Broadband Data Usage by County Project
AP Computer Science A
Due Friday 5/21/21 by midnight

Hi!

I'm in meetings Wednesday through Friday this week helping build the master schedule for next year. We'll be back in regular hybrid classes next week.

Today, pleas:

1) Fill out the Google Form I posted on the Google Classroom asking you to say you are present (that is what I'm using for attendance) and then:

2) Do this assignment.

Last week I read the following article on a website called theverge.com:

https://www.theverge.com/22418074/broadband-gap-america-map-county-microsoft-data

It talks about broadband data use all over the United States, giving county by county information.

I wrote a starter program that reads all of the data in, line by line, and stores the information in an ArrayList of County objects. Here is the County class:

```java
class County
{
   private int percent;
   private String name;

   public County(String n, int p)
   {
      name = n;
      percent = p;
   }

   public String getName()
   {
      return name;
   }

   public int getPercent()
   {
      return percent;
   }

   public String toString()
   {
      return name+ ": "+percent;
   }
}
```

Your task today is to do some statistical analysis using the data. My default program reads all the information and creates over 3000 County objects in an ArrayList called "data". You get to go through the ArrayList and do some statistical things:

1. Find the county with the highest rate of broadband usage.
2. Find the county with the lowest rate of broadband usage.
3. Report the national broadband usage average as a double.
4. Find and report Sonoma county's broadband usage
5. Count and report how many counties have higher broadband usage than Sonoma county, how many counties have lower broadband usage than Sonoma Count, and how many counties have the same level as us.
6. Report the mode, which is the percentage usage that shows up the most as well as how many counties are at the mode.

To do all of this you will do some loops (enhanced for loops would work great) and then use the getPercent() method to find out the percentage of any given county, then also the getName() method when you need to know the name of a particular county.

Here is sample output:

```
Broadband usage data successfully imported for 3134 counties
County with highest percentage: Nantucket County: 100%
County with lowest percentage:  Aleutians East Borough: 1%
Average percentage nationwide:  27.912252712188895%
Our info: Sonoma County: 53%
Counties with higher rates than us: 367
Counties with lower rates than us:  2740
Counties with our same rate:        27
Mode: 7% (84 counties at this level)
```

Of course, you will need to calculate all of the values, not just print what I have here! :-)

I have posted a video where I work the whole thing out, in case you get stuck.

Here's a link to the repl:

If you are in AP Stats this year perhaps you would like to do some other cool statistical thing to this data (find the standard deviation, perhaps? This is optional; if you do something extra, leave a private comment on the Google Classroom.)

Please get this done by midnight Friday 5/21/21. I'll be back with regular hybrid classes next week.