folders (so, run 20 times each)

intent.py -> intent_xml_generator.py -> intent.xml

component.py -> python_for_xml.py -> action.xml

Step 5:

Gather all of the intent files into one big file (intentAll.xml) by copy and paste

For mine, intentAll.xml (located in XML folder) is what come out from this step

Step 6:

Create a new folder which contain the intentAll.xml, then put one action.xml one

at a time (so, yes another 20 times).

Add compare.py in this new folder

Run the compare.py file, and the result.txt will be generated

Step 7:

The result.txt file will renew every time, get all of the result and keep them in dataAll.txt

Step 8:

Run short.py for dataAll.txt (Avoid duplicated data)

Step 9:

Copy the data in dataAll.txt in to index.html file. (in the link={})

Second, the permission part

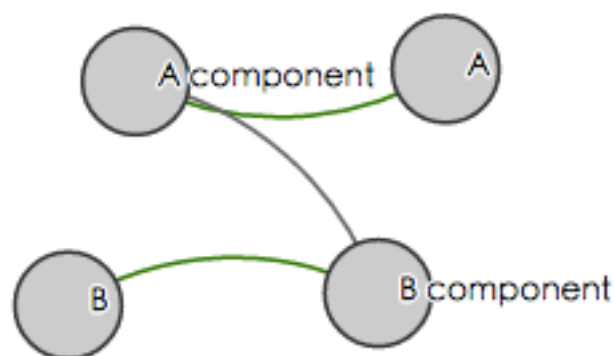
Step 1:

Copy the permission_get.py to each folder, and change the name in the python file

Step 2:

Copy the result in the permission.txt, and paste it to the index.html (also in the link={}).

III. Visualization:



The green line is a link which point the App to its component

So ,in the picture,

A has a component, namely A component

B has a component, namely B component

The gray line represents a Intent that could happen between two components from different apps. The intent information will be showed at the bottom of the page.

There is one for information that will show in the bottom of this page.

The permission each app ask from the Android.

The Information will show while you mouse over the App's circle.

IV. How I run my index.html

- 1.Open terminal, and go to the location of index.html
- 2.run `python -m SimpleHTTPServer` to create a local server
3. Go on any brower, and input the URL : `http://localhost:8000/`