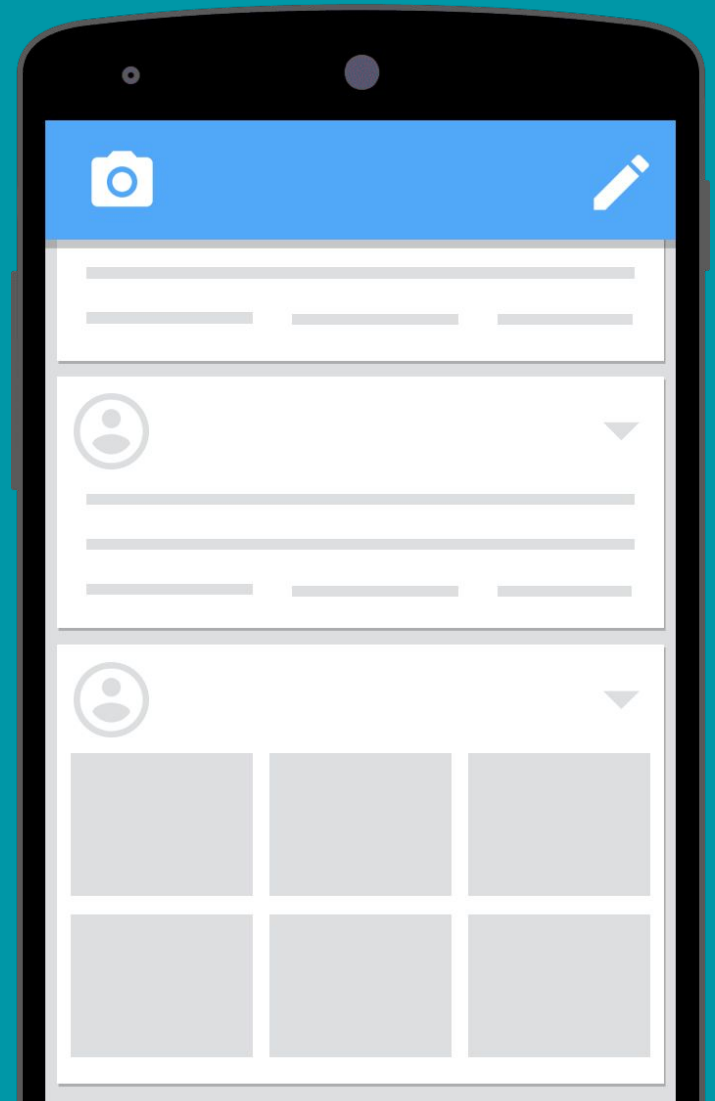


Mobile Computing

Eric & Steve



First, Some Numbers

- 82% of American adults own a cell phone¹
- Estimated 2.32 billion smartphone users in 2017²
- Majority of media consumption is on mobile
- 350 million pictures uploaded to Facebook daily³

[1]<http://www.pewinternet.org/2010/09/02/cell-phones-and-american-adults/>

[2]<https://www.statista.com/statistics/330695/number-of-smartphone-users-worldwide/>

[3]<https://www.theatlantic.com/technology/archive/2015/11/how-many-photographs-of-you-are-out-there-in-the-world/413389/>

History of Mobile Technologies

- 1993 - IBM Simon - first smartphone
- 1996 - Palm Pilot - first “tablet”
- 2002 - Microsoft released Tablet PC
- 2007 - Apple iPhone released
- 2007 - Google released Android
- 2010 - Apple iPad released
- 2012 - Microsoft surface released
- 2014 - Various Android watches released
- 2015 - Apple Watch released



<https://en.wikipedia.org/wiki/Smartwatch>

https://en.wikipedia.org/wiki/History_of_tablet_computers

http://www.pcworld.com/article/199243/a_brief_history_of_smartphones.html

http://cdn02.androidauthority.net/wp-content/uploads/2012/11/IBM_Simon.jpeg

Why mobile computing is great

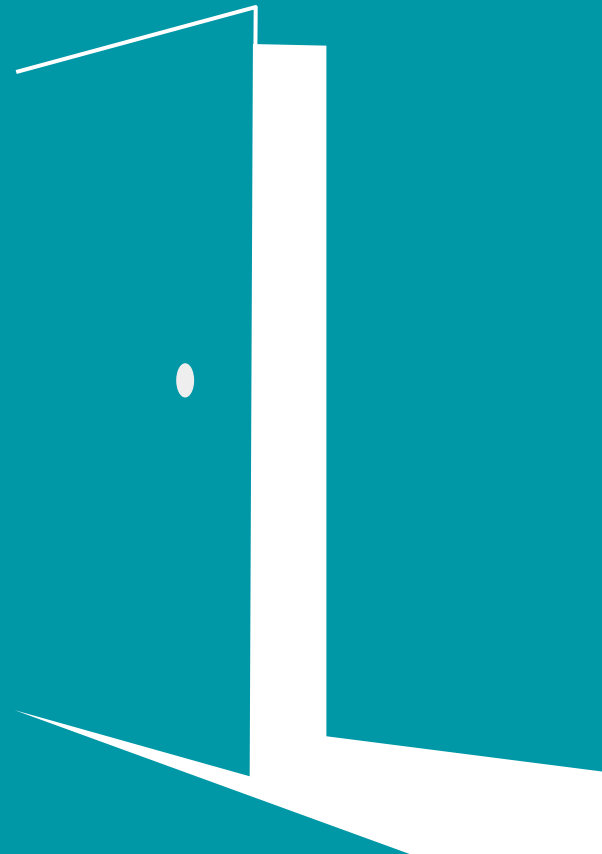
- Instant access to information
- Allows people to communicate from anywhere
- Provides entertainment when we need it
- Makes life extremely convenient
- Empowers you to live a healthier life
- Help people find love
- Used as educational tools
- Revolutionized business practices

Analysis Rubric

1. What are the facts?
2. What are the moral issues?
3. Who is affected by the decision you have to make?
4. What are your options?
5. What are the expected outcome of each possible action?
6. What are the personal costs associated with each possible action?
7. Where can you get some help in thinking through the problem?
8. And the bottom line?

Backdoors

- Built into phone software
 - Android service to remove and install apps²
 - iPhones swap SSL certificates with your computer¹
- San Bernardino, CA^{3,4}
 - iPhone 5C recovered by FBI
 - Apple refused to supply a “backdoor”
 - FBI spent > \$1m to gain access



[1]<http://www.techtimes.com/articles/10970/20140723/ios-backdoor-entry-is-real-says-jonathan-zdziarski-not-for-nsa-says-apple.htm>

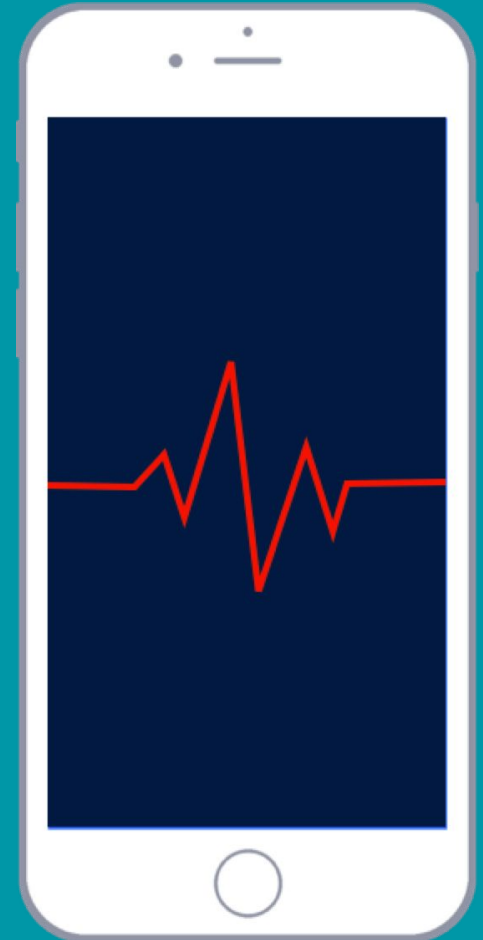
[2]<https://www.gnu.org/proprietary/malware-mobiles.en.html>

[3]<http://www.bbc.com/news/technology-36110236>

[4]<http://www.latimes.com/local/lanow/la-me-ln-fbi-drops-fight-to-force-apple-to-unlock-san-bernardino-terrorist-iphone-20160328-story.html>

Health Data

- 67% of Nurses use personal phones for work
 - 88% of hospitals
- 6-14% of nurses sending client data
- Sending personal data
- Someone's life vs. someone's privacy



Snapchat

- Former Playboy playmate body-shames overweight woman in gym locker room¹
 - Charged with invasion of privacy
- What if this happened in a public place?
 - What if it was an ordinary person?
- Why do we take pictures of random people?
 - Is it OK if they go away?



[1]<http://www.latimes.com/local/lanow/la-me-body-shaming-20161104-story.html>

Location Data

- 62% of people allow tracking¹
- A study done by HP showed 90% of the business apps it tested has security and privacy flaws³
 - Sent user data unencrypted and insecurely
- Goldenshores Technologies sold user location data without telling users³
- Please Rob Me²



PLEASE ROB ME



[1]<http://www.geekwire.com/2014/study-majority-people-dont-mind-sharing-location-apps/>

[2]<http://pleaserobme.com/>

[3]<http://www.computerworld.com/article/2486596/mobile-apps/are-your-smartphone-apps-selling-you-out-.html>

Use the ethical examination methods we discussed in class to determine whether or not each of the following scenarios is ethical.

1. A suspected human trafficker is arrested by police. When they try to look for incriminating text messages on his phone, they find that it's been encrypted and they can't access the data. The police contact the phone manufacturer to request a backdoor into the phone, but the company refuses. Is it moral for the company to impede the police investigation in the interest of user privacy? Why or why not?
2. A nurse at a hospital gets off her shift. When she arrives at home she receives a text message on her personal phone from the nurse who replaced her (a good friend). The text is asking a question about the medication of the patient she spent the day with. Is replying with the patient's information an ethical action? Why or why not?

3. You're walking uphill to go to class on a snowy morning and you see someone slip and roll into a bush. Your friends would find this hilarious, so you take a Snapchat of the person in the bush and send it to them. Was that an ethical action? Why or why not?

4. A social media company starts a new service that broadcasts users' locations to the world when they arrive at a landmark or popular location. The feature can be disabled, but it is turned on by default. This is stated in the terms of service. Is this an ethical policy for the company to have? Why or why not?