





Quiz 4

Question on use of synchronized

Question # 1

What is the synchronized keyword?

Java provides a built-in mechanism to provide atomicity called the **synchronized** block. A synchronized method is a shorthand for a synchronized block that spans an entire method body and whose lock is the object on which the method is being invoked.

A synchronized block consists of a reference to an object that serves as the lock and a block of code that will be guarded by the lock.

Synchronized blocks guarded by the same lock will execute one at a time. These blocks can be thought of as being executed atomically. Locks provide serialized access to the code paths they guard.

Below is an example of a class with a synchronized method.

```
class ContactBook {
    Collection<String> contacts = new ArrayList<>();
    synchronized void addName(String name) {
        contacts.add(name);
    }
}
```





Note the synchronized method above is equivalent to the following rewrite:

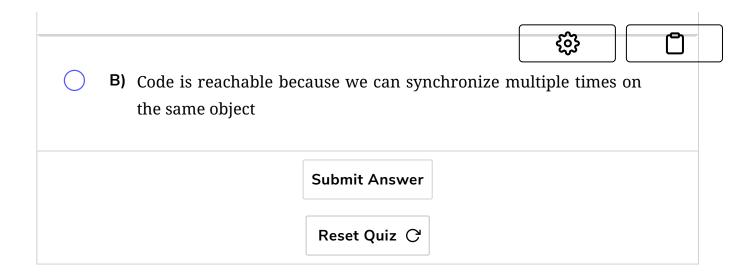
```
void addName(String name) {
    synchronized(this) {
       contacts.add(name);
    }
}
```

Question # 2

Is the print statement in the below code reachable?

Q

A) Code isn't reachabe because we try to synchronize twice on the same object



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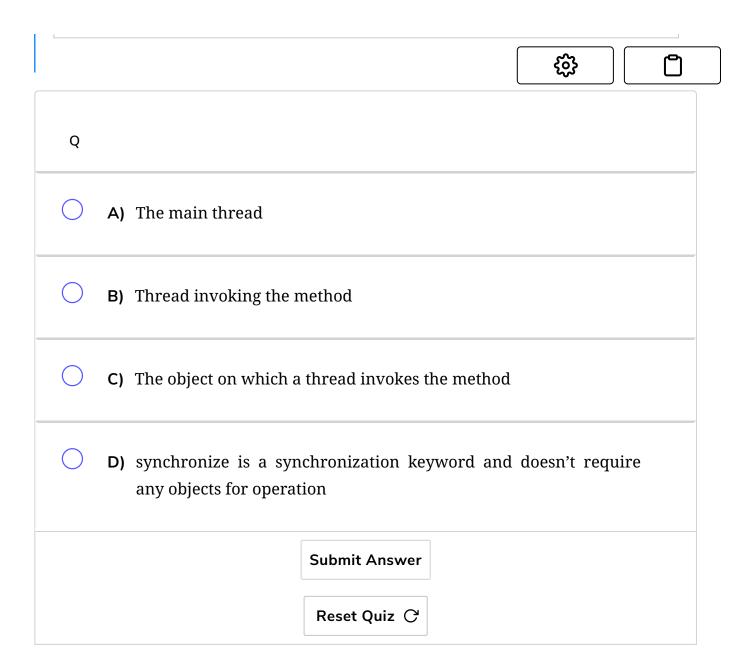
Question #3

Consider the below class which has a synchronized method. Can you tell what object does the thread invoking the addName() method synchronize on?

```
class ContactBook {
    Collection<String> contacts = new ArrayList<>();
    synchronized void addName(String name) {
        contacts.add(name);
    }
}
```

Class may be used as follows:

```
ContactBook contactBook = new ContactBook();
contactBook.addName("Trump");
```



Show Explanation

Question # 4

An instance method synchronizes on the instance object, do you know what object do static methods synchronize on?





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