SOMAIYA VIDYAVIHAR UNIVERSITY
K J Somaiya College of Engineering

Chapter 3

Mobile Interface Design

4.1 Patterns for page composition

Somaiya TRUST

Patterns for page composition

- Scroll
- Annunciator Row
- Notifications
- Titles
- Revealable menu
- Fixed Menu
- Home & Idle Screens
- Lock Screen
- Interstitial Screen
- Adverstising

Patterns for page composition - Scrolls

- When information on a page exceeds the **viewport**, a scroll bar control may be required to access the additional information. Scrolling of information should almost always occur along one axis, except in rare cases.
- View port
  - The viewport is the user's visible area of a web page.
  - The viewport varies with the device, and will be smaller on a mobile phone than on a computer screen.

Viewport


```
<meta name="viewport" content="width=device-width, initial-scale=1.0">
```

Patterns for page composition - Scrolls

- Annunciator Row
  - This displays the status of hardware features on the top of each page. The status of functions that may be displayed is radios, input and output features, and power levels.

- Notifications
  - When an alert requires user attention, a notification will occur in some form of visual, haptic, or audible feedback. These notification displays must allow for user interaction.

Patterns for page composition - Scrolls

- Titles

  Pages, content, and elements that require labels should use titles. These titles should be horizontal, be consistent in style, and follow guidelines of legibility and readability.

- Revealable Menu

  This type of menu displays additional menus that are not immediately apparent. A gesture, soft key, or on-screen selection will cause these menus to immediately display on-screen.

Patterns for page composition - Scrolls

- Fixed Menu

  This type of menu presents an always-visible menu or control that is docked to one side of the viewport. This menu is consistently placed throughout the application. These interactive controls are most likely icons with textual coding.

- Home & Idle Screens

  These screens are used as display states when either a device is turned on or an application has exited, timed out, or returned to a device-level menu display.

Patterns for page composition - Scrolls

- Lock Screen
  - Mobile devices use this display state to save on power consumption. When necessary, the application's sleep state may become locked to protect the security of the data the user has input.
- Interstitial Screen
  - This type of screen is used primarily as a loading process screen during device or application startup. Wait indicators may be used to show loading progress.

Patterns for page composition - Scrolls

- Advertising

  When advertising is used within a mobile application, the advertisement must be distinct and must not affect the user experience. Obtrusive advertising could prohibit the user from achieving his task-based goals. Advertising must adhere to the specific guidelines set by the Mobile Marketing Association (MMA).

Patterns for page composition - Scrolls

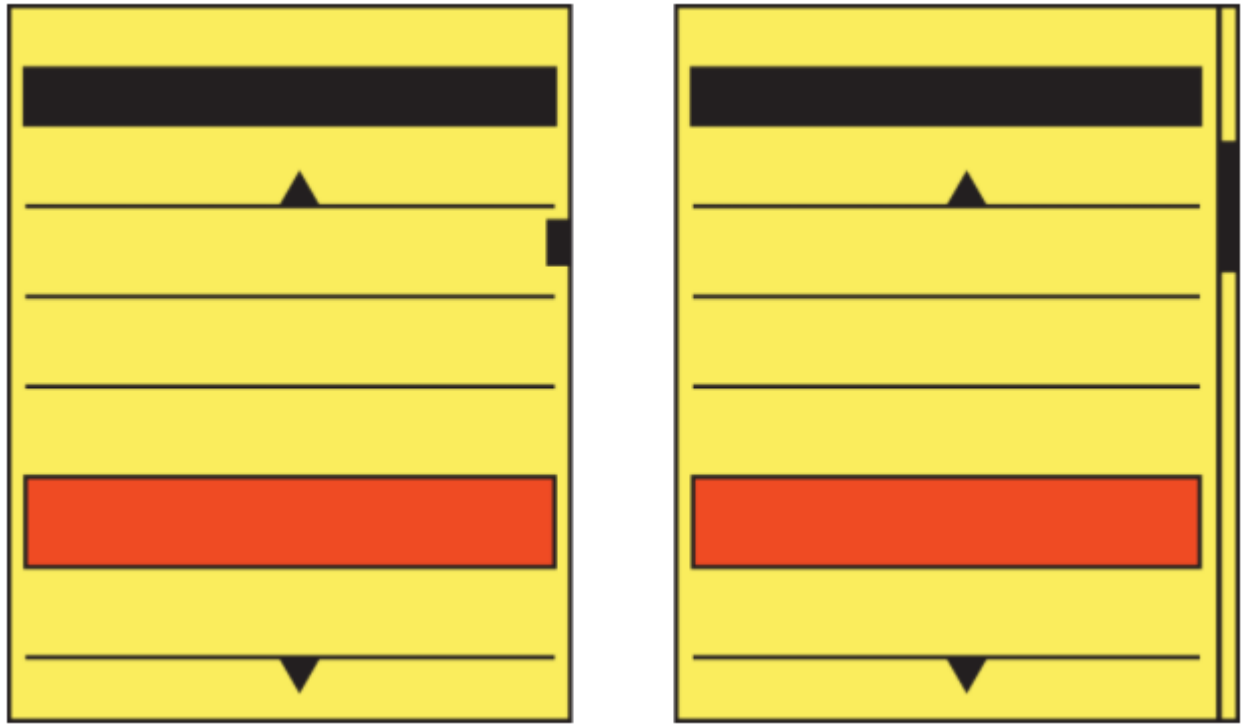
- Scroll

  Problem

  More information is in the page or element than can fit in the viewport. You have to provide a method to access this information.

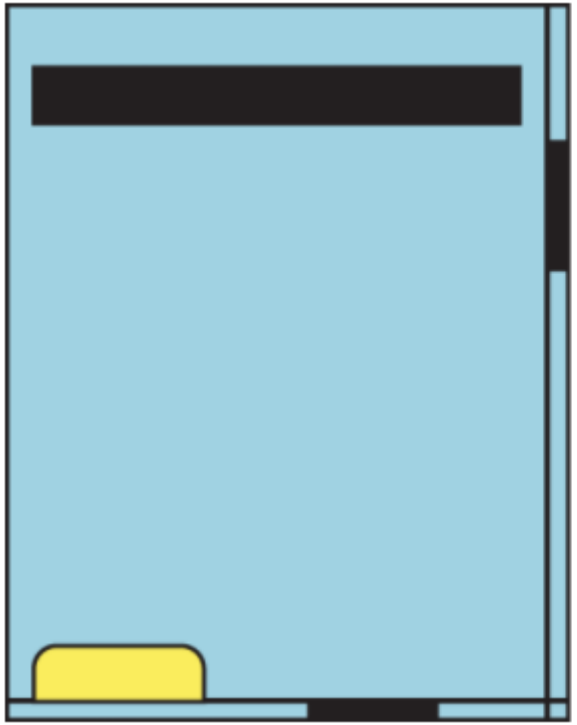
  Usually, the OS provides this function. Certain behaviours will occur automatically, but in application design especially, you may need to customize your interaction and interface to work in the best possible manner.

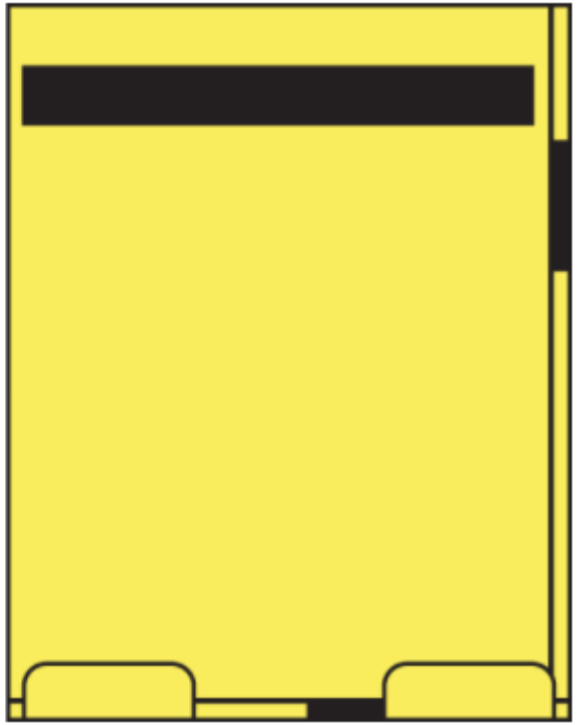
Patterns for page composition - Scrolls



Patterns for page composition - Scrolls

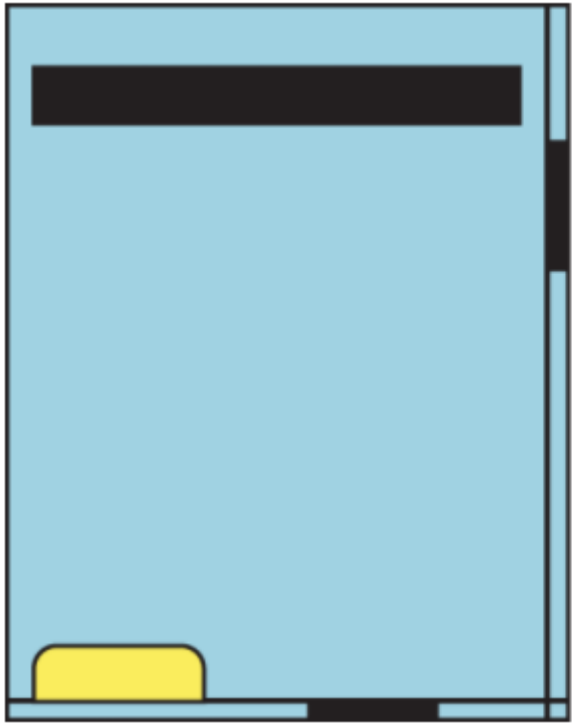
- Two types of two-axis scrolling. For items like images where both axes are equal, scroll bars must be equally easy to see and use. Make sure they are not obscured by options menus and other items, as shown to the left.

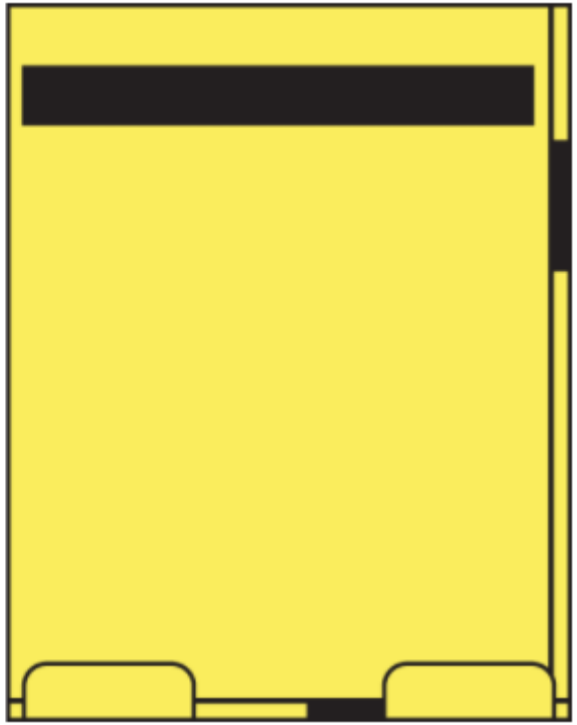




Patterns for page composition - Scrolls

- For information oriented mostly along one axis, the other axis is secondary, and the scroll bar may be obscured as needed. On the right, the soft keys are not always visible, but they do sometimes occlude the horizontal scroll bar.





Patterns for page composition - Scrolls

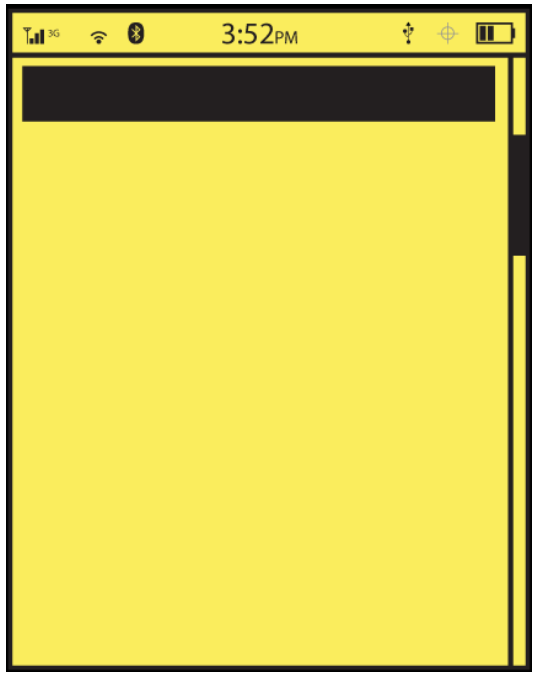
- Scroll indicators are not usually used in mobile devices to enable scrolling, but to:
  - Provide an affordance (communicate the function) that the area is scrollable
  - Convey the current location within the total content
  - Indicate the relative amount of information the viewport displays, as a ratio of the total content

Patterns for page composition - Scrolls

- Ant patterns
  - Do not allow users to become lost in the scrollable area. Especially be sure to not allow scrolling single-axis lists so far that no content is visible.
  - Consider anchoring secondary axis scrolling to an edge when scrolling on the primary axis. Two-dimensional scrolling is often very difficult to achieve with precision.
  - For touch and pen devices, avoid drag-and-drop interfaces, or other interactions that require dragging an element within a scrollable area. If required, consider multifinger On-screen Gestures or Press-and-Hold interactions as a method to initiate a mode switch.

Patterns for page composition

- Annunciator Row
  - You must provide an easily discovered display of the status of important hardware features such as battery level and network connections.
  - Annunciators are lights, gauges, or sounds that indicate system status. Annunciator lights and panels date to the dawn of electrical devices.
  - The term was carried over to electronic design, and then to mobile OS design. Though the same feature is often referred to as a “status bar,” this typically implies some overlap with the concept of Notifications



Annunciator Row

Common icons for the vast majority of conditions shown in the Annunciator Row. All items are enabled and at maximum graphical mode.

This is an example; some are in conflict with one another, so this would never be seen. From left to right: Mobile network, WiFi, Bluetooth, NFC, Airplane mode, Audio level, Locked, Clock, Network activity and speed, Voicemail waiting, Synch, Location, USB connected, and Battery status.

Annunciator Row

- Icons do not indicate the presence of a feature, but the status of that feature.
- No display means the icon is not functional, and displaying the icon means it is enabled. Optionally, disabled features may be displayed as grayed-out icons.
- This can be beneficial to communicate the availability of some features. Use caution to ensure that these are clearly disabled under all lighting conditions.

Annunciator Row

- Items are grouped by basic functionality. A conventional order has arisen, from left to right:
  - Radios:
    - Mobile networks
    - WiFi
    - Bluetooth enabled, and active
    - NFC or contactless payment enabled
    - IrDA or other nonwired networking as available
    - Airplane mode
  - Input and output:
    - Volume, vibrate, or silent mode
    - Screen or keyboard locks enabled
    - Network activity
    - Network speed
    - Message Waiting Indicator for voicemail, unless this is displayed by the notification area instead
    - Synch status or activity
    - Location services enabled; may or may not indicate when GPS is active
    - USB cable connected

Annunciator Row

- Power:
  - Usually a single item, which changes based on charge level and state (e.g., being charged)
  - A second battery indicator, as may be displayed on those now-rare devices with outboard (piggyback) or secondary batteries

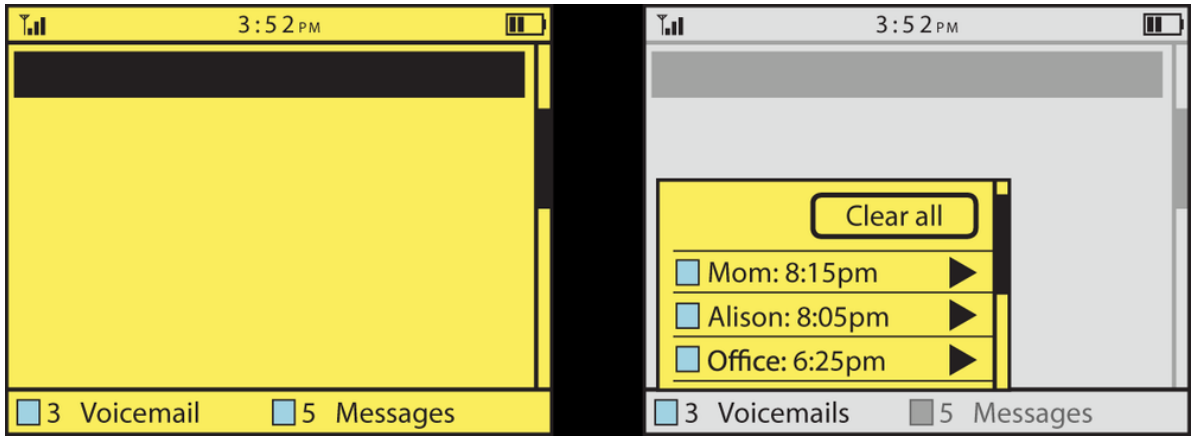
- The time of day (and sometimes the date) is also present, but may be in any of several places in the row. The most common is centered, followed by right-aligned. Time is always displayed, even on those few devices without an otherwise permanently visible Annunciator Row.

Annunciator Row

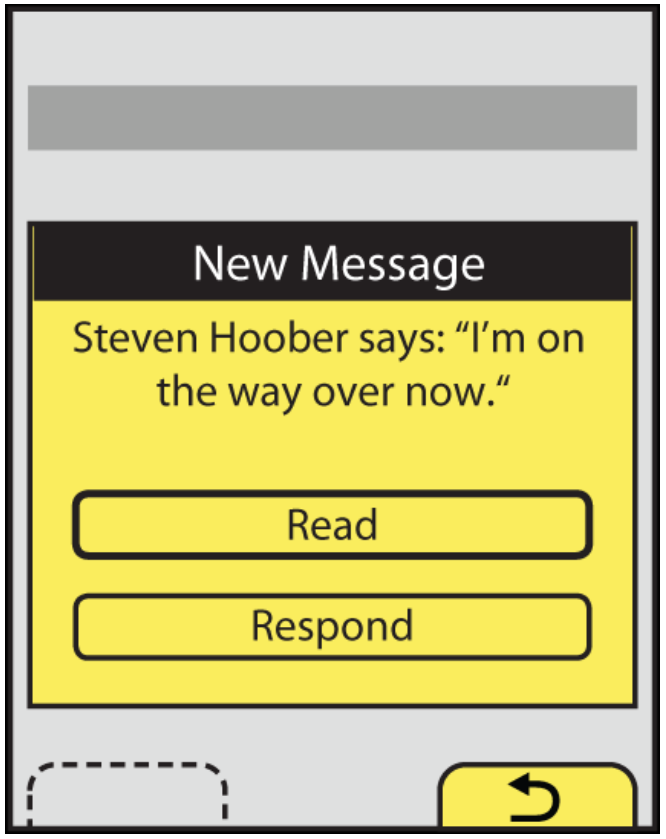
- Don’t let the order or size of the row, or the details of the icons, change with different screens. Use one layout and one type of icon in all situations.
- Don’t reinvent the wheel. Reuse existing good design concepts so that users do not have to relearn your icons.

Notifications

- You must provide a method to notify the user of any notifications, of any priority, without unduly interfering with existing processes.
- Since mobiles generally have limited space, and notifications must usually be assumed to be secondary to the current process, even a dedicated notification area should be out of the way. When the notification area is selected, allow users to access more information, as on the right, where each item is described further.



Notifications



When the Annunciator Row is used to access notifications, tapping or dragging the row will reveal the list of notifications.

You should choose a method for the reveal gesture that is based on other gestures used in the OS, so it is discoverable and understandable when described and demonstrated.

Notifications

- Do not display notifications serially. If more than one is received at a time, use a multiple-notifications method, instead of showing one single notification after another.

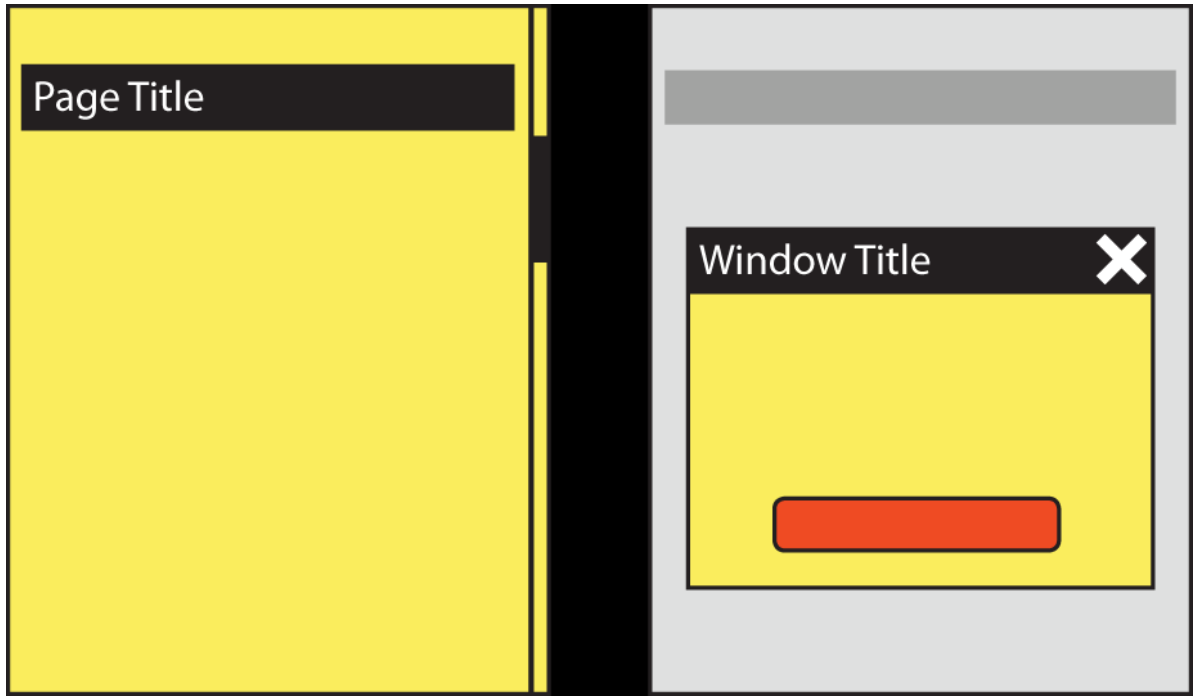
- Do not allow notifications to prevent access to other systems, even temporarily. The notification system must allow individual notifications as well as all current notifications to be dismissed.

Notifications

- Most media-centric activities, such as video playback, should not be interrupted by notifications. Very high-priority notifications may still interrupt, but must either pause playback or be very **non disruptive** so that playback can continue during the notification.
- **Never display notifications to external display devices**, such as TVs or projectors attached to the device.

Tiles

- Titles are a key part of all OSes, applications, and web standards, but it is always up to you to include them in the design in the appropriate manner.



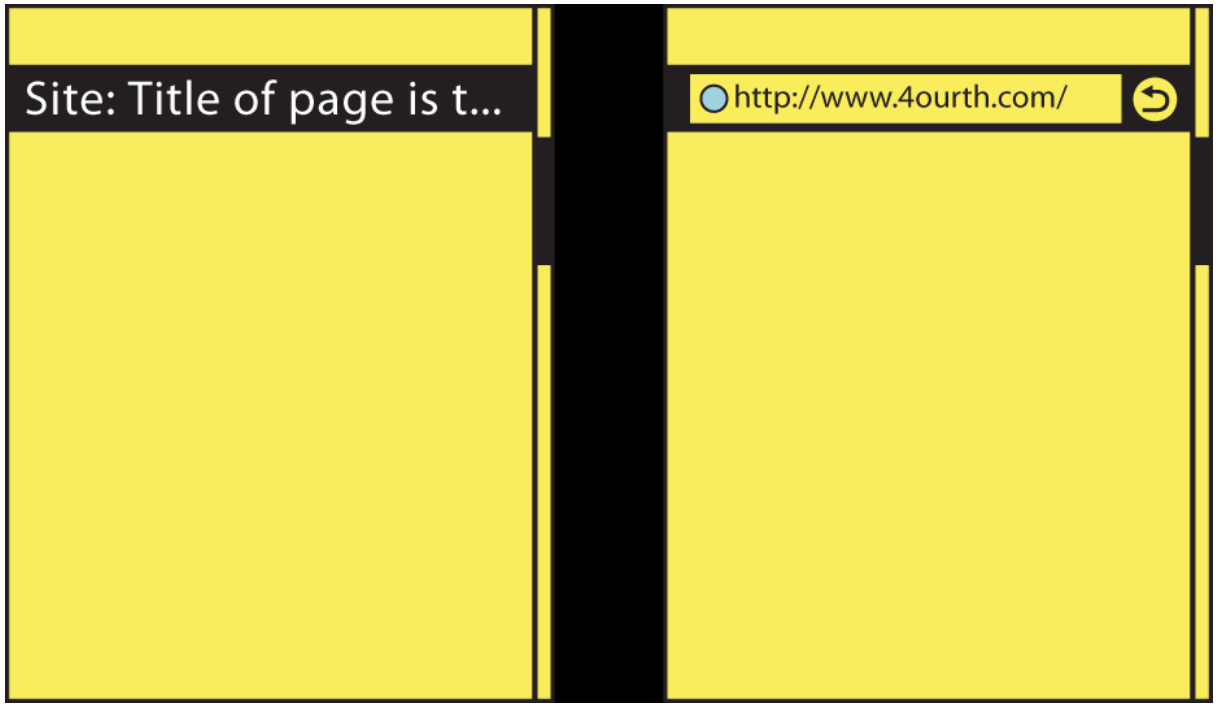
Tiles

- Pages and elements or content sections within a page should almost always be labeled.
- Titles are always horizontal, and any top-level title should be boxed, or otherwise separated out to make it clear that it is a key element.
- Subsidiary titles are also text, but the text can be stylized as needed (bold, color, etc.) or additionally include boxes, rules, indents, or other graphical treatments to differentiate them from the remaining content, and to more clearly communicate their hierarchy.

Page titles

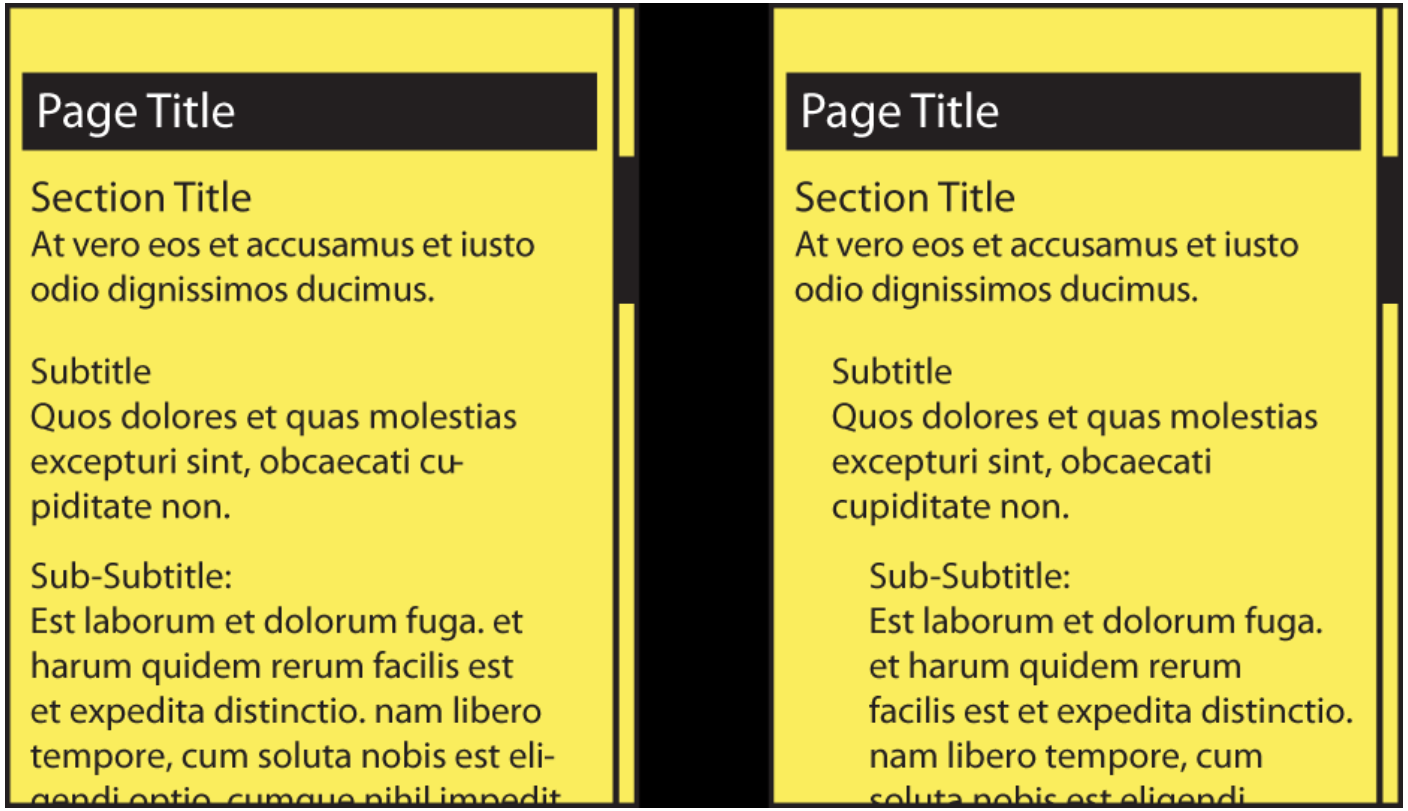
- Page titles can be selected, by tap or drag usually, to reveal alternative information or functions.

- Here, within a web browser, the page title can be selected to show and edit the URL, and perform other browser functions.



Page titles

- Build all content with a hierarchy and title sections to follow, and express this to the end user.
- Use the same voice and, when practical, tense.
- Use a single name for your product, when it has to be referred to at all.



Page Tiles

- Avoid jargon, or exposing internal processes. Avoid excessively harsh error messages, and other things which may confuse or annoy typical users.

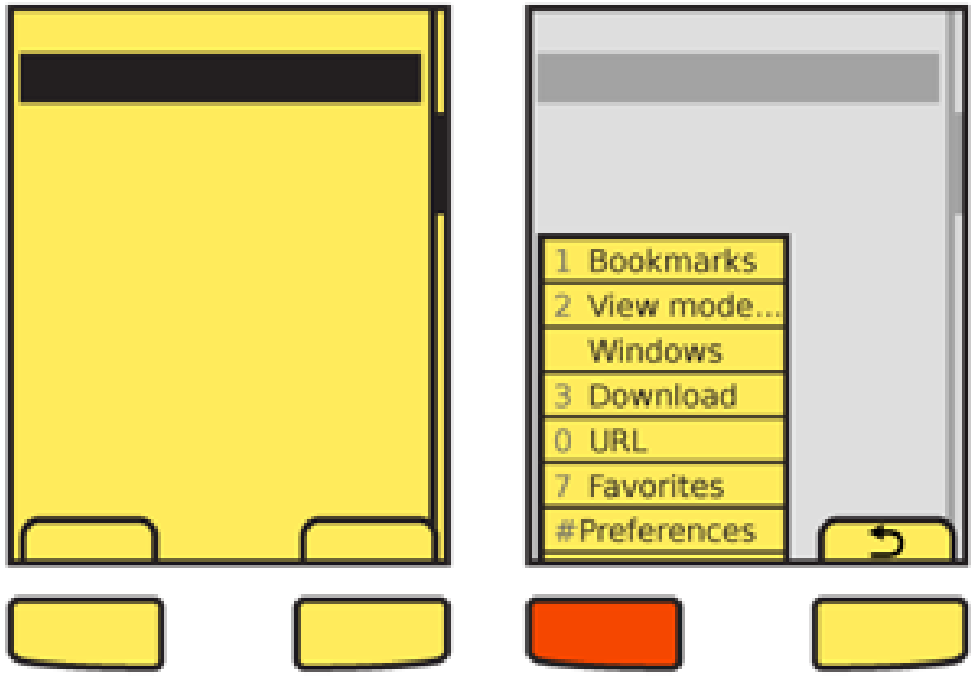
- Do not repeat content. If the application is described adequately, do not keep restating the application name in subsidiary page or Pop-Up titles.

- During testing, and periodically as maintenance, be sure to check all content. Often, only mockups or the primary path is inspected, but alternative paths and errors must be as clear, consistent, and well described as any other parts of the product.

Revealable Menu

- You often will not be able to fit all functions for a page on the screen. A method must be provided to access these optional functions.

- When the user selects a key, a small on-screen element, or performs a gesture, an option menu is displayed with content relevant to the current state of the application.



Releavable Menu – Variations

- The Softkey (hardware buttons tied to on-screen labels, typically on featurephones) style uses one or more hardware buttons (or a portion of the touch/pen area outside the display) to reveal an option menu.
  - They may or may not display a tab and label indicating the presence of this menu when closed.
- Softkey-like on-screen displays always display a tab or button, usually along the bottom edge of the viewport.
  - The closed state is always visible as this is the method used to access the function

Releavable Menu – Variations

- Gestural menus generally have no on-screen visibility.
  - When the user swipes from an edge, the menu acts as if it accompanies them. This is generally non-persistent, and when the pen or finger leaves the screen, the menu collapses.
  - Selections must be made in the same pen/finger-down gesture as the original reveal. Releasing while an action is in focus selects that action.
- A fourth variation combines gestural menu reveal methods with the on-screen button.
  - When activated, the menu appears via another action such as sliding in from one side, or being revealed to be behind another component (such as by hiding an otherwise-present virtual keyboard).

Home And Idle Screen

- All mobile devices have an Idle Screen, originally used when the device was not doing anything (it is idle). This is used as a launching point or when the user is not specifically asking anything of the device.

- If you are designing kiosks or other more-constrained interfaces -- which present a smaller number of fixed options -- the default screen is still considered an **Idle Screens.**

Home And Idle Screen

- The Idle Screen is the single screen which is loaded when the device is powered on, or when all applications are exited.

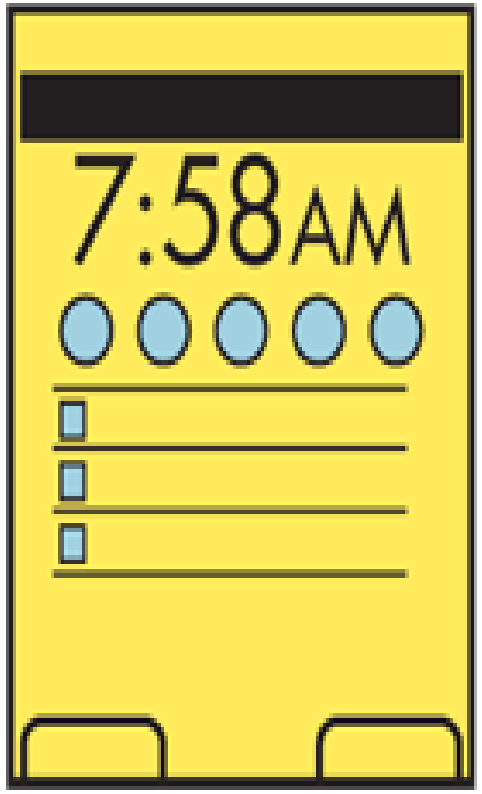
- The Home Screens, often notably plural, encompass all the device-level menus that contain links to the applications. The Idle Screen is invariably one of these Home Screens.

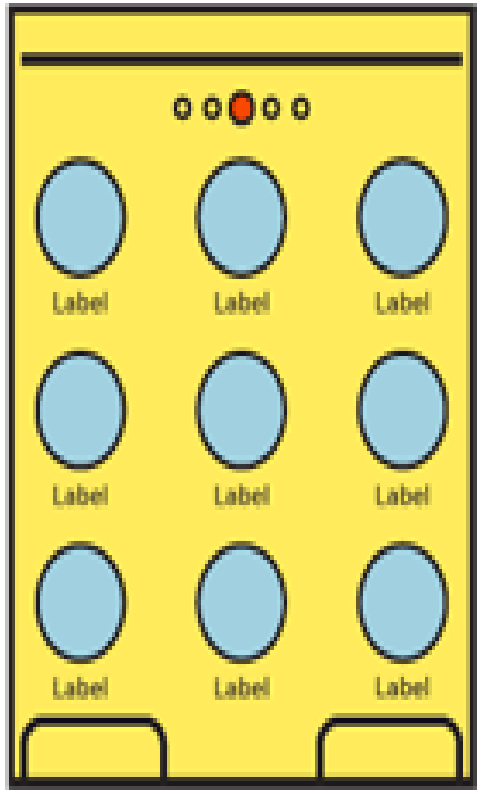
Home And Idle Screen

- Idle Screens generally follow one of two patterns:
  - The Idle Screen is **largely occupied with status information** and may have little or no direct access to applications.
  - The Idle Screen is the center one of a series of related screens with iconic representations of many or all of the applications loaded onto the device, **generally displayed as a Grid with the Film Strip pattern used to move to and between other Home Pages**.

Home And Idle Screen

- Additional features may be integrated into the Home & Idle Screens, such as lists of running applications, displayed as thumbnails of their current state or as a list of icons.
- Some of these additional uses of the home screens expand the interactivity to provide access via gestures perpendicular to the primary access.





Lock Screen

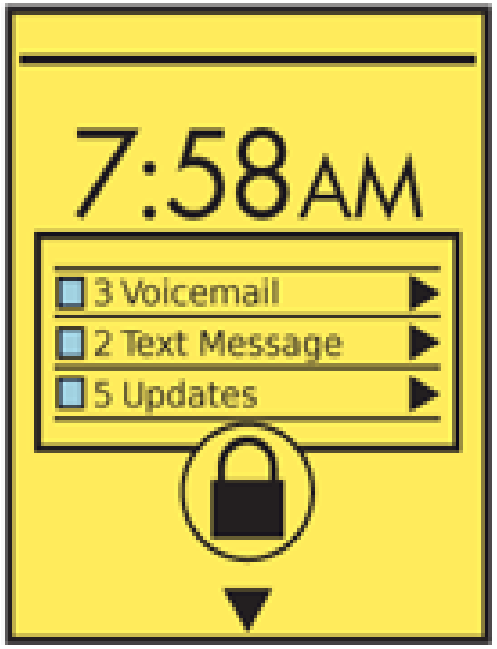
- Mobile devices must enter a lock/sleep state to reduce power consumption, prevent accidental input, and sometimes to prevent unauthorized input.

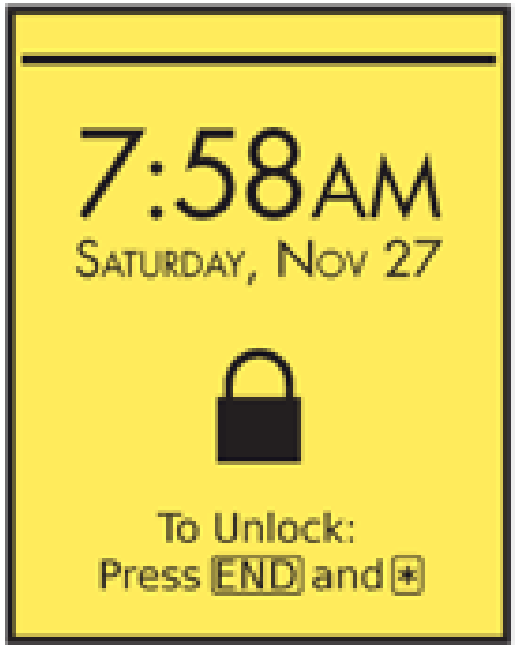
- When the device is locked or sleeping, a Lock Screen or "Sleep Screen" will be displayed. You should display key information about the device, or the context which provided the lock function, such as events, alerts, time and date, and instructions on how to unlock the device.

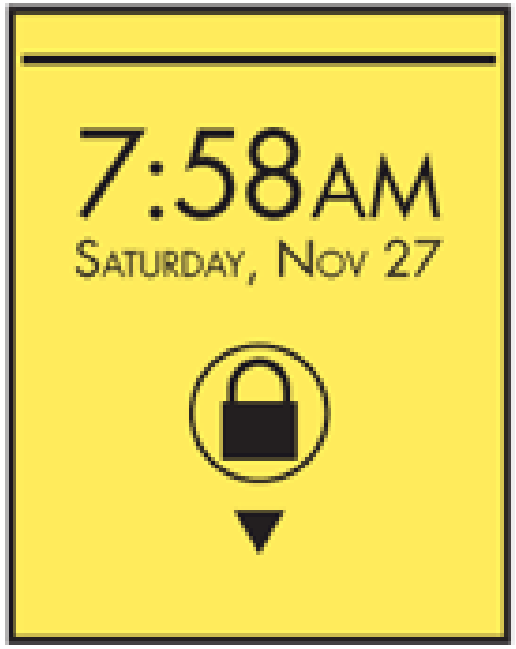
Lock Screen

- Lock screens are useful to prevent input, and power consumption is a real issue, but many lock screens go overboard.
- Backlight should be minimized or removed, but display drivers left on. In the past, most every device had a retroreflective screen, which could be read in ambient light.
- Clever design can illuminate just a few pixels, at low power, and display all relevant Lock Screen information at a very low power level, combining it with a Sleep Screen.
- Locking does not imply exiting or suspending applications. Even activities such as voice calls may continue when the Lock or Sleep Screens have activated.
- On the Lock Screen you will display the time of day, the complete Annunciator Row and any information or gesture targets to instruct or assist the user in unlocking.

Lock Screen


7:58AM
3 Voicemail
2 Text Message
5 Updates


7:58AM
SATURDAY, NOV 27
To Unlock:
Press END and *


7:58AM
SATURDAY, NOV 27

Interstitial Screen

- You should use the Interstitial Screen pattern when: There is a technical limit that prevents display of the previous context. This is commonly encountered when starting the device, or when applications are loaded.

- Within an application, site or process, the content presented will change enough that a clean break is required. Switching users, or changing or initiating information filtering (including some searches) are the types of situations that can cause this.

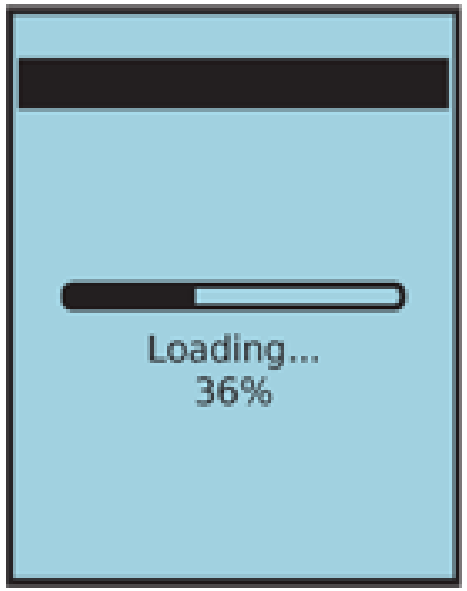
Interstitial Screen

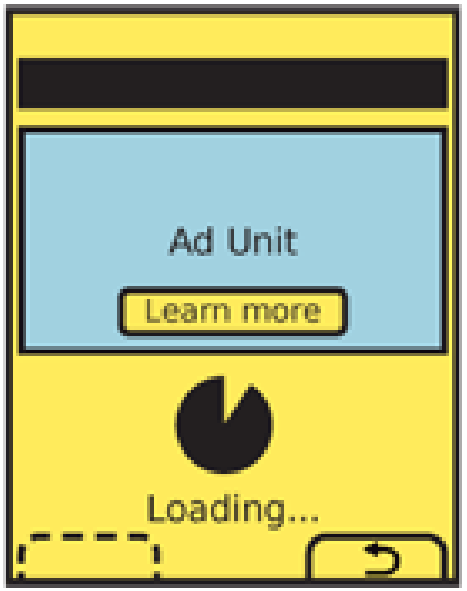
- The interstitial is primarily a loading process screen. Whenever possible, you should use a Wait Indicator which occupy a small portion of the screen, or are within Pop-Up dialogues to indicate a delay.
- Only two types really exist:
  - The Loading screen, which you can use when an app is loading or some other major change in state occurs. This screen is about context change, and you should very clearly label the service being loaded, to include major branding. There is more tolerance for vague timing, and simple "Loading" indicators may be tolerated.
  - You may load a Wait Indicator on top of this, and prevents access to the actual content, but it can trick the user into believing a speedier load process has occurred due to the amount of content on the page, and the customization.

Interstitial Screen

- The second type is the the in process screen, displayed when a delay is encountered inside an application, site or process.
- In many cases, the key reason you use the Interstitial Screen is to indicate to the user how hard the service is working, so it is clear the user-submitted action was accepted, and to emphasize the value of the service.
- The Interstitial Screen is usually described as a required step, and does not have any interaction itself. Key device features such as the ability to switch applications or exit back to the Idle Screen should not be disabled.

Interstitial Screen





Advertising

- Many sites, applications, and even entire mobile services are ad sponsored. If required to place advertising into a product, you must not try to hide them away, nor make them so prominent they damage the user experience.

- Advertising in mobile must be:
  - Clearly differentiated from the content.
  - Clear, readable, legible and interactable.
  - In the same place, and used in the same way, on each screen and in each state.
  - Unobtrusive enough to not interfere with the interaction of the actual product.
  - Easily actionable, so users can take advantage of the offer.

Advertising

- Display the ad in a manner that clearly differentiates is from the actual page content. There are three basic ways to accomplish this:
- Place the ad on a shaded, tinted or colored background. Usually, the background should extend the full width of the page.
- Separate the ad from the rest of the content with rules, which must run full width, or a closed box larger than the ad.
- If the ad is slightly smaller than the screen width (by using one size smaller than the suggested size for the screen) use different alignment than the content. If content is left aligned, right align or center the advertising.

Advertising

- DO'S AND DON'TS OF ADVERTISING
  - When conducting user research, be sure to include real ads and do not carefully pick them to match the design. Borrow from competing sites if needed, but get realistic advertising or your test will be invalid.
  - Do not make ads too large, so the content is difficult to read. This is especially key for small screens using docked advertising space. If this could be a problem, then switch to the in-line style.
  - There is almost never a reason to place a text label such as "advertising" next to the banners. This should be able to be communicated with design. If not, fix the design, instead of wasting space with labels.

Advertising

- DO'S AND DON'TS OF ADVERTISING
  - You should almost never animate advertising. This will distract from the core content of the application or other process. If absolutely required, use animation very carefully, and sparingly.
  - Make sure advertising in scrollable areas does not induce "false bottom" errors, and make the user believe the end of the page content has been reached prematurely.
  - Do not use custom sizes for any banners. Advertisers will generally not go to the effort of making new sizes. All services you sign up for require abiding by their guidelines, so your revenue base will be severely limited.

Advertising