

1. Suppose that the set of loans made by a library is to be represented in a data structure. Each book in the library may be checked out only by a single library patron at a time. However, a single patron may be able to check out multiple books. To be able to efficiently determine which patron has a given book, the library data structure is best represented by a dictionary where:

- A. [Correct Answer] the books are the keys and the patrons are the values.
- B. a concatenated string `books+patrons` is the key and a boolean is the value.
- C. unique indices starting from 0 are the keys and the pair `(books,patrons)` is the value.
- D. [Your Answer] the patrons are the keys and the books are the values.
- E. None of the other answers are correct.

2. Which of the following is not a fundamental capability of a dictionary?

- A. insert
- B. find
- C. delete
- D. [Your Answer] all of these are part of the Dictionary ADT
- E. [Correct Answer] traverse

3. Which of the following can be used to implement the Dictionary data structure? (do not worry about the efficiency)

- A. Array
- B. Binary Tree
- C. Singly-Linked List
- D. Binary Search Tree
- E. [Correct Answer] [Your Answer] All of the above

4. Which of the following is a correct way to declare an instance of a list whose parameterized type is a sphere object?

- A. `sphere<list> s;`
- B. More than one of the declarations are correct.
- C. None of the declarations are correct.
- D. `list s(sphere);`
- E. [Correct Answer] [Your Answer] `list<sphere> s;`