Mobile App Engineering and User Experience - Fall 2017
2nd Assignment – Contact List Report
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Summary
As an undergraduate student, I achieve all the requirements. And I believe my assignment points will be in the range of 100 points maximum.

Details

- Ways to store data: I store all the data in Shared Preferences. I store it like a key-value pair <String_id, String_base64>. The “String_id” is a unique string id of a contact, to identify different contacts that have the same name. And the “String_base64” is a string that encodes the contact object by base6. It includes all the information of a contact, like name, phone number, relationship, etc.
- What is a contact object: I write a class to describe the contact. It has all the information of a contact and some useful methods to get the information of a contact, or add or delete relationships of a contact. At the same time, it can also store the temporary check status, in order to multi-delete or sort the contacts.
- Data Management: I write a class ContactManager to manage contact. It provides methods which can add, delete and find all contacts, and can update a list of contacts when add or remove a contact.
- Description of relationships: A contact object has a List<Map<String, String>> to save the relationships. The Map stores two key-value pairs which are <“id”, String_id> and <“name”, name>.
- Activities and fragments: There are three activities and three fragments, for main page, details and profiles respectively. In portrait, each activity contains a fragment. And in land, each activity contains two frame layouts, the left one will fill in the main fragment, the right one will fill in the corresponding fragment.
- Keep the information when rotate the screen: I implement an interface to pass the information user input now to the details activity. And use onSaveInstanceState() and onRestoreInstanceState() in the activity to maintain the data. Later, set the data as an argument to the detail fragment, and then replace the corresponding framelayout with the fragment.

IMPORTANT Notes:

- I have big problems when passing parameters between different fragments among different activities. At last, I have to add different layouts for activities, and call up a new activity when the user click the add button any time. I suppose that I may implement the whole APP by just using ONE activity, but I don’t know whether it meets the requirement or not, so I give up the thought later.
- The APP runs properly on my Oneplus One (Lineage OS, Android 7.1.2) and virtual devices like Nexus 5X (Android 7.1.1 x86) and Nexus 5X (Android 6.0 x86).