Designing for the mobile form factor

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Overview

- Characteristics of a great UI
- Why mobile is different
- From design to implementation

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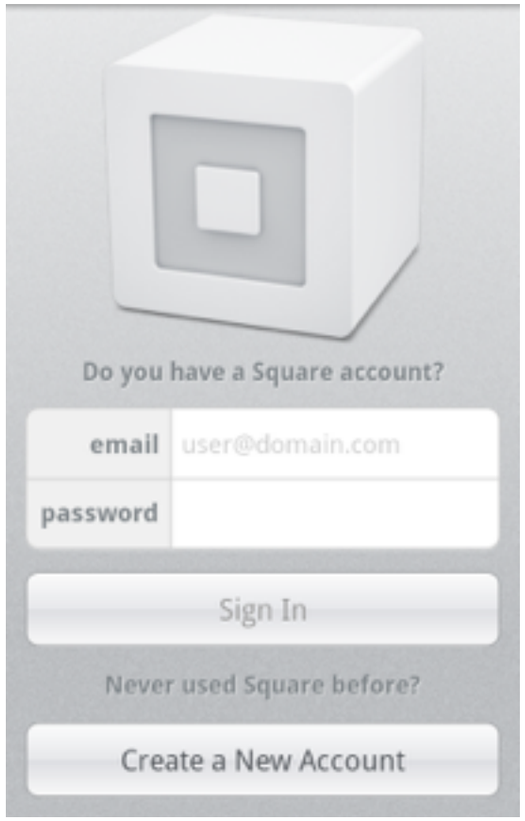
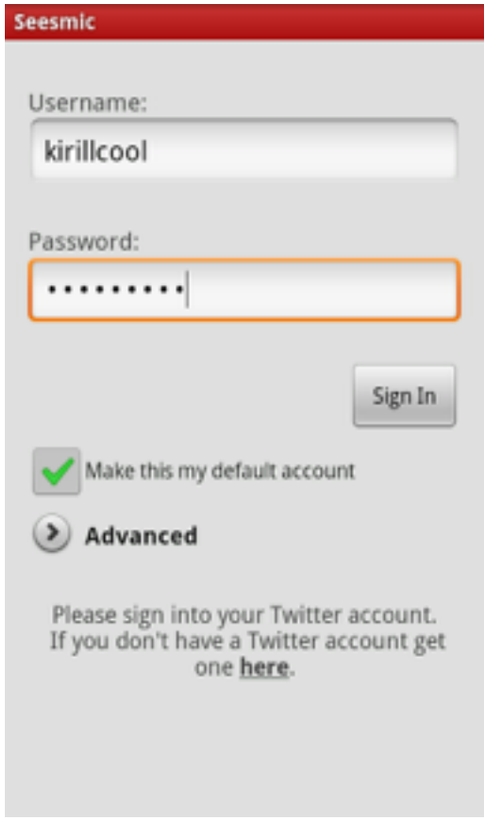
What is a great UI?

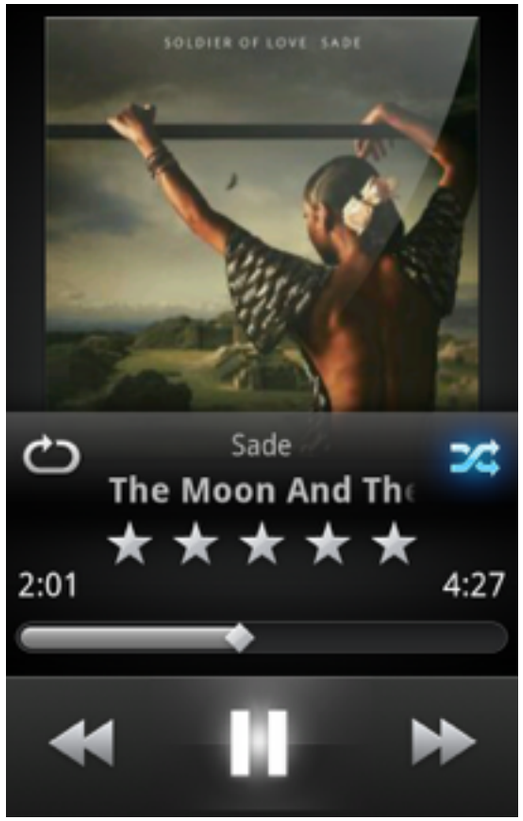
- User friendly
- Responsive
- Polished



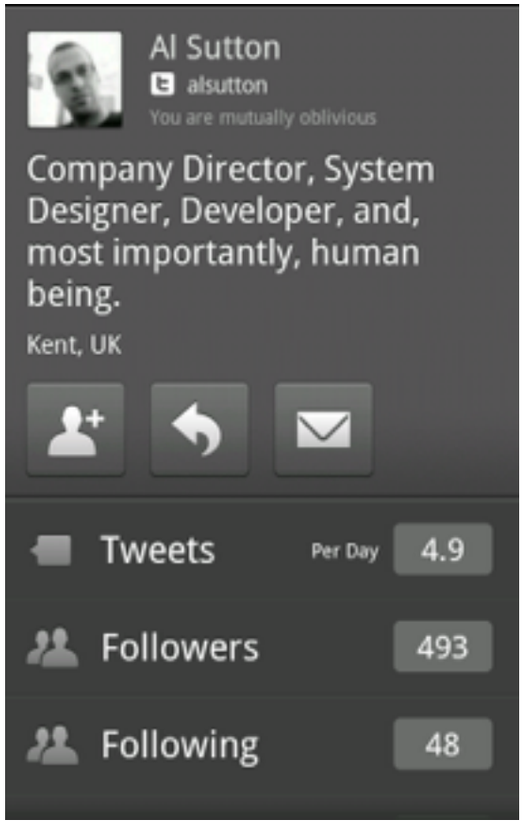
Square



Seesmic



doubleTwist



TweetDeck

User friendliness

- Simple flows that assist in completing tasks
- Task-oriented instead of feature-oriented
- Guide the user instead of fight the user
- Build on user's knowledge of the domain

Responsiveness

- Visual confirmation of a user action
- Long tasks not blocking the UI
- Progress of long running tasks

Visual polish

- Visual appeal as important as functionality
- Macro-level as well as micro-level
- Visual consistency to anchor the flows

Is mobile different?

- Similar problems
- Similar solutions
- Different form factor

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Form factor

- Smaller screens, bigger controls
- Rotation and ratio change
- User interaction
- Screen density
- Limited resources

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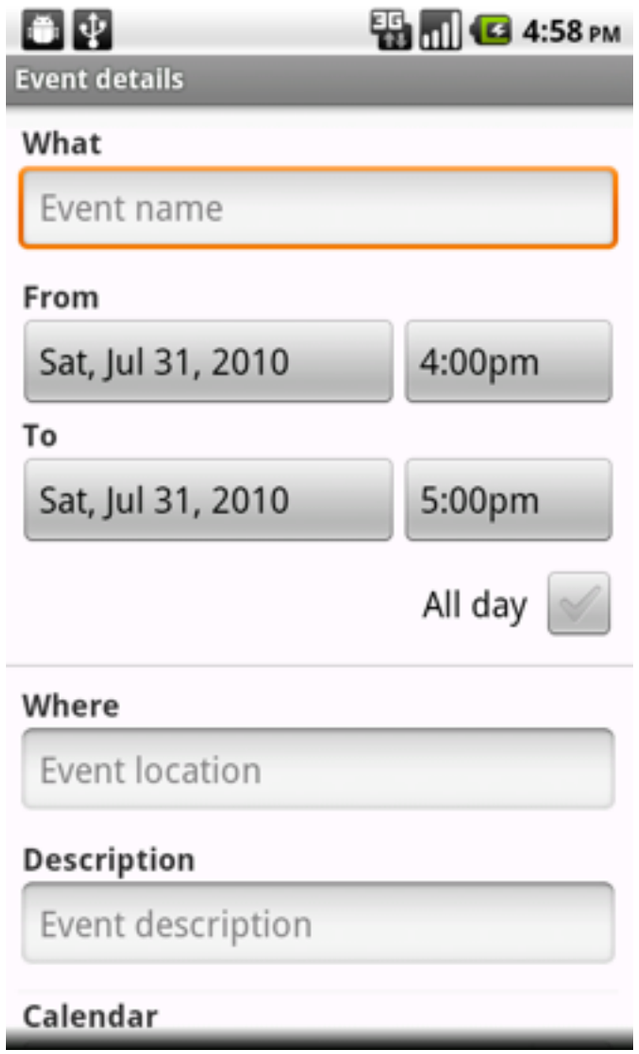
Screen size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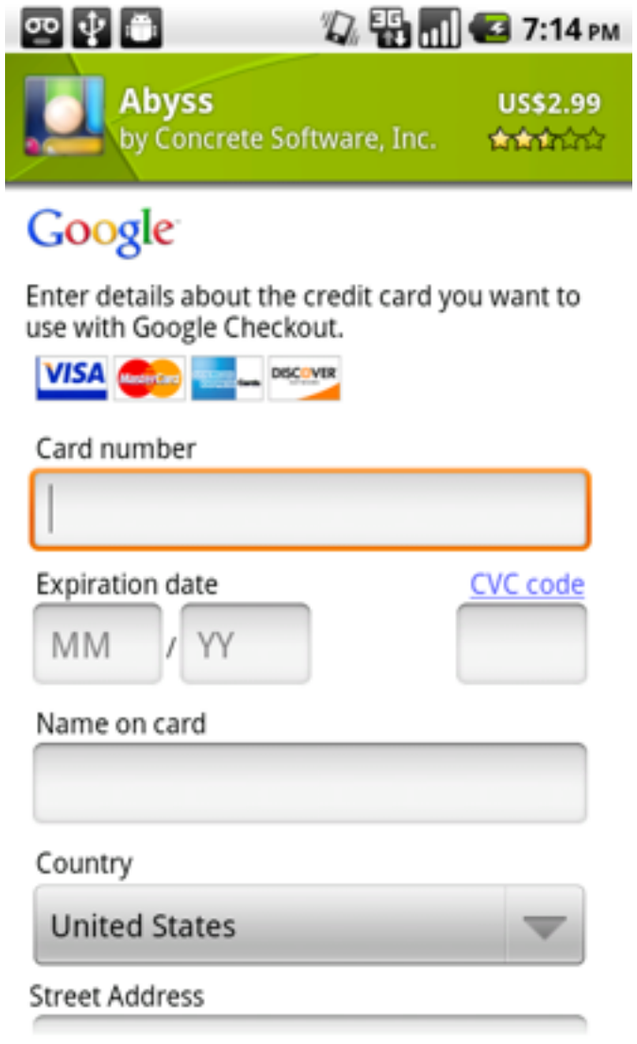
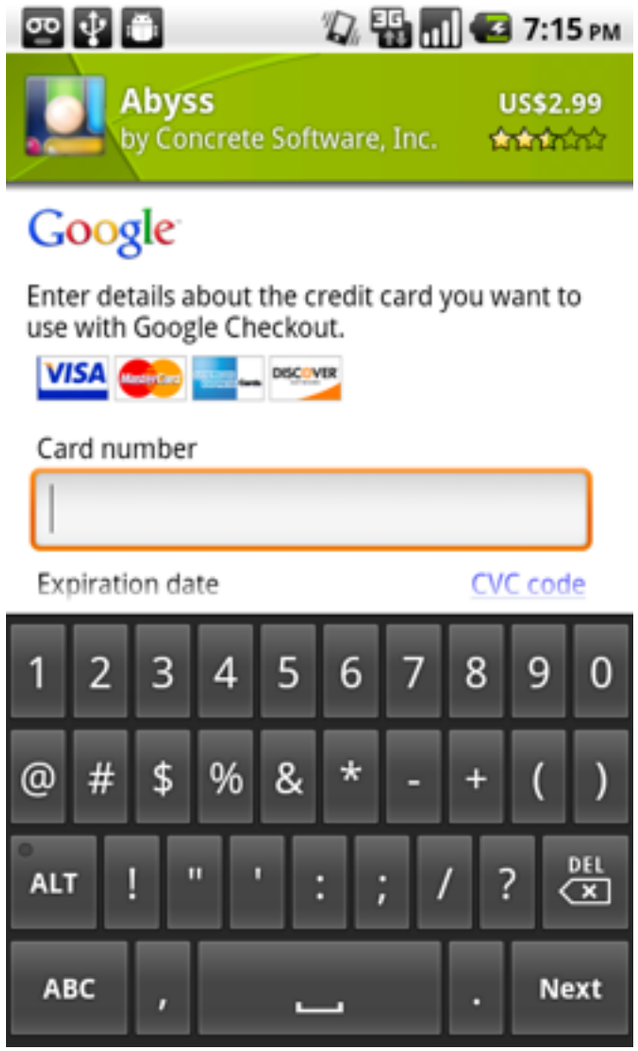
Event details
What
Event name
From
Sat, Jul 31, 2010
4:00pm
To
Sat, Jul 31, 2010
5:00pm
All day
Where
Event location
Description
Event description
Calendar


7:14 PM
Abyss
by Concrete Software, Inc.
US$2.99
Google
Enter details about the credit card you want to use with Google Checkout.
Card number
Expiration date
CVC code
MM
YY
Name on card
Country
United States
Street Address


7:15 PM
Abyss
by Concrete Software, Inc.
US$2.99
Google
Enter details about the credit card you want to use with Google Checkout.
Card number
Expiration date
CVC code
1 2 3 4 5 6 7 8 9 0
@ # $ % & * - + ( )
ALT ! " ' : ; / ? DEL
ABC , . Next

Screen size

- Finger interaction
- Small controls - user frustration
- Onscreen keyboard - even less space for controls

Screen size

- Hide optional controls
- Split long forms into separate screens
- Annotate fields for better keyboard modes

Form factor

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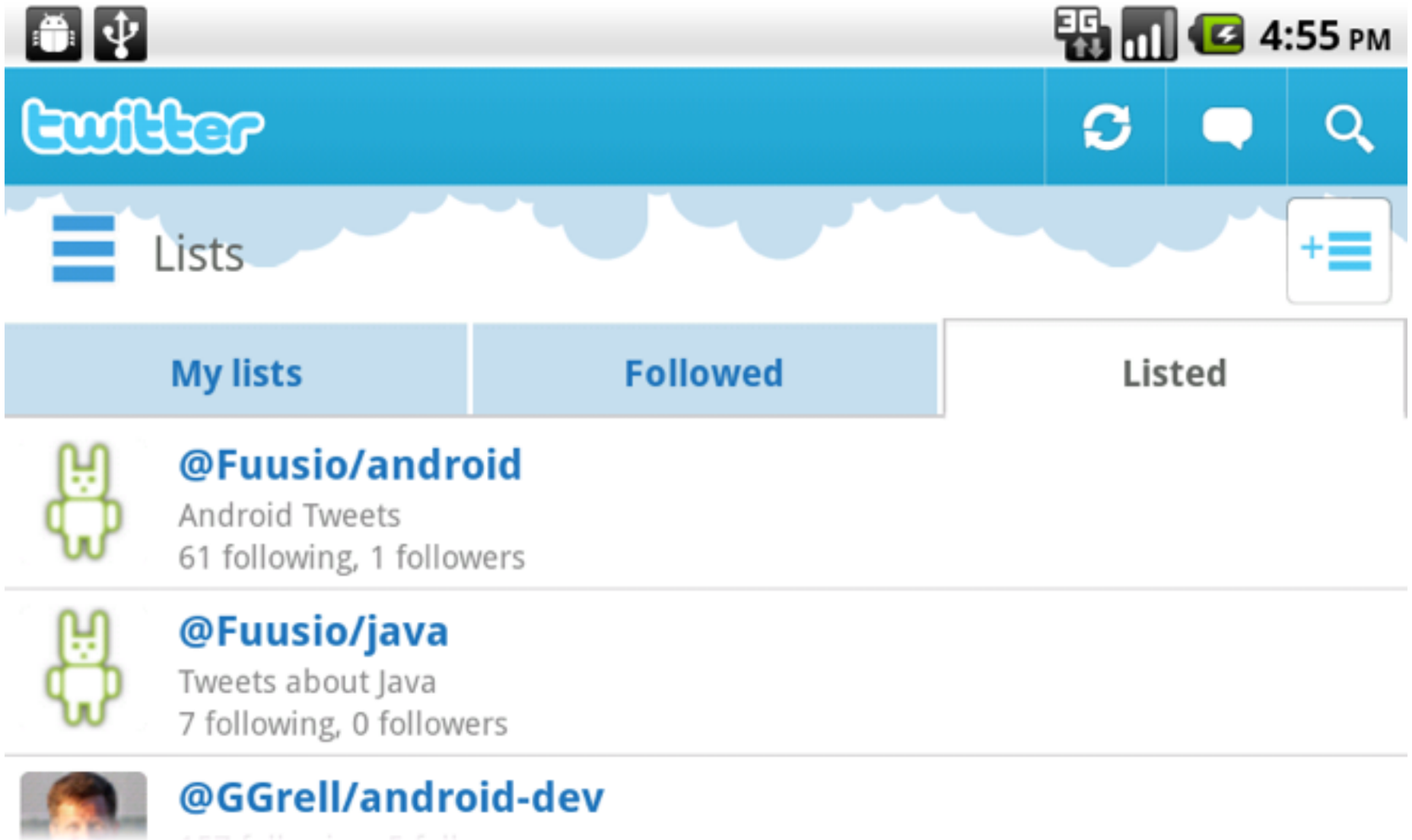
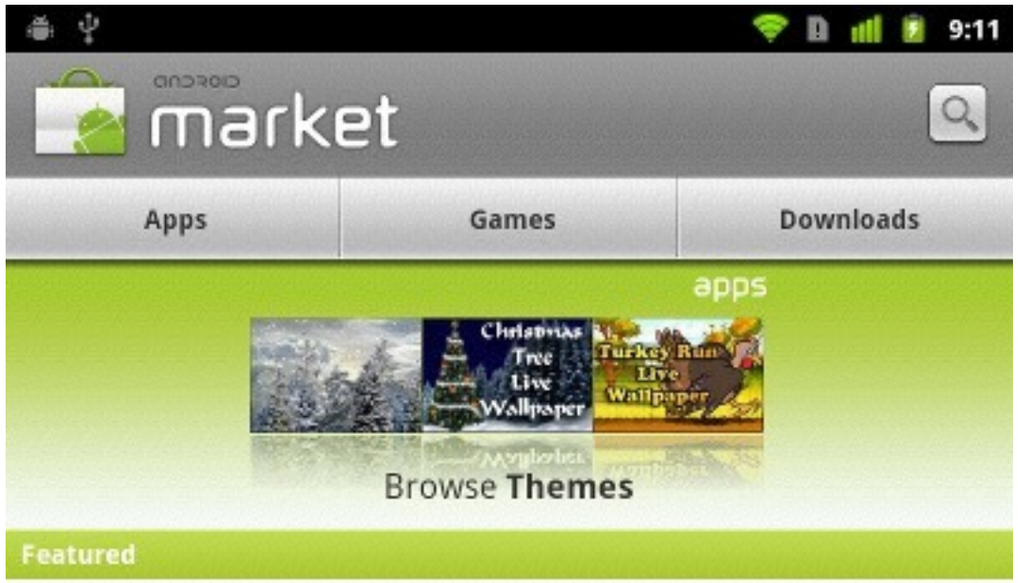
Rotation

- Smaller form factor
- No desktop “rigidity”
- Different “natural” orientation
- Varying user preference

Landscape mode



Landscape mode



Landscape mode

- Don’t blindly reuse portrait layout
- Action bar / footer - precious vertical space
- More actionable content above the fold
- Don’t leave gigantic unused “holes”
- But don’t cram too much content either

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User interaction

- No mouse. No stylus. No rollovers.
- Optional physical keyboard.
- Touch is king.

Touch

- Touch modes
- Tap / long press / move / fling
- Multi-touch
- Pinch / zoom / rotate / tilt

Touch


Steuart St
Justin
Herman Plaza
Chaya
Osha Lounge
Sue Bierman Park
Gateway
Apartments &
Town Homes
Pier 14
The Embarcadero
Boccalone
Boulette's Larder
Mijita
Ferry Plaza
The Port of
San Francisco
Pier 3
Il Cane Rosso
SF Ferry Bldg


Szechuan Gourmet
Koi Sake Bar
Bryant Park
Crumbs 42 Street
W 46th St
W 42nd St
Bryant Park Grill
Public Library
Public Reltns
HSBC Bank
New York
Public Library
State of New York
5th Ave [7]
Pret A Manger
E 40th St
5th Ave

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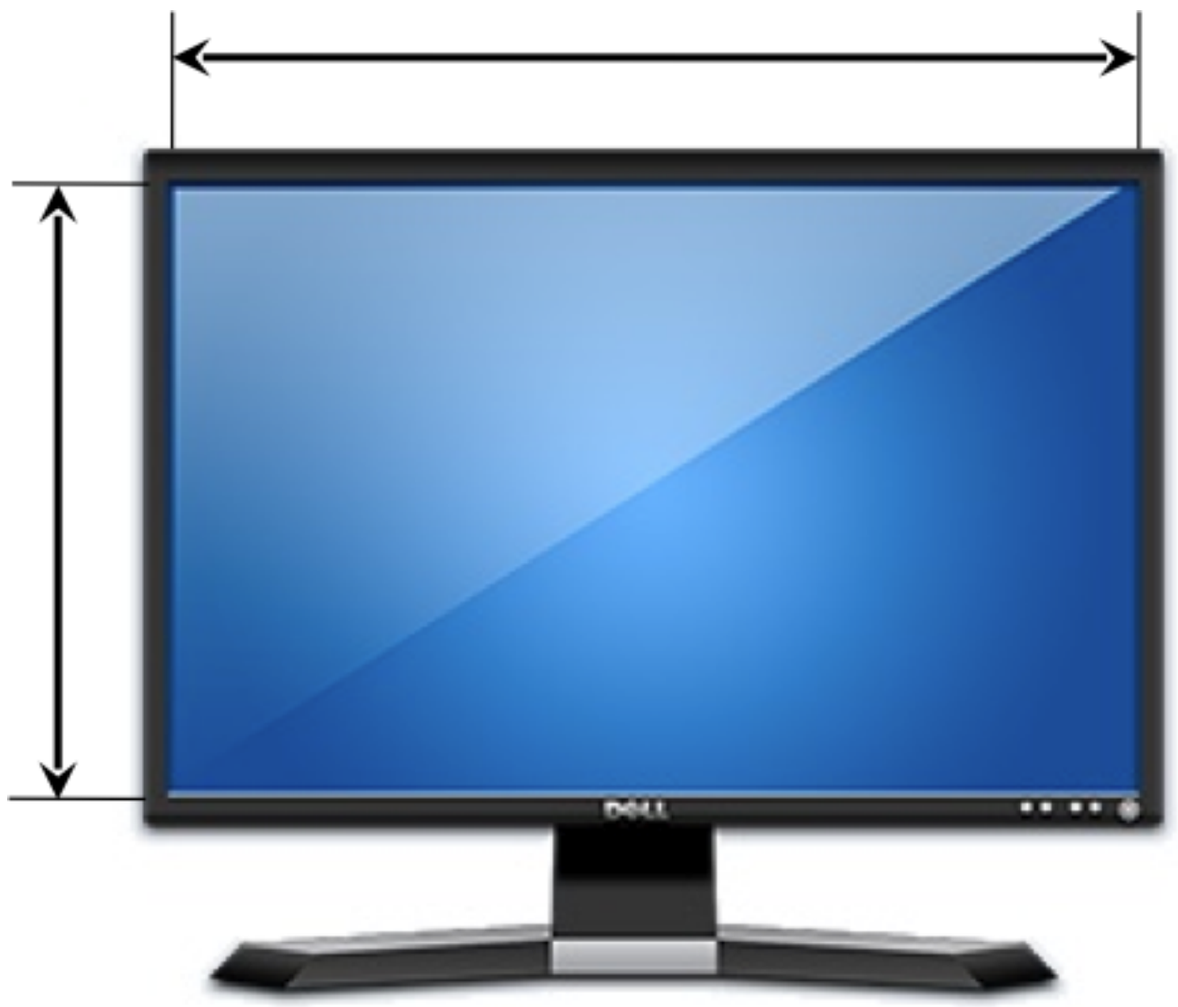
Resolution / DPI

1280 pixels / 13.3 inch

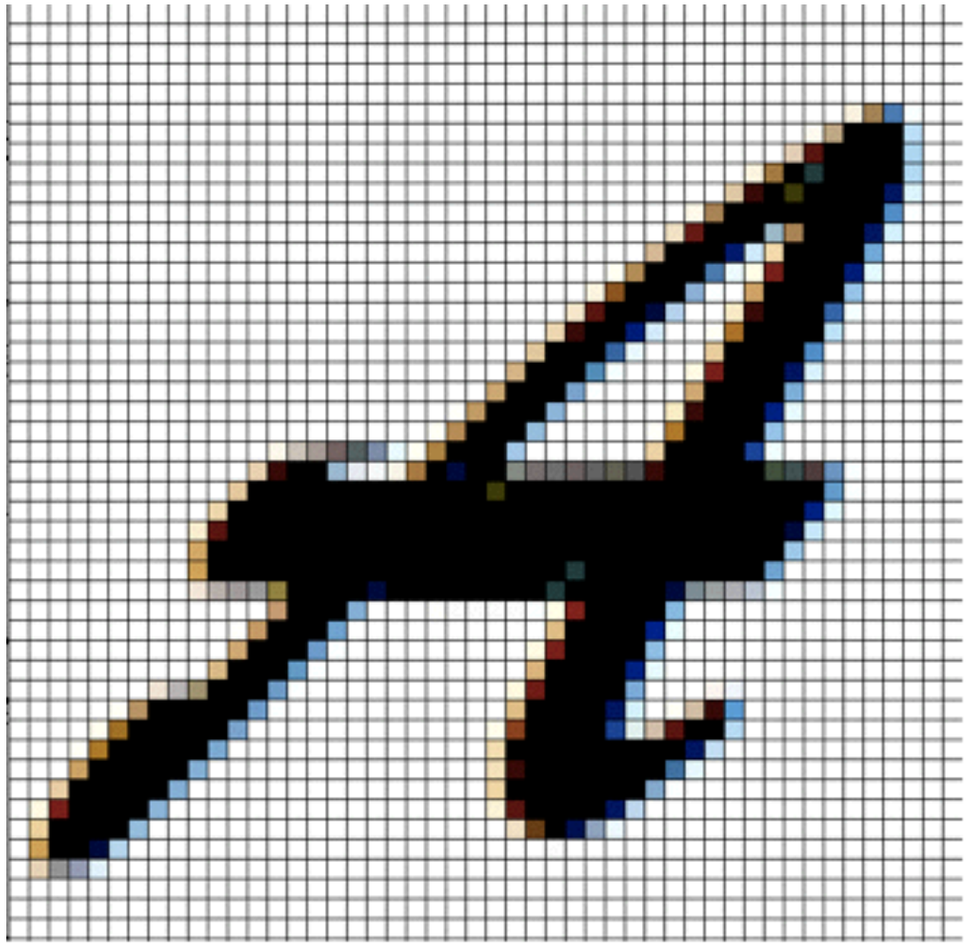


800 pixels / 8.3 inch

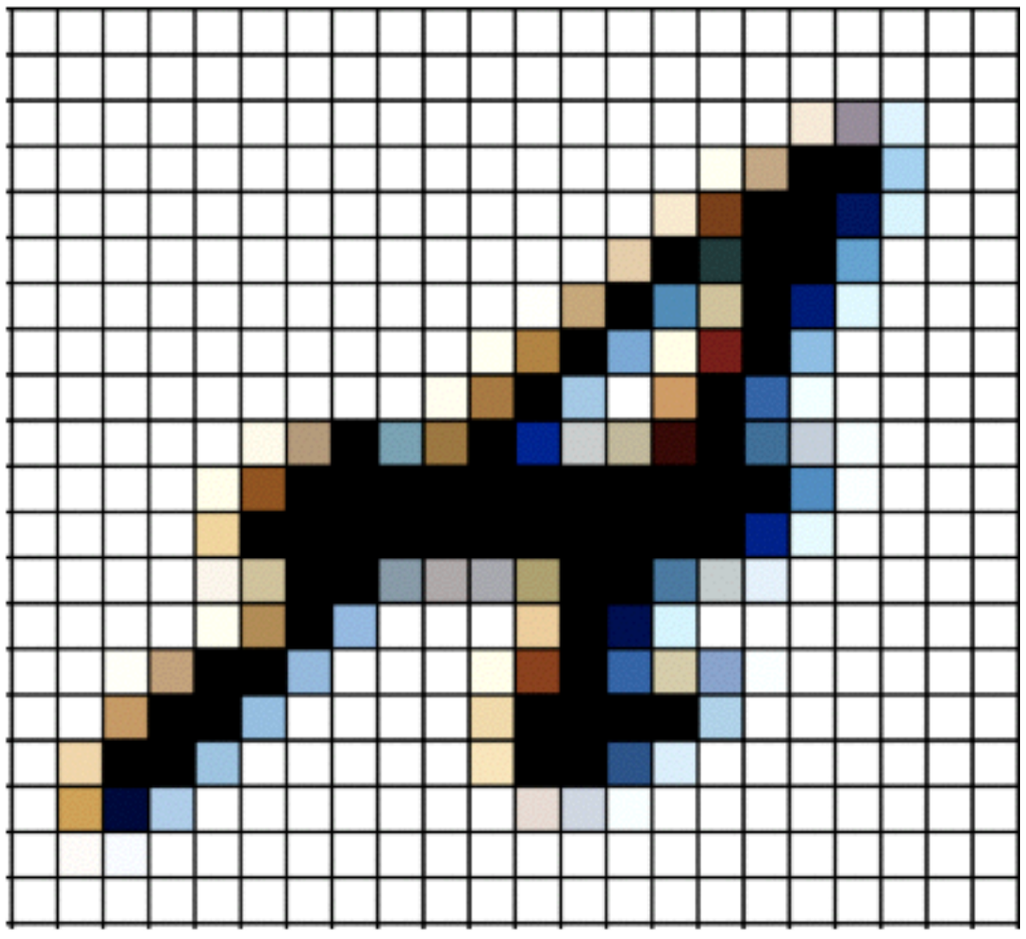
800 pixels / 8.3 inch = 96 pixels per inch

Artwork by studiomx.eu

Resolution matters



300dpi



96dpi

Screen density - LDPI

Motorola Charm

Sony Ericsson
Xperia X10 Mini

Motorola Citrus

Motorola Flipout

HTC Tattoo

HTC Wildfire

Screen density - MDPI

Motorola Charm

HTC Magic
(myTouch 3G)

Motorola CLIQ

HTC Droid Eris

Motorola Backflip

HTC Aria

Screen density - HDPI

Motorola Droid

Sony Ericsson Xperia X10

Samsung Nexus S

HTC Nexus One

HTC Evo 4G

HTC G2

100% difference between LDPI and HDPI

Screen density

- No hard coded pixel values
  - Use dips and DisplayMetrics
- No single set of images
  - Bundle multiple resolutions

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Resources

- Less powerful CPUs
- GPU / hardware acceleration optional
- Much less memory

Resources

- Large bitmaps - out of memory errors
- Frequent allocation of small objects - garbage collection pauses
- Use DDMS and “Allocation tracker” tab

Mobile is different

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What is a great application?

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- Responsive
- Polished

But much more important

A clear, simple,

user-oriented goal

Design process

- Formulate and finalize the product goal
- Identify major scenarios
- Build user flows
- Pixel-perfect visual design
- Implementation

User scenarios

- IA, IaD, UxD, UX, HCI
- Define features (not the other way around)
- Sketch high-level wireframes
- Define consistent navigation model

As the implementor

- Know hard platform limitations
- Identify layouts, components, event handling
- Flesh out major building blocks
  - anchor areas, navigation controls, interaction patterns

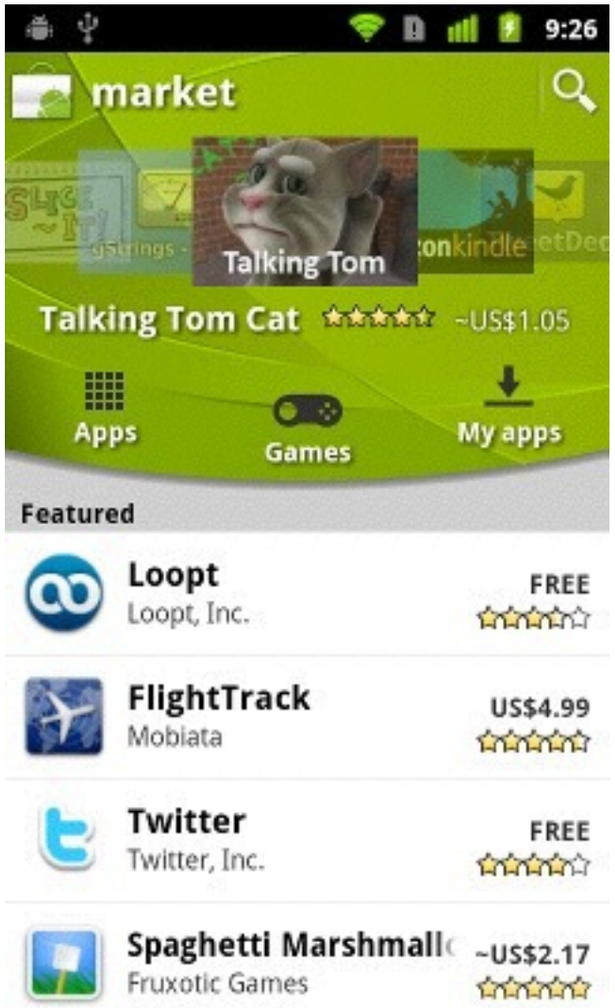
Visual design

- Colors, textures, typefaces, layouts
- Lighting models, anti-aliasing, drop shadows, soft edges
- Translucency, overlapping, non-rectangular components

As the implementor

- Know hard platform limitations
- Weigh performance considerations
- Consider target hardware limitations (colors, memory, screen size, ...)
- Two-way communication and early validation

Pixel perfection



- Visual separation between sections
- Layout depends on the screen size

Pixel perfection

- Thumbnail drop shadow
- Text drop shadow
- Vertical alignment
- Scaling text size to fit

Working with designers

- Know the platform capabilities and limitations
- Trust that interaction and visual designers know what they're doing
- Engage early and often
- Provide specific feedback
- You are not the user

Below the surface

- UI layer is just one piece
- Data models, persistence, wire protocols, caching, binding
- It's easy to "cut corners" on pixel level

Remember what's important

What is a great UI?

- User friendly
- Responsive
- Polished

Everything else can be good enough

Q&A

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