CS 103000
Prof. Madeline Blount

Week 2: VARIABLES

ATTENDANCE:

https://cs103-proton.glitch.me/

Dall-E 2: cats learning C++ in the forest on '90's technology

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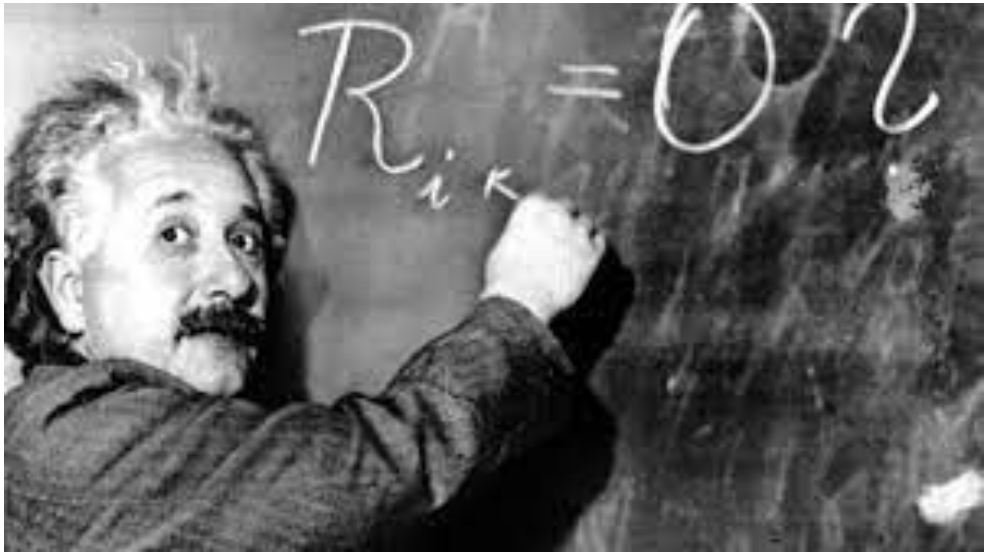
mass-energy equivalence

How much energy is locked up in a mass of given kg?

$$E = mc^2$$



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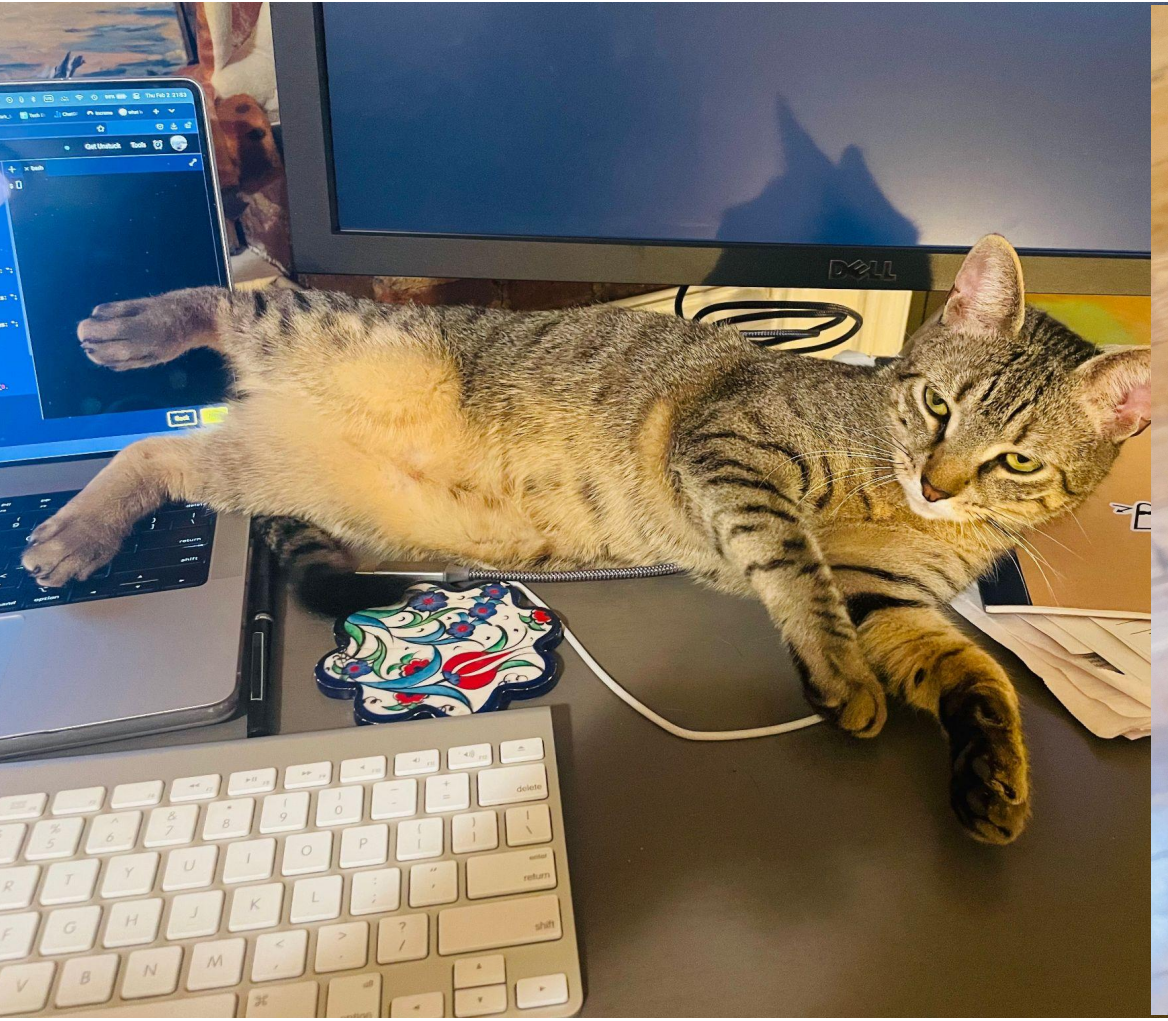
```
c = 2.99792458e8 m/s;
```

```
proton = 1.67262192 × 10^-27 kilograms
```


DELL

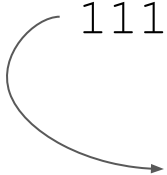
😱 INTEGER OVERFLOW: weirdness, limitations

🖥️ we don't have infinite memory!

int = 32 bits (4 bytes)

00000000000000000000000000000000

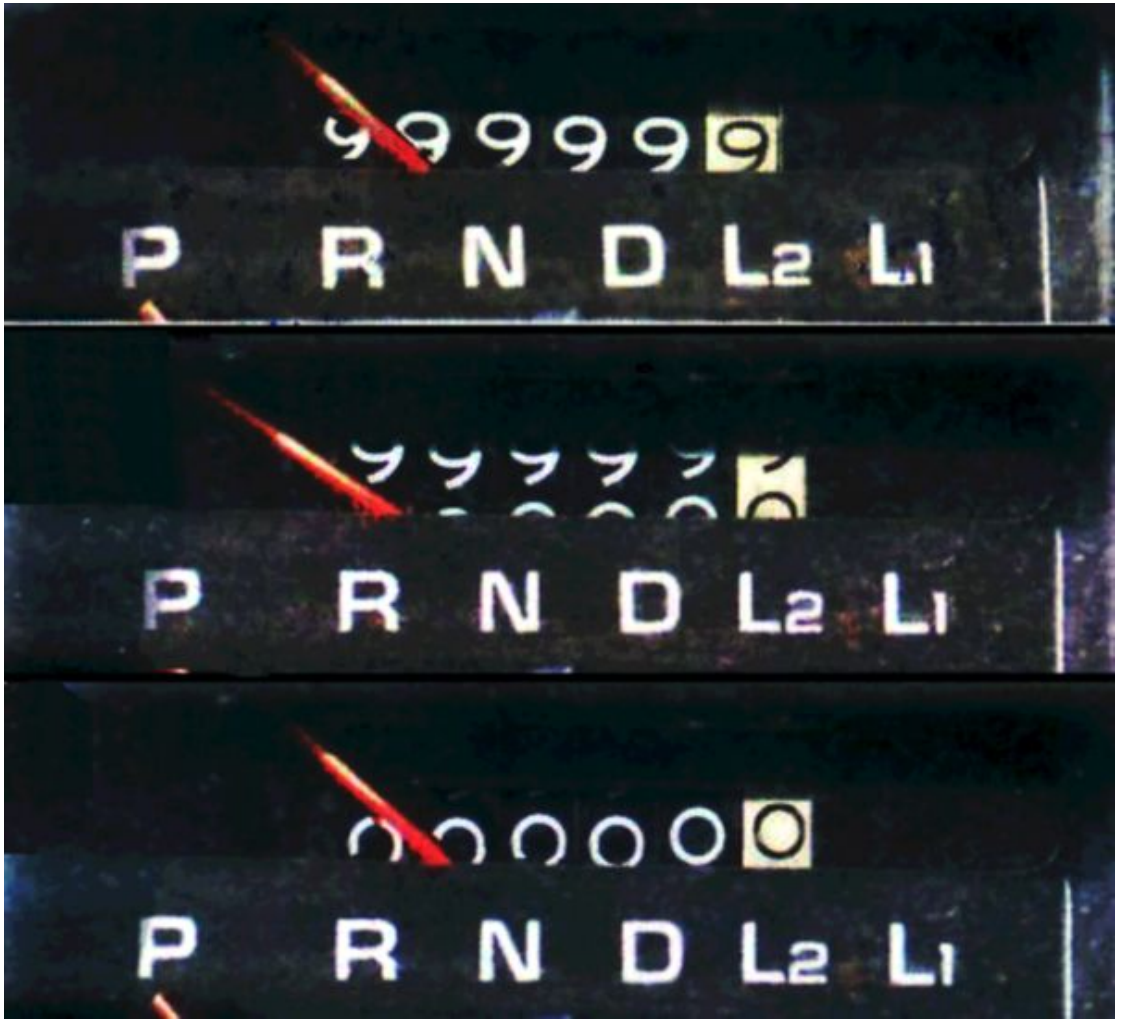
11111111111111111111111111111111



4,294,967,297

+/- 2,147,483,647

INTEGER OVERFLOW



INTEGER OVERFLOW

RUNNING OUT OF TIME!

Jan. 19th, 2038

32-bit integer seconds ++ after Jan. 1, 1970 (UNIX TIME)

Data Type	Memory Size
bool	1 byte
char	1 byte
int	4 bytes
float	4 bytes
double	8 bytes
std::string	24 bytes

```
static_cast<type>(variable)
```