Randomness and Google Earth

April 2, 2013

Today

- The future!
- Generating random numbers
- Putting data in Google Earth

The Rest of the Semester

- Random numbers
- Google Earth
- Regular expressions
- Web APIs?
- Twitter?
- Visualization tools?

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Random Numbers

```
>>> import random
>>> random.random()
0.9367803948981343 6
```

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```

`random.random()` returns a `float` between `0.0` (inclusive) and `1.0` (exclusive)

Write a function that reports the smallest number you've seen after running `random.random()` 20 times.

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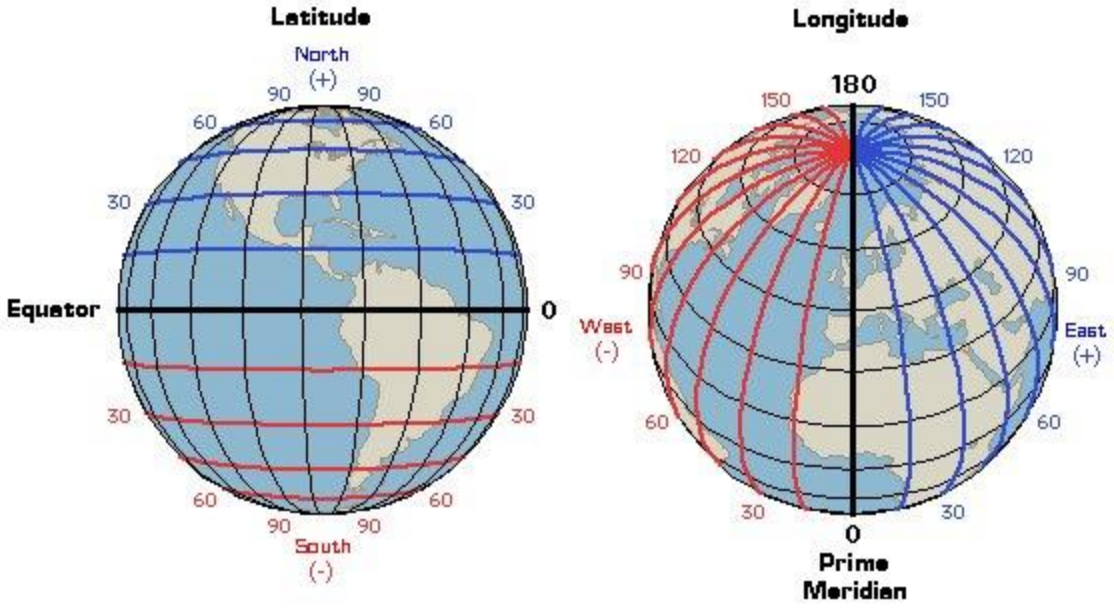
Google Earth

- If you're on a laptop, download and install Google Earth.
- Download CIT.kml and open it with Google Earth.

CIT.kml

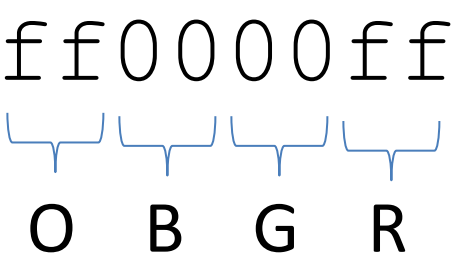
- Now open it in a text editor and try changing the following:
  - Name
  - Description
  - Size of Pin
  - Coordinates
  - What about color?



http://geographyworldonline.com/tutorial/instructions.html

KML Color Codes

O = Opacity
B = Blue
G = Green
R = Red



These are two-digit *hexadecimal* numbers.

Two-Digit Numbers

Decimal (10 digits): 0-9

00 01 02 03 04 05 06 07 08 09 ?

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Hexadecimal (16 digits): 0-9,a-f

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Decimal: $10^2 = 100$ two-digit #s

Binary: $2^2 = 4$ two-digit #s

Hexadecimal: $16^2 = 256$ two-digit #s

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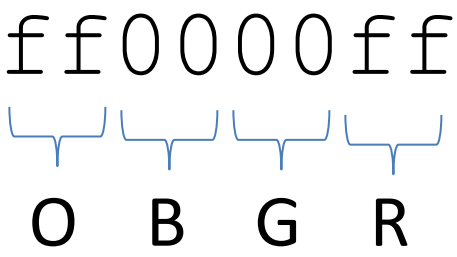

Hexadecimal (16 digits): 0-9,a-f

00 01 ... 08 09 0a 0b 0c 0d 0e 0f 10 11 ... fe ff