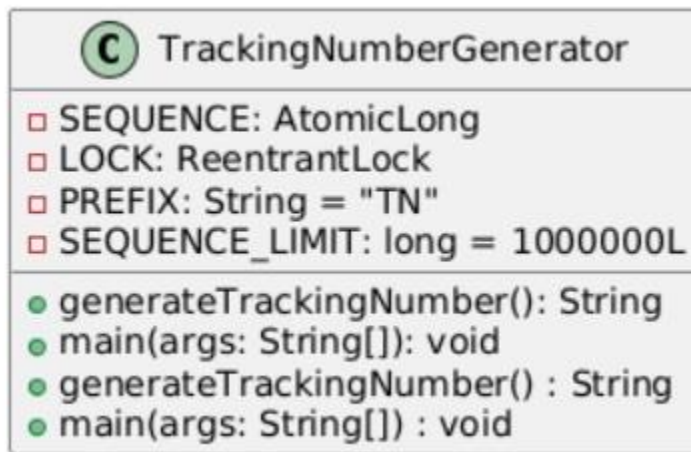


Class Diagram:



Java Code:

```
import java.util.concurrent.atomic.AtomicLong;
import java.util.concurrent.locks.ReentrantLock;
import java.time.Instant;

public class TrackingNumberGenerator {

    private static final AtomicLong SEQUENCE = new AtomicLong(0);
    private static final ReentrantLock LOCK = new ReentrantLock();

    private static final String PREFIX = "TN";
    private static final long SEQUENCE_LIMIT = 1000000L;

    /**
     * Generates a unique tracking number.
     * @return A unique tracking number.
     */
}
```

```
public static String generateTrackingNumber() {  
    long timestamp = Instant.now().toEpochMilli();  
    long mySeq;  
    LOCK.lock();  
    try {  
        mySeq = SEQUENCE.getAndIncrement();  
        if (mySeq >= SEQUENCE_LIMIT) {  
            SEQUENCE.set(0); // Reset sequence if limit is reached  
            mySeq = SEQUENCE.getAndIncrement();  
        }  
    } finally {  
        LOCK.unlock();  
    }  
    return PREFIX + "-" + timestamp + "-" + String.format("%06d", mySeq);  
}
```

```
public static void main(String[] args) {  
    for (int i = 0; i < 10; i++) {  
        System.out.println(generateTrackingNumber());  
    }  
}
```