LECTURE 23

FALSEHOODS PROGRAMMERS BELIEVE ABOUT…

FALSEHOODS PROGRAMMERS BELIEVE ABOUT TIME

- Every day has 24 hours.

    Because of daylight saving time (DST) some days could have 23 hours and some could have 25 hours. Or some other amount of hours - whole or not.

- OK, but every day without DST changes is 86400 (60 * 60 * 24) seconds long

    Some times the UTC offset for a time zone is changed.

- If I know what time zone someone is in
    - and they just tell me the date and local time,
    - then I can always use software to find out what time that is in UTC

If they are in the middle of changing from summertime to wintertime,

the clock will be set back one hour.

This means that an hour exists twice, so to speak.

If the clock is set back to 2:00 and someone tells you that the local time was 2:17,

you do not know if they are talking about 2:17 before the clocks were set back

or 2:17 after the clocks were set back.

- Time zone rules do not change

  In 2014 there were 10 updates to the Olson database released during the year.

- If you have two UTC timestamps

  - it is possible to calculate how many seconds will be between them

  - even if one of the timestamps are a year into the future

  There might be leap seconds introduced, but you cannot be sure when or how many. However they are announced at least 6 months in advance, so if none of the two times are more than 6 months in the future and you keep up with news about leap seconds you can calculate it.

- The time 23:59:60 is always invalid

  When leap seconds are inserted, a minute will be 61 seconds long.

> Falsehoods programmers believe about time and time zones

FALSEHOODS PROGRAMMERS BELIEVE ABOUT TEXT

- text is written left-to-right

- text is written horizontally

- text can be broken down into characters that have a valid meaning on their own

- each Unicode code point corresponds to one character (for some definition of "character")

- every Unicode code point will always be displayed in the same manner regardless of context

> Let's stop ascribing meaning to code points

MORE FALSEHOODS PROGRAMMERS BELIEVE

- emails

- geography and coordinates

- postal addresses and phone numbers

- …

> awesome falsehoods

also, **don't roll your own crypto**
(unless you are a cryptographer)