Counterfeit Medicine

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The Story

This problem starts with a sad story. When I was growing up in Kenya it was estimated that over 38% of medicines sold at pharmacies were fake [1]. That was a big problem! Depending on which organization you ask, deaths from counterfeit medicine ranged from 100,000 per year (WHO) to 700,000 (IPN) [2].

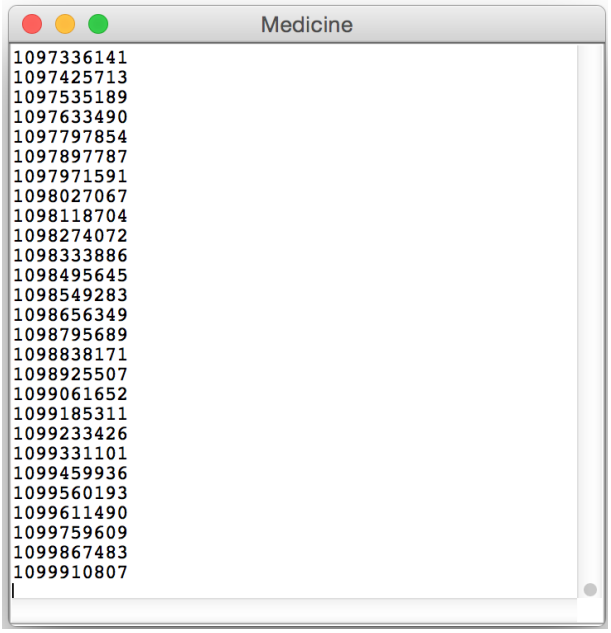
> “Deaths from counterfeit drugs are equivalent to, "four fully laden jumbo jets crashing everyday" [2]

In 2009 a Ghanaian fellow named Bright Simmons came up with a straightforward technology solution he called mPedigree. He partnered with companies that make medicine. On each legitimate package of medicine they stamped a unique scratch code. Now when you buy medicine at a pharmacy in Kenya you check the scratch code and text message mPedigree. If the code is in their system, and has never been used before, mPedigree sends a text message back saying: "valid." There has been a 58% decrease in child deaths from Malaria alone [3]. Sometimes simple programming solutions can have a large, positive impact on the world.

Your Job

Write a program that generates 10 digit numbers for 1,000 packages of medicine. Each number you generate should be (1) unique and (2) unpredictable.

Those numbers will be put on medicine packages. Counterfeiters won't stand a chance!



Random Numbers

Using Math.random()

```
double random = Math.random() * 49 + 1;
or
int random = (int )(Math.random() * 50 + 1);
```

This will give you value from 1 to 50 in case of int or 1.0 (inclusive) to 50.0 (exclusive) in case of double

random() method returns a random number between 0.0 and 0.9..., you multiply it by 50, so upper limit becomes 0.0 to 49.999... when you add 1, it becomes 1.0 to 50.999..., now when you truncate to int, you get 1 to 50.

Using Random class in Java

```
Random rand = new Random();
int value = rand.nextInt(50);
```

This will give value from 0 to 49.

For 1 to 50: rand.nextInt((max - min) + 1) + min;