



Ubiquitous data

...we work with it all the time:

- Data is collected any moment of your life
- Data is stored, copied, transmitted, deleted, edited.
- Computers perform operations on data
- Data enters and exits through sensors
- We can measure it!
 - 1 bit = '0' | '1'
 - 1 Byte = 8 bits
 - 1 KiB = 1024 Bytes, 1MiB = 1024 KiB, 1GiB = 1024 MiB, 1TiB=1024 GiB, 1PiB = 1024 TiB, ...





How much is?

- 1 KiB?
 - Paragraph of text
- 1 MiB?
 - 4 Mega pixel JPEG (compressed) image
- 1 GiB?
 - One hour of SD TV or 7 minutes of HDTV
- 1 TiB?
 - 2,000 hours of audio (uncompressed), 17,000 hours of MP3s
- 1 PiB?
 - Enough data to store the DNA of the entire population of the US – three times!



(Cal) Clicker Question

What do you think is the biggest data overall?

- a) Text
- b) Images
- c) DNA
- d) Videos
- e) Census Data



Big Data

- Netflix is said to use 1 PB to store the videos for streaming.
- World of Warcraft is stored on 1.3PB to maintain the game.
- Internet Archive: About 10PB
- AT&T transfers about 30PB of data through its networks each day.
- YouTube processes about 40PB of videos a day.
 - Multimedia data is the biggest data!

