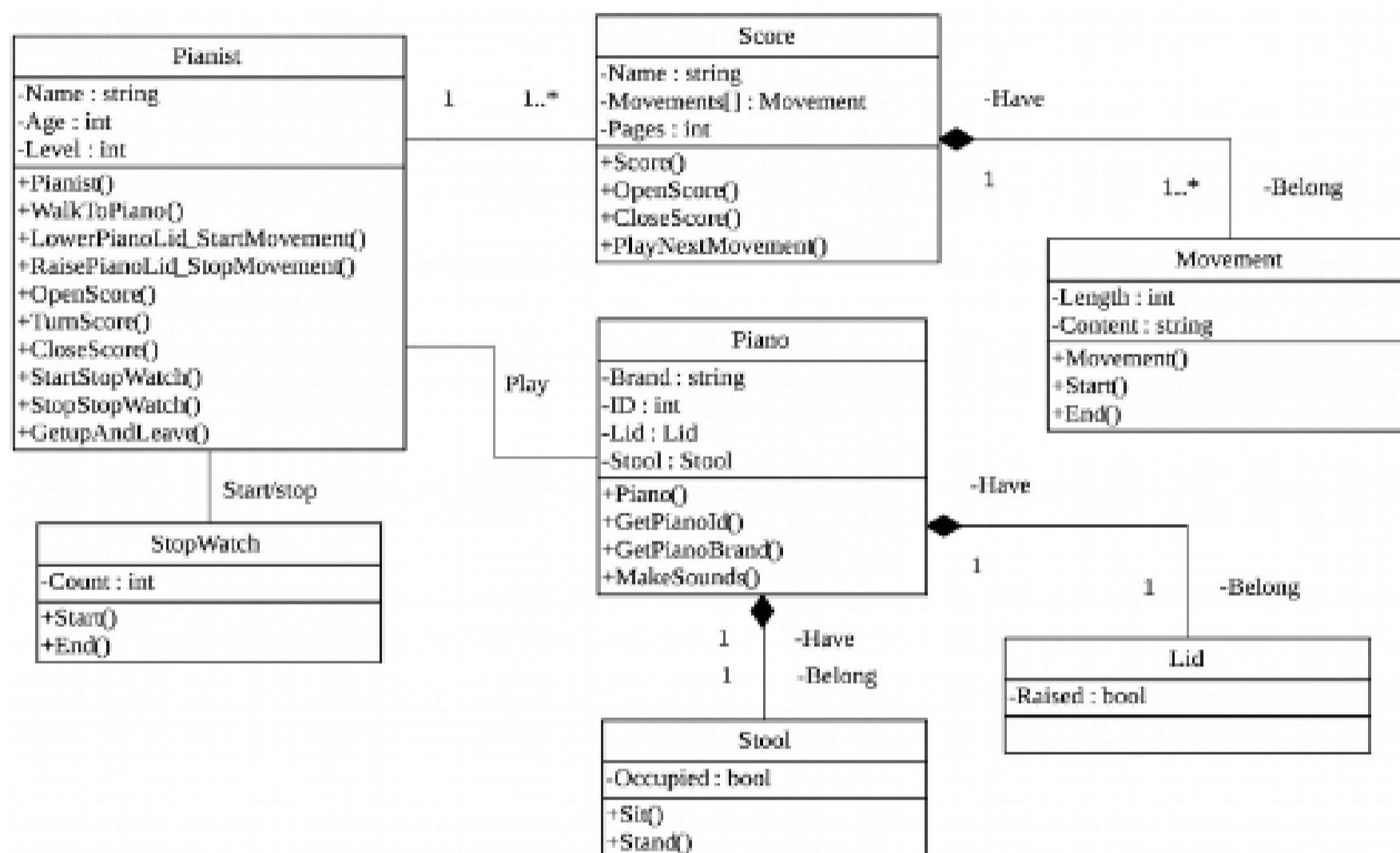


**EEL 5881- Spring 2008**  
**Homework #2**  
**Due: April 3, 2008**

- A hard copy has to be handed in to the instructor at the beginning of the class period.
- Send the soft copy of your model to the email address of the TA, Pengju Shang (shangpengju@gmail.com)
- No late submission will be accepted

Implement the classes as shown in the following diagram. You can use any programming language which supports object oriented programming such as Java/C++ for implementation.



**You need to:**

1. Provide an implementation of all the classes.
2. In the construct function of each Class, you need to initialize the private attributes.
3. You need create one "Pianist" object which is the intersection of all the objects.  
 Create one "score" object, and assign it to the pianist object.  
 Create three "movements" objects which should be assigned to the "score" object.  
 Create one "Piano" object.  
 Create "Lid" and "Stool" objects which belong to the Piano object.  
 Create "StopWatch" which can be operated by "Pianist" object.

4. All the “GetID”, “GetName” or “GetBrand” will return the corresponding private attributes.
5. The relationship among the “Pianist”, “Piano” and “Score” objects is: Pianist “input” the content of the three movements into the Piano, which can “play” them by using “makesounds” function. You can simulate the “play” by outputting the content onto the screen, “read score” by reading the content of files.

### **Hints**

- If you need to use another class (class2) to define the private data in the current class (class1), use “new class2” in the construct function of class1.
- You must avoid code duplication. For example, if several methods in your class share the same code fragment, place the common fragment in a private method.
- You must use meaningful variable names.
- You can design your program based on your understanding if you are not familiar with the concert processing, what you need to do is using Object-Oriented Programming to describe the story.