

Study questions set #7

1. Conceptually speaking, the Stack data structure is best classified by which category of collections?
 - a. Sets
 - b. Lists
 - c. Queues/Dequeues
 - d. Maps
2. Rewrite each of the following loops; first using a for-each loop (if possible), and then using an iterator. If it is not possible to rewrite using a for-each loop, state why not.

```
for(int i = 0; i < arrayList.size(); i++) {
    System.out.println(arrayList.get(i));
}

for(int i = 0; i < arrayList.size(); i++) {
    arrayList.set(i, arrayList.get(i)+1);
}

for(int i = 0; i < arrayList.size(); i++) {
    if(arrayList.get(i) % 2 == 0) {
        arrayList.set(i, arrayList.get(i) % 3);
    }
}

for(int i = 0; i < arrayList.size(); i++) {
    if(arrayList.get(i) % 2 == 0) arrayList.remove(i);
}
```

3. Implement a generic, public, static method called “genericZip(...)”. This method will take two arguments: an array of keys, and an array of values. The method will return the corresponding HashMap, in which the key at index *i* is mapped to the value at index *i*. If the arrays are different lengths, throw an `IllegalArgumentException`. If a key occurs more than once, the highest-index mapping should result. The data-types stored in each array must be parameterized.