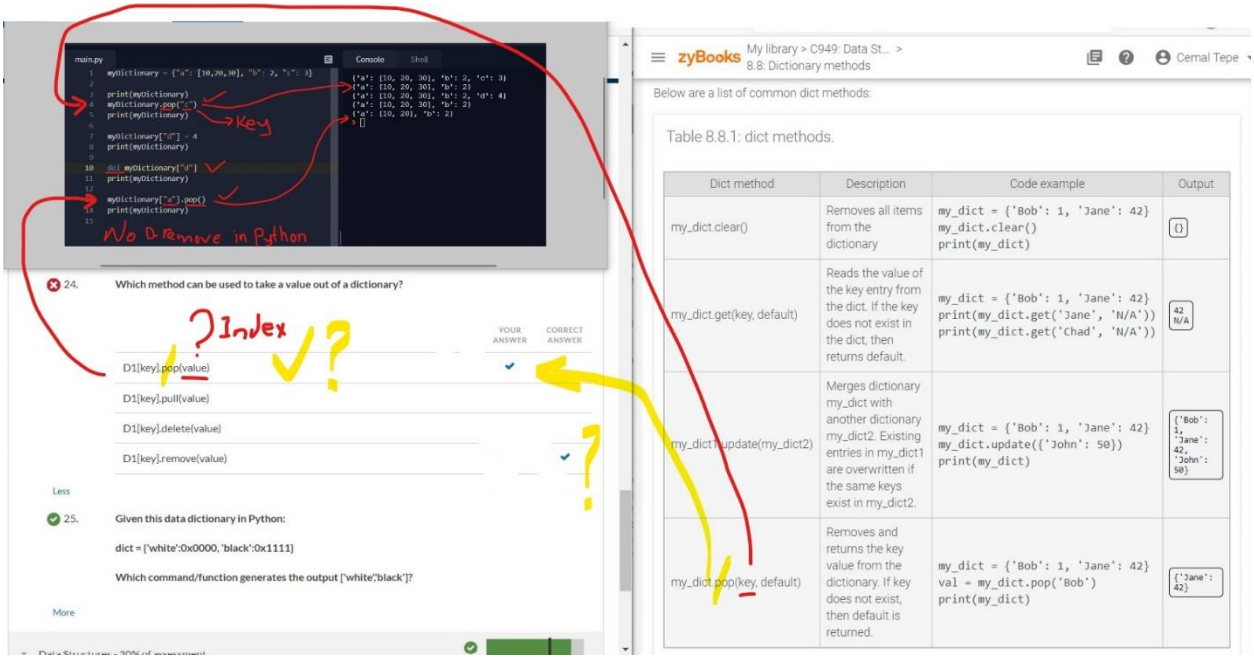
C949 - Issues with PreAssessment

Table 3.2.1: Basic data structures.

Data structure	Description
Record	A ***record*** is the data structure that stores subitems, with a name associated with each subitem.
Array	An ***array*** is a data structure that stores an ordered list of items, with each item is directly accessible by a positional index.
Linked list	A ***linked list*** is a data structure that stores ordered list of items in nodes, where each node stores data and has a pointer to the next node.
Binary tree	A ***binary tree*** is a data structure in which each node stores data and has up to two children, known as a left child and a right child.
Hash table	A ***hash table*** is a data structure that stores unordered items by mapping (or hashing) each item to a location in an array.
Heap	A ***max-heap*** is a tree that maintains the simple property that a node's key is greater than or equal to the node's childrens' keys. A ***min-heap*** is a tree that maintains the simple property that a node's key is less than or equal to the node's childrens' keys.
Graph	A ***graph*** is a data structure for representing connections among items, and consists of vertices connected by edges. A ***vertex*** represents an item in a graph. An ***edge*** represents a connection between two vertices in a graph.



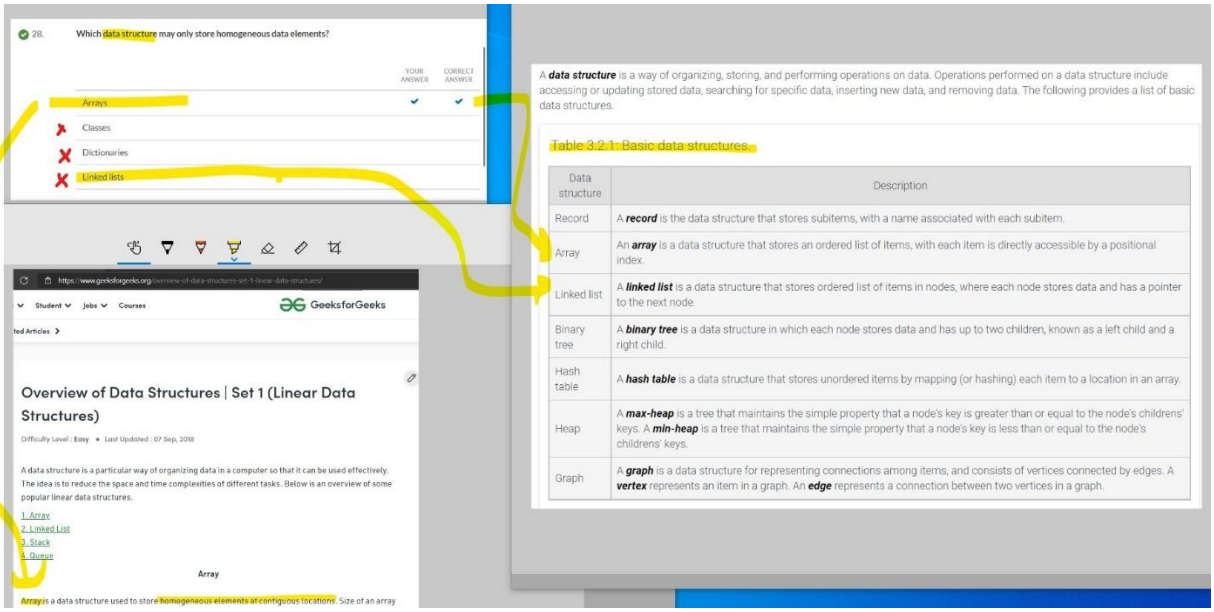
Dict method	Description	Code example	Output

my_dict.clear()	Removes all items from the dictionary	`my_dict = {'Bob': 1, 'Jane': 42}`
		`my_dict.clear()`
		`print(my_dict)`
			`{}`

my_dict.get(key, default)	Reads the value of the key entry from the dict. If the key does not exist in the dict, then returns default.	`my_dict = {'Bob': 1, 'Jane': 42}`
		`print(my_dict.get('Jane', 'N/A'))`
		`print(my_dict.get('Chad', 'N/A'))`
			`42`
			`N/A`

my_dict1.update(my_dict2)	Merges dictionary my_dict with another dictionary my_dict2. Existing entries in my_dict1 are overwritten if the same keys exist in my_dict2.	`my_dict = {'Bob': 1, 'Jane': 42}`
		`my_dict.update({'John': 50})`
		`print(my_dict)`
			`{'Bob': 1, 'Jane': 42, 'John': 50}`

my_dict.pop(key, default)	Removes and returns the key value from the dictionary. If key does not exist, then default is returned.	`my_dict = {'Bob': 1, 'Jane': 42}`
		`val = my_dict.pop('Bob')`
		`print(my_dict)`
			`{'Jane': 42}`


28. Which data structure may only store homogeneous data elements?
YOUR ANSWER
CORRECT ANSWER
Arrays
Classes
Dictionaries
Linked lists
A data structure is a way of organizing, storing, and performing operations on data. Operations performed on a data structure include accessing or updating stored data, searching for specific data, inserting new data, and removing data. The following provides a list of basic data structures.
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Description
Record
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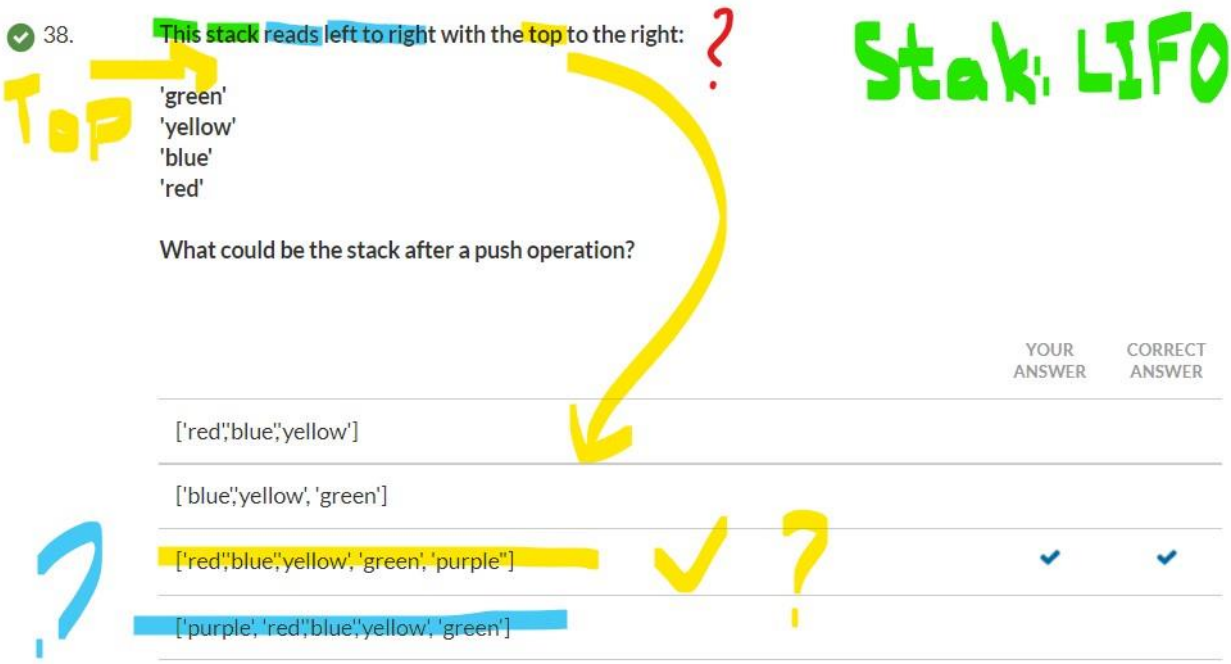
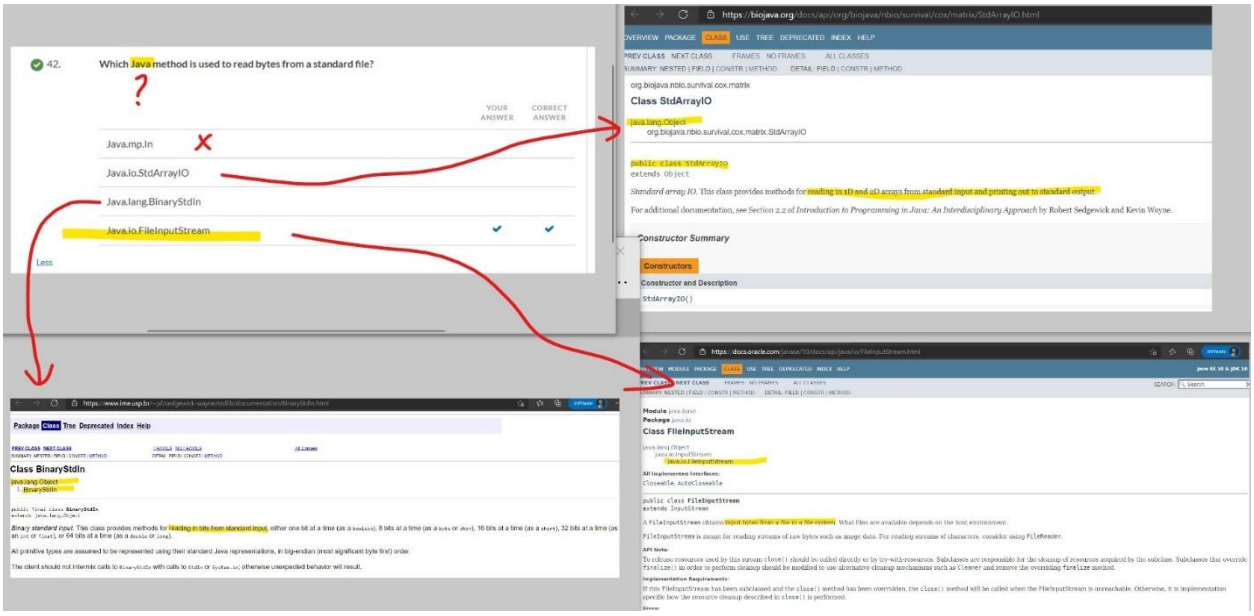
Array
An array is a data structure that stores an ordered list of items, with each item is directly accessible by a positional index.
Linked list
A linked list is a data structure that stores ordered list of items in nodes, where each node stores data and has a pointer to the next node.
Binary tree
A binary tree is a data structure in which each node stores data and has up to two children, known as a left child and a right child.
Hash table
A hash table is a data structure that stores unordered items by mapping (or hashing) each item to a location in an array.
Heap
A max-heap is a tree that maintains the simple property that a node's key is greater than or equal to the node's childrens' keys. A min-heap is a tree that maintains the simple property that a node's key is less than or equal to the node's childrens' keys.
Graph
A graph is a data structure for representing connections among items, and consists of vertices connected by edges. A vertex represents an item in a graph. An edge represents a connection between two vertices in a graph.
GeeksforGeeks
Overview of Data Structures | Set 1 (Linear Data Structures)
Difficulty Level : Easy • Last Updated : 07 Sep, 2018
A data structure is a particular way of organizing data in a computer so that it can be used effectively. The idea is to reduce the space and time complexities of different tasks. Below is an overview of some popular linear data structures.
1. Array
2. Linked List
3. Stack
4. Queue
Array
Array is a data structure used to store homogeneous elements at contiguous locations. Size of an array


38.
This stack reads left to right with the top to the right:
'green'
'yellow'
'blue'
'red'
What could be the stack after a push operation?
YOUR ANSWER
CORRECT ANSWER
['red','blue','yellow']
['blue','yellow', 'green']
['red','blue','yellow', 'green', 'purple']
['purple', 'red','blue','yellow', 'green']
Top
Stak: LIFO


42.
Which Java method is used to read bytes from a standard file?
YOUR ANSWER
CORRECT ANSWER
Java.mp.In
Java.io.StdArrayIO
Java.lang.BinaryStdIn
Java.io.FileInputStream
Less
Class StdArrayIO
Class BinaryStdIn
Class FileInputStream