Huh?

- We need most or all of the class to finish up concurrency, using the materials in lecture 24
- We spent a few minutes at the beginning of class discussing a small change to project 3, using the next few slides

GUI

- Optional
- Fun
- Useful for testing against intuition
- Easy to use

- Not good for testing timing
- Not what we'll grade against

Small change to code

- To get the GUI to:
  - Be accurate
  - Give the same answers as your text version

- We had to make a small change to the code provided to you
  - No change to your code or what you do
  - But does change the answers you will get!
    - And slightly harder to compare against answers manually
Projections

News update: The world is a globe and maps are flat

To get a reasonable projection, we can basically change the latitude
• The map in our GUI uses a Mercator Projection
• So we’re changing the CensusGroup data to use the same projection...

Bottom line

• You can swap in the new CensusGroup any time before next Tuesday
• Once you do, the latitude in the input file is not the latitude that will be used in your calculations
  – We did this for you
  – But will affect the result slightly: more so for data farther North
  – That’s all you have to understand

• Make sense?

Changed code

```java
class CensusGroup {
    int    population;
    float  latitude;
    float  realLatitude;  // ignore but may help test
    float  longitude;
    CensusGroup(int pop, float lat, float lon) {
        population   = pop;
        latitude     = mercatorConversion(lat);
        realLatitude = lat;
        longitude    = lon;
    }
    float mercatorConversion(float lat){
        // math here
    }
}
```