Book Class Diagram

The purpose of this document is to define a book class.   A few notes on decisions that were made in defining this class. The Publisher class I defined as a aggregation relationship. This is appropriate because while a book has a Publisher, the Publisher as a entity may exist independent of the Book. This also guided my decision to use encapsulation/data hiding in the Publisher class as it is likely that it may be used as independent entity. the Part, Chapter and Section classes each have composition relationship with each other as it is not likely that any of these entities exists with the other because these entities will not be instantiated independently I allowed them to have public attributes. To facilitate the page calculation each unit is able to report it total pages via its own total pages function. A section will call total_pages to get an int that is likely pages.length(). that will report the number of pages in the section. For chapter a call total_pages will represent a call to total_pages function of each of its sections the total_pages function returns this sum. This process is repeated for Part with it Chapters and Book with its Parts.

Publisher

- name : string
- city : string-
- state : string
- country : string
- address : string
- URL : string

+ get_name(void) : string
+ get_city(void) : string
+ get_state(void) : string
+ get_country(void) : string
+ get_address(void) : string
+ get_URL(void) : string
+ set_name(string) : void
+ set_city(string) : void
+ set_state(string) : void
+ set_country(string) : void
+ set_address(string) : void
+ set_URL(string) : void

Book

- part[] : Part
- publisher : Publisher
- publication_date : string
- ISBN : string
- title : string

total_pages(Part [])

Part

+ title : string
+ number : int
+ chapters[] : Chapter

+total_pages(Chapter []) : int

Chapter

+ title : string
+ number : int
+ abstract : string
+ sections[0] : Section

+total_pages(Section []): int

Section

+ title: string
+ number: int
+ pages[] : String

+total_pages(String []) : int