**Group 2:**

* Fill out the definitions:

**Coordinate reference systems (crs):** System based on coordinates that is used to locate geographic places.

**EPSG registry:** Public registry of geodetic data, each assigned a code between 1024 and 32767

* **4326:** Full coordinate reference system (longitude and latitude)
* **29616:** North America -90°W to 84°W

**Geographic coordinate system:** Uses 3D spherical surface to determine locations on Earth

* **Longitude/Latitude:** Longitude is a coordinate system that runs East/West, Latitude is a system that runs North/South

**Projected coordinate system:** Flat, 2D surface to determine locations on Earth

* **Northing/Easting:** Northing = Y, latitude. Easting = X, longitude.
* **Universal Transverse Mercator (UTM):** Coordinate system around the Earth (60 North-South zones)
  + **Lansing is in UTM 16N or (more specifically) 16T**
* Answer the following in the same file as the definitions:
  + **Why do we need to use different datums?** Different datums are needed for different scales/measurements.
  + **What is a false northing/easting? Why is this used?** False northing = linear value applied to y coordinates. False easting = linear value applied to x coordinates. Used to ensure all values are positive.
* Put definitions/answers in your repository and Push/Commit.
  + In the Commit message, give the file name that has the answers.

**Homework:**

* Update Zoom to newest version (5.9.7 as of 3/17/22)
* Finish Group 1 and Group 2 work
* Install all the packages in the two lesson09 script files from the FW891 repository (this is so you do not spend 30 minutes in class next week installing the packages)
* From [Git/GitHub Quick Setup](https://d2l.msu.edu/d2l/le/content/1459992/viewContent/12243559/View) lesson (D2L)
  + Add email notifications on Push for you and [belinsky@msu.edu](mailto:belinsky@msu.edu) (section 8)
  + Send a message to ***belinskyc*** using ***Issues*** (section 9)
  + Do this after you add email notifications
* Add a shapefile (or a CSV with lat/long coordinates or a KMZ/KML file)
* Commit/Push all the changes above
  + make sure your Commit Message is descriptive
  + In Commit message, talk about what the shapefile represents