Structs with public data are dangerous

* A variable can be created with invalid data
* The data can be changed by any code after creation
* The data must be calidated with each use, since we can never be sure if its valid of not

Data validation helps if we use it.

Solution

* We prevent constructing a new struct except through our data validator
  + we call it the constructor since it constructs
  + if the data is invalid we’ll abort by throwing an exception in which case no struct is created.
* OOP
  + Encapsulation
    - Bundling data and code into a restricted container
* Java allows us to define our own general types – classes
  + We Declare the data that will be stored, and whether the data is visible outside the class or not(their visibility)
  + We declare the constructors and the methods that validate and manipulate that data and their visibility.
* Public enum Month ()
* Classes are to C structs what java enums are to C enums
  + A Class and enum may cntain
    - Any number and any types of fields
* Public class Date{
  + Private int year
  + Private month month
  + Private int day
* }
* Constructor
  + Public Date(int year, Month month, int day){
  + This.year = year
  + This.month = month
  + This.day = day
  + “Validate data”
  + }
  + Constructors always have the same name as the class and no return type
  + Public String toString(){
  + }
* Java enum is a full-fleged class.

The class is fundamental to obect-oriented programming

* A class usually directly represents a concept in a program
* A physical item
* A logicial item
  + Transactions on credit cards
* A class is a user defined type
  + You can create variables to refer to its instancesm just like ints.

UML

* Unified modeling language
  + The uml is the standard cisual modeling language used to describe, specify, design and document the structure and behavior of software systems.
  + Can formally specify a system so that code can be generated
  + UML cn informally specify a system to enchance team communication
  + UML can casualy represent a system to enchance your understanding during implementation and maintenance