

Lab 6 Part 3: Bookstore

- (1) In Bookstore.py in the loadCatalog function create an instance of an ArrayList called bookSortedCatalog.
- (2) In the for loop where a Book object is created, create a SortableBook object with all the book details and add the SortableBook to bookSortedCatalog.
- (3) Add menu options to sort bookSortedCatalog using mergesort and quicksort.

Search books by *title using BinarySearch:

We cannot do a direct binary search on the given bookCatalog or bookSortedCatalog with a string 'title' because we cannot compare a string with a Book/SortableBook. We must create another catalog that contains only strings of book titles to perform the binary search.

**BinarySearch can only find exact title matches, it cannot approximate matching prefixes like the binary search tree.*

Steps:

- In Bookstore.py create a function binarySearchByTitle(title)
- In the function create an ArrayList called titleCatalog.
- Loop through bookCatalog and add each book *title* to titleCatalog.
- Sort titleCatalog using quicksort or mergesort.
- Initiate a local variable called 'index' to not None
- While index is not None do the following:
 - Call binarySearch on titleCatalog and prefix as parameters. binarySearch will return the index of the match found.
 - If index is not None
 - Use the index to print out the index and book title.
 - Then, remove the title from titleCatalog.
- Make sure your binarySearch function returns None when no match is found to avoid an infinite loop.