

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

2. Assume that you have a templated Latte class, and another coffee class. Which of the following correctly declares a variable called beverages which is a dynamic array of type Latte whose parameterized type is a coffee object?

- A. More than one of the other options are correct.
- B. [Your Answer] Latte \* beverages = new coffee[size];
- C. Latte<coffee \*> \* beverages;
- D. [Correct Answer] Latte<coffee> \* beverages;
- E. None of the other options is correct.

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

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

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

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