**Specification of the Library System**

The library system tracks the items checked out by borrowers. The system contains a catalog of the items owned by the library. There are two kinds of catalog items: books and recordings. All catalog items are identified by a unique code. (If the library owns several copies of the same book or recording, each copy has a unique code.) The information for each item includes title, year, and availability. An item is available if it is not checked out.

In addition:

* The information for a book includes the author and number of pages.
* The information for a recording includes the performer and format (CD or tape).

The system contains a database of the borrowers. Each borrower has a unique identification code in addition to a name. The system maintains a list, for each borrower, of the catalog items checked out.

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In the library system, the user should be able to:

* Display the catalog by listing the code, title, and availability of each item.
* Display a catalog item.
* Display the borrowers by listing the identification code and name of each borrower.
* Display the catalog items checked out by a borrower.
* Check out a catalog item by adding the item to borrower's list of borrowed items.
* Check in a catalog item by removing the item from borrower's list of borrowed items.

**Tourist client Information System**

The tourist information system maintains information about two different kinds of tourists:

* Individual tourists(散客): For these tourists, the system stores an ID and the information about a person (name, telephone number, and email).
* Tourist groups(旅游团): For these tourists, the system stores an ID and provides the capability of defining one or more contact people for the tourist group. The system stores the following information for each contact person: name, telephone number, email, and the job position(团长或导游或其他职务) of the contact in the tourist group.

Assume that each tourist has a unique ID and that IDs cannot be modified. Assume each contact for an institution has a unique name.

The system provides the following functions:

* Add a tourist into the system
* Look up a tourist given an ID
* Remove a tourist from the system given an ID
* Add a new contact for a tourist groups
* Look up a contact given the ID of the group and the name of the contact
* Remove a contact given the ID of the group and the name of the contact



 