**package** document.manager;

**import** java.util.ArrayList;

Useless getters

*// public String getName(){return docName;}*

*// public Topic getTopic(){return docTopic;}*

*// public int getNumSections(){return sections.size();}*

**import** java.util.Iterator;

**public** **final** **class** Document {

**private** **static** **final** String ***OWNER*** = "Univ. Ioannina";

**private** String docName;

**private** Topic docTopic;

**private** ArrayList<Section> sections;

**private** **int** totalNumPages = 0;

**public** Document(){

docName = "noName"; docTopic = **null**;

sections = **new** ArrayList<Section>();

}

**public** Document(String aName, Topic aTopic){

docName = aName; **this**.docTopic = aTopic;

sections = **new** ArrayList<Section>();

}

**public** **void** addSection(Section aSection){

sections.add(aSection);

System.***out***.println("New section added, total # sections: " + sections.size());

}

**public** **static** String getOwner(){**return** ***OWNER***;}

**public** **void** showDocumentOverview(){

System.***out***.println(***OWNER*** + " has ths nice document titled: " + docName + " with the topic: " + docTopic.getTitle() + "\n");

}

**public** **double** computeStats(**double** hoursSpentPerPage){

**double** totalEffortToRead = 0;

Iterator <Section> si = **this**.sections.iterator();

Section s = **null**;

**while** (si.hasNext()){

s = si.next();

totalNumPages += s.getNumPages();

}

totalEffortToRead = totalNumPages \* hoursSpentPerPage;

**return** totalEffortToRead;

}

**public** **void** showDocumentDetails(){

**double** hrsPerPage = 0.1; **double** totalEffort = 0;

**for**(Section s : **this**.sections){ //within the body of this for, work with EACH Section s ONE AT A TIME!!!

System.***out***.println(s.getTitle() + "\t" + s.getNumPages());

}

totalEffort = computeStats(hrsPerPage);

System.***out***.println("num. pages: " + totalNumPages);

System.***out***.println("estimated effort to read (hrs): " + totalEffort);

}

}//end class Document

public final class **DocManagerDemoApp** {

public static void **main**(String args[]){

Topic botany = new Topic("Botany");

Document doc1 = new Document("Peri fyton by Aristotle", botany);

System.out.println("\n----------------------------- SECTIONS OF A DOCUMENT ---------------------------");

Section sec1 = new Section("Intro", 6); Section sec2 = new Section ("Background", 10);

Section sec3 = new Section ("Actual contribution", 30);Section sec4 = new Section ("Experiments", 10);

Section sec5 = new Section ("Fin", 4);

doc1.addSection(sec1); doc1.addSection(sec2); doc1.addSection(sec3);doc1.addSection(sec4);doc1.addSection(sec5);

doc1.showDocumentOverview();

doc1.showDocumentDetails();

System.out.println("\nOffered by the " + Document.getOwner() );

**Output:**

----------------------------- SECTIONS OF A DOCUMENT ---------------------------

New section added, total # sections: 1

New section added, total # sections: 2

New section added, total # sections: 3

New section added, total # sections: 4

New section added, total # sections: 5

Univ. Ioannina has ths nice document titled: Peri fyton by Aristotle with the topic: Botany

Intro 6

Background 10

Actual contribution 30

Experiments 10

Fin 4

num. pages: 60

estimated effort to read (hrs): 6.0

Offered by the Univ. Ioannina

}

}

public final class **Topic** {

private String title;

public Topic(){title = "NoTitle";}

public Topic (String aTitle){title = aTitle;}

public String getTitle(){return title;}

}

public final class **Section** {

private String title;

private int numPages;

public Section(){title = "noName"; numPages = 0;}

public Section(String aTitle, int nPages){title = aTitle; numPages = nPages;}

public String getTitle(){return title;}

public int getNumPages(){return numPages;}

}