credit card example

3125 6001 9643 0012

the weighted sum is 68
two digits are >4 so add 2 to sum
=70, is valid.

* ISBN numbers
  - ten digit ID
  - get weighted sum by multiplying first digit by 10, 2nd by 9, 3rd by 8, etc.
    - ↳ number is valid if evenly divisible by 11.

example: $\overset{10}{1}\cdot\overset{9}{2}\overset{8}{2}\overset{7}{9}\overset{6}{2}\cdot\overset{5}{0}\overset{4}{9}\overset{3}{0}\overset{2}{0}\cdot\overset{1}{3}$

↳ weighted sum = 157
not divisible by 11. invalid.

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monday 9/14

* Binary codes

- binary is only 1s & 0s
- message is a string of binary
- encoding is adding extra digits to the end of a message
- decoding is identifying and correcting binary errors.