

```
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-- Section: CST 1-109
```

```
data Animal = Snake | Tiger | Mongoose | Wasp | Fish
    deriving(Eq, Ord, Enum, Show)
```

```
mammal :: Animal -> Bool
mammal Tiger = True
mammal Mongoose = True
mammal _ = False
```

```
data Attribute = Brawn | Speed | Wits | GoodLuck
    deriving (Eq, Ord, Show)
```

```
data Creature = Cr String Animal Attribute
    deriving (Eq, Show)
```

```
fred, rex, bella :: Creature
fred = Cr "Frederick" Fish Brawn
rex = Cr "Rex the Renegade" Mongoose GoodLuck
bella = Cr "Isabel" Tiger Speed
```

```
battle :: Creature -> Creature -> String
battle (Cr name1 sp1 att1) (Cr name2 sp2 att2)
    | att1 > att2 = name1 ++ " wins!"
    | att2 > att1 = name2 ++ " wins!"
    | otherwise = "It's a draw!"
```

```
upgrade :: Creature -> Attribute -> Creature
upgrade (Cr name sp att) new
    | new > att = Cr name sp new
    | otherwise = Cr name sp att
```

```
upgradeAll :: Attribute -> [Creature] -> [Creature]
upgradeAll new (c:crList) = upgrade c new : upgradeAll
    new crList
upgradeAll new [] = []
```

