

**Umeå University**  
Department of Computing Science

Development of Mobile Applications 7.5 p  
5DV155

**User Interface for Mobile Systems**

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## 1 Introduction

The aim of this assignment is to translate a desktop mail client application to a mobile app. This includes both functional and design related aspects. The functionality shall be described in terms of android elements and concepts such as activities, layouts, menus, dialogs, fragments and messages. A main aspect is to decide and reason which functionality should be stripped from the desktop version and eventual additional functionality needed in the mobile app.

The design shall account for usability aspects following concepts from the course literature [1] and platform guidelines [2]. The report has to include several prototype designs of which at least one shall be made in 'Android Studio' and one by hand or any design/drawing application of choice.

Further, one section of the report shall describe differences and changes in the design when the proposed Android application would be ported to another mobile platform of choice.

## 2 The Desktop Mail Client - Apple Mail

Here the 'Apple Mail' client was chosen as the application to be ported into an Android mobile app. The version at hand was 10.3 (3273) in a macOS Sierra Environment (10.12.5). Initially, a systematic inventory of the available functionality in Apple Mail was conducted.

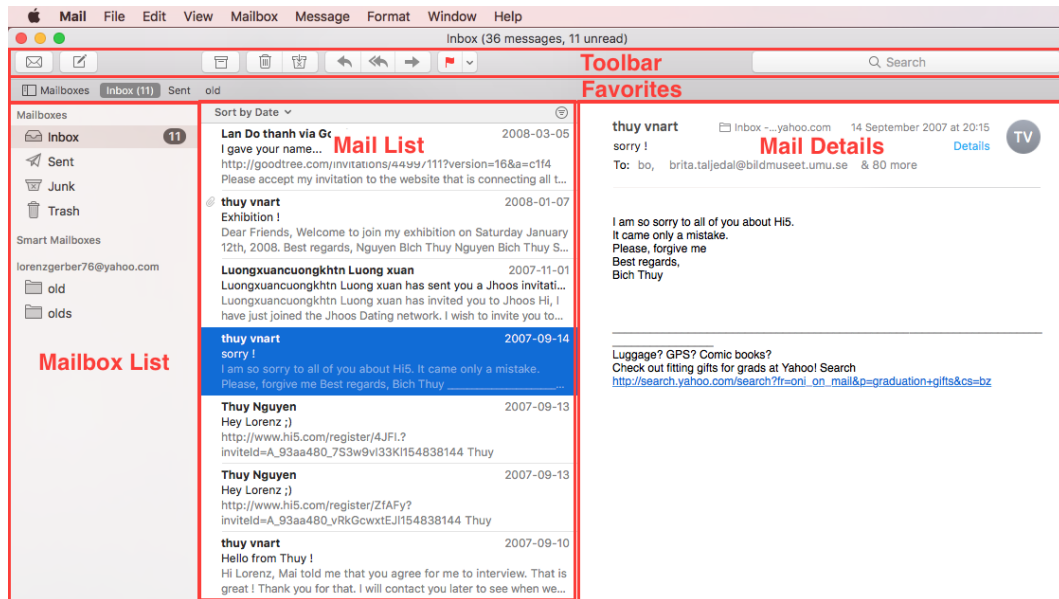
### 2.1 Description of main UI of Apple Mail

The main UI of Apple Mail is shown in figure ?? . It consists of three columns of which only the 'Mail List' and 'Mail Details' column are shown by default. The 'Mail List' presents all mails of the active mailbox. the list entry can be customised in the 'Preferences', accessible through the 'File' drop down menu. The 'Mail List' has by default a sort/filter bar with a drop down menu for various list sort methods and an icon button to apply filters. The 'Mail List' scrolls vertically when not all mails of the mailbox fit on the screen. Inspired by the Apple iOS interface, mail list items implement horizontal swipe actions. By default, to the right for deleting and to the left for toggling read/unread.

The 'Mail Details' frame shows the detail view of one email, the one selected in the 'Mail List'. This view scrolls if needed both vertically and horizontally. Various options regarding the visualization can be chosen in the 'Preferences' menu. By default, the header of the mail contains a number of 'hyperlink' style functionality for toggling visibility of some less often needed information but also as shortcut for the common mail actions 'Delete', 'Reply', 'Reply to all', 'Forward' and access to attachments.

The 'Mailbox List' column can be toggled visible/invisible by a button in the 'Favorites' bar which otherwise contains text buttons for the available mailboxes.

Above the 'Favorites' bar there is the 'Toolbar' that contains in the default setup nine buttons and a search field. The buttons are from left to right: 'Get new messages', 'Compose new mail', 'Archive selected', 'Delete selected', 'Selected to junk', 'Reply', 'Reply All', 'Forward' and 'Flag selected'. The search field allows for text search in all or in a specific mailbox. Both the content and the layout of the 'Toolbar' is freely customizable with a number of additional functions/buttons not visible in the default setup.



**Figure 1:** The main view of Apple Mail has three columns: 'Mailbox List', 'Mail List' and 'Mail Details'. The 'Mailbox List' column is however hidden in the standard configuration.

## 2.2 Description of Menu accessible Functionality in Apple Mail

The 'Menu Bar' contains the dropdown menus 'File', 'Edit', 'View', 'Mailbox', 'Message', 'Format', 'Windows' and 'Help'. Most of the menu items are functionality that is also directly accessible in the UI. The menu shows keyboard shortcuts for much of the functionality. Menu items not found in the UI are either for configuration and customizing the UI, or for setting up and configuring the user data such as mailboxes accounts and smart assistant functions.

## 3 Desktop to Mobile Transformation

The prior section described in detail the source application 'Apple Mail'. In this section, the functionality and layout of the desktop application is structured and translated into the mobile context that will provide the conceptual framework for designing prototype layouts of the mobile application.

### 3.1 Interpretation and Translation of the Functionality

The components of the email application model are identified to be:

- Mailbox Account
- Mailbox Folder
- Mail

From these components, the most important is for obvious reasons the mail. Mailbox accounts are initially mostly a matter of application setup. During daily usage, together with Mailbox folder, they become merely structures as basis for data visualization in the

UI. Note that there is no ‘User’ entity in the application model. This is because the email client is bound to the global system user account on the desktop system. The same concept will be used also for the mobile application. Hence all general settings in the application can be seen as the ‘User’ settings.

The functionality used most often is centered around the single mail:

- Compose new
- View
- Reply
- Reply All
- Forward
- Delete
- Archive
- Flag
- Junk

From these actions, the first five are directly related to the main purpose of the applications, send and receive mails. while the last four are more secondary functionality to enable a more convenient organization of the mails.

Functionality that acts upon a selection of emails is:

- Sort
- Filter
- Search

### **3.2 Interpretation and Translation of UI**

#### **4 Design with Android Elements**

How to splitup the functionality into activities, layouts, menuues, dialogs, fragments and messages. Elaborate which functions that are most important and that should be included. Which functions can be left out to compensate for the mobile context Is there needed some additional functionality for the mobile context reflect on the different aspects regarding usability describe how the interaction shall happen. Motivate design descisions.

#### **5 Some design examples from Android Studio UI Designer, some pen paper designs**

#### **6 describe how all main functionality in the app**

#### **7 Describe needed changes for another mobile platform**

#### **References**

[1] Josh Clark. *Designing for Touch*. A book apart, New York, USA, 2015.

[2] Google material design. <https://material.io>, 2017. accessed: 2017-07-18.