- ▾ Poll

  ```python
  def km_to_mi(km):
      mi = km * 1.61
      print(mi)
  running = 10
  if km_to_mi(running) < 26.2:
      print("not a marathon")
  ```

- Goal: number guessing game

- ▾ User Input

  - ▾ built-in input function, takes a string argument to use as the prompt

    - `name = input("What is your name? ")`

  - input returns a string (text), so we have to convert it if we want a number

  - ▾ Aside: numeric data types

    - in computer science, we make a distinction between different types of number

    - integers (whole numbers) vs floating point (real or decimal numbers)

    - ▾ Why? Because the computer has to represent and handle these two types very differently

- take 208 to find out more!

- **named `int` and `float` in Python**

- ▼ **floats can be treacherous!**

  - `(2.5*0.1)*1.5 == 2.5*(0.1*1.5)` is False

  - `0.1*1.5*2.5 == 2.5*0.1*1.5` is False

  - computer can only approximate

- ▼ Python has int and float functions to convert things to that type of number

  - ▼ `payment = float(input("money inserted: "))`

    - try without float, with int

▾ Randomness

- ▼ As you've seen in Lab 1, use Python's random module

  - ▼ **pseudo-random number generator (deterministic, repeats eventually)**

    - series of numbers based on initial *seed*

    - long eventually: period of `2**19937-1`

- `random.randint(lowest, highest)` to get a secret number

▾ Practice: number guessing game

- ▼ given a player's guess and a secret number, print "cold" "warm" or "lava"

  - **only print one hint**

- repeated guesses, what should be put into a function?