I started this project by learning about moving groups and stellar kinematics. I read several papers recommended to me by Gwen, and then I studied the Jupyter Notebook python tutorial from the Gaia archive. That tutorial gave instructions on how to query the Gaia database using the Astroquery python module, which I proceeded to do. I took an all-sky sample of sources within 300 pc and initially decided to have a limiting magnitude of 20. I then changed that to 11, based on the cuts Dehnen & Binney made in their August 1998 paper, as well as adding a cut on parallax error to $\sigma_\pi/\pi \leq 0.1$. Looking back on it now I realize I understood σ_π/π as actually π, not parallax, so I'll fix that in the future.

I was then tasked with finding the radial/line of sight velocities to plot against proper motion, to make a plot in velocity space. I tried to join the RAVE DR4 table that was included in the Gaia archive, but I kept getting a server 500 error. I then decided to go directly to the RAVE archive, with the same search criteria, and was able to join the TGAS_Source table in the Gaia archive with RAVE DR5, which provided me with the heliocentric radial velocity. I plotted that against the magnitude of proper motion to make a plot of the sources in velocity space. My next task was to translate the heliocentric coordinates into galactocentric coordinates, but we reached the end of the quarter, so that's where I'll be picking up.

The current form of the data I have is an SQL query for the RAVE archive, as well as a .csv file of the data from that query that is 25,163 rows long and contains columns of the source ID, right ascension, declination, proper motion in right ascension and declination, parallax, G-band mean magnitude, and heliocentric radial velocity.