CE/CS/SE 3354.003 Course Project

In this project, you work in groups of 4 - 5 people, and develop an android application to exercise the software engineering techniques learned in the classes. Each group can choose a topic listed in this document or choose your own topic. But please contact me before you decide to choose you own topic.

Process & Deadlines

1. Form a group **(Due: ~~11:59pm, Sep. 13th~~)**
The grouping is first initialized by the students and then adapted by the TA. In the group, it is up to the students to decide how to manage the group and assign work among group members. There can be some people working only on some phases of the project, e.g., requirement, testing.

2. Pick a topic **(Due: 11:59pm, Sep. 18th)**
After forming a group, you may choose to work on a predefined topic (as shown in the later part of this document). Tell me by **Sept. 18th** which topic you choose. You can choose other topics, but it should still be a Java project and you should inform me still by **Sept. 18th**. If you want to work on other topics. We can schedule a time to talk about the details.

3. Requirement Engineering **(Due: 11:59pm, Sept. 30th)**
Requirements are provided in natural language for pre-defined topics in the later part of this document. It is not a specification, and there is not much details. You are free to choose how to implement a certain feature. But you should precisely specify what you are going to do in your requirement specification (use-case diagrams and natural language specification). I may give you feedbacks after you hand in the specification.
Deliverables: Use case diagrams, natural-language specification

4. Design **(Due: 11:59pm, Sept. 30th)**
Please use UML diagrams to document your software design. You may change you design after you hand in your design documents.
Deliverables: Class diagrams (whole system), sequence diagrams (two scenarios)

5. Implementation **(Due: 11:59pm, Nov. 11th)**
Implement the features as them in your requirement specification, and export you product as an android app. You must use a version control system during you implementation. It should also be noted that unit test cases should be included in your delivered code. You are also recommended to write API documents (using

Javadoc[1]) and user manual during this step. Note that the user manual should cover all the required functionalities (no-optional requirements). During your implementation, please record you relevant emails for later teamwork evaluation. **Deliverables: Source code, binary code, unit tests, and documents (API docs and user manual). Note that documents are recommended to be done at this phase, but are to be delayed until the end of the testing and maintenance step (Dec. 7th).**

6. Testing and Maintenance **(Due: 11:59pm, Dec. 7th)**
You should do system testing after you implemented the software. You can either apply manual testing or use automated tools like Monkey[2] (preferred). You should also do project maintenance and refactoring. Note that I may give you some specific feature change requests at this phase. Please record the test cases, expected results, and actual results as a test document.
Deliverables: Test documents, bug reports, revised code and change documentations

7. Presentation **(On: Nov. 12th, Nov. 17th, Nov. 19th, & Dec. 1st)**
All people should present part of their work. Talk about problems met during development. The presentation should include running the major features of your app. Each group will have 20 minutes for presentation and demo.

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[1] http://www.oracle.com/technetwork/java/javase/documentation/index-jsp-135444.html
[2] http://developer.android.com/tools/help/monkey.html

Predefined Topics
1. Calendar
    1.1 Views
        1.1.1 Monthly view: show all days in a month, and event snippet for each day
        1.1.2 Weekly view: show all days in a week, and event snippet for each day
        1.1.3 Daily view: show all events in a day, sorted by their starting time
        1.1.4 Agenda view (optional): show all events in future as a list
    1.2 Events
        1.2.1 Add an event with starting and ending time
        1.2.2 Check time conflicts when adding events
        1.2.3 Add weekly periodical events
        1.2.4 Edit & delete events
        1.2.5 Event alert (optional)
        1.2.6 Add/delete event categories
        1.2.7 Color marking for different category of events
    1.3 Share (optional)
        1.3.1 Send event to other calendar users (requiring their permission) through internet
    1.4 Other
        1.4.1 Holidays & weekends should be in special colors
        1.4.2 Zoom in/out, and scroll support when necessary

2. SMS Messenger
    2.1 Messages
        2.1.1 View, edit, and delete messages, save a message under edition as draft
        2.1.2 Send & receive messages
        2.1.3 Reply & forward messages
        2.1.4 Search messages by text query
        2.1.5 Send to multiple receivers (optional)
        2.1.6 Scheduled message (optional)
        2.1.7 Auto reply (optional)
    2.2 Phone Numbers
        2.2.1 Show contact name in message when the phone number is in the stock contact app
        2.2.2 Save a new number to the stock contact app
        2.2.3 When sending a message, a user can choose to select from the stock contact app or input a new number
    2.3 Message organization
        2.3.1 Categorize messages by phone number (contact name)
        2.3.2 Conversation view: view all messages between you and a certain contact, sorted by sending/receiving time
    2.4 Other
        2.4.1 Zoom in/out and scroll whenever necessary

3   Contact Manager
   3.1 Contacts
      3.1.1   Add, view, edit, delete contacts
      3.1.2   Support multiple phone numbers
      3.1.3   Support adding a photo label for a contact
      3.1.4   Search contacts by contact name
      3.1.5   Blacklist (block SMS and Phones)
      3.1.6   Directly make phone calls and send SMS from a contact view
   3.2 Contacts Organization
      3.2.1   Add contact groups
      3.2.2   Manage contact groups (add/remove contacts)
      3.2.3   Sort contacts by name / group name
   3.3 Contacts Storage (optional)
      3.3.1   Export contacts to file on SD card
      3.3.2   Load contacts from file on SD card
   3.4 Extract contacts
      3.4.1   Extract contacts from stock contact app
      3.4.2   Extract contacts from social media websites (optional)
   3.5 Other
      3.5.1   Show contact name when making / receiving calls & sending / receiving messages using stock app
      3.5.2   Zoom in/out and scroll whenever necessary

4   Book Shelf
   4.1 Book management
      4.1.1   Load books from SD card and Download folder, provide support to .txt and .pdf (.epub optional)
      4.1.2   Delete books
      4.1.3   Add category of books
      4.1.4   Manage categories (add/remove books)
      4.1.5   Search books by text query
   4.2 Book reading
      4.2.1   Swipe to go to the next/previous page
      4.2.2   Bookmark a page and go to the bookmark page (optional for .pdf)
      4.2.3   Day & night mode (optional for .pdf)
      4.2.4   Search for word and go to the word (optional for .pdf)
      4.2.5   Change font and size of the text in the book (optional)
      4.2.6   Extract chapters and directly go to certain chapters (optional)
   4.3 Book notations (optional)
      4.3.1   Add notation to certain page
      4.3.2   View notations on page with notations
      4.3.3   Edit notations
      4.3.4   View all notations for a book
      4.3.5   Delete notations
   4.4 Other

4.4.1 Zoom in/out and scroll whenever necessary