POLYMORPHISM VS OVERLOADING

- Parametric Polymorphism
  - single algorithm may be given many types.
  - type variable may be replaced by any type
  - if $f : t \to t$ then $f : int \to int$, $f : bool \to bool$,

- Overloading
  - a single symbol may refer to more than one algorithm.
  - each algorithm may have different type.
  - choice of algorithm determined by type context.
  - types of symbol may be arbitrarily different.

VARIETIES OF POLYMORPHISM

- parametric polymorphism

a single piece of code is typed generically.

- imperative / 1st class polymorphism
- ML-style / let polymorphism

- ad-hoc polymorphism

the same expression exhibit different behaviours when viewed in different types.

- overloading
- multi-method dispatch
- intentional polymorphism.

- subtype polymorphism

a single term may have many types using the rule of subsumption, allowing to selectively forget information.