

Data Definition Guidelines : Structures

Example: a structure for capturing the name, weight, and favorite food for a boa

Data definition format:

```
;; A boa is a
;; (make-boa symbol number symbol)
(define-struct boa (name weight food))
```

Template format: the template pulls out all the fields from the structure

```
(define (fun-for-boa a-boa)
  (boa-name a-boa) ...
  (boa-weight a-boa) ...
  (boa-food a-boa) ... )
```

Data Definition Guidelines : Mixed Data

Example: a data definition for capturing various animals (boas, dillos, etc)

Data definition format:

```
;; An animal is
;; - a boa, or
;; - a dillo
```

Note that no `define-structs` are needed because we are only naming a set of possible animals. We are not introducing any new kinds of structures (assuming that boas and dillos are already defined).

Template format: the template does two things:

- decides which case of data we have
- pulls out any pieces of each kind of data

```
(define (fun-for-animal an-ani)
  (cond [(boa? an-ani) ...
        (boa-name an-ani) ...
        (boa-weight an-ani) ...
        (boa-food an-ani) ... ]
        [(dillo? an-ani) ...
        (dillo-weight an-ani) ...
        (dillo-dead? an-ani) ... ]))
```

Note how this builds on templates for structures: within each case, if the case captures a structure, we pull out the same information as in the template for that structure.