* An animal shelter holds only dogs and cats, and operates on “first in, first out” basis. People must adopt either the “oldest” (based on arrival time) of all animals in the shelter, or they can select whether they would prefer a dog or a cat (and will receive the oldest animal of that type). They cannot select which specific animal they would like.

Create the data structures to maintain this system and implement operations such as “push”, “popAny”, “popDog”,”popCat”. You can use built in C++ linked list functions.

* Design the data structures for an online book reader system.

It should provide the following functionality:

* + User membership creation and extension
  + Searching the database for books
  + Reading a book
  + Only one active user at a time
  + Only one active book by this user
  + We need objects like: User, Book, Library, UserManager, Display(not actual GUI display but it should have functions to display the book, turn pages,…)

Also add MySQL support, using ORM mapper like http://en.wikipedia.org/wiki/ODB\_(C%2B%2B)