	GALAXY NAME	HALO MASS (10^12 Msun)	DISK MASS (10^12 Msun)	BULGE MASS (10^12 Msun)	TOTAL MASS (10^12 Msun)	F_BAR
0	MW	1.975	0.075	0.01	2.060	0.041
1	M31	1.921	0.12	0.019	2.060	0.067
2	M33	0.187	0.009	-	0.196	0.046
3	Local Group	-	-	-	4.316	0.054

***also can see notebook for another version of table**

Part 4: Questions

1) The total masses of the Milky Way and M31 galaxies are the same ($2.06 * 10^{12} M\odot$). In both the Milky Way and M31 galaxies, the Halo component dominates the total mass, at $1.975 * 10^{12} M\odot$ and $1.921 * 10^{12} M\odot$ respectively.

2) M31 has more stellar mass and is therefore more luminous. The stellar mass of M31 is about $0.14 * 10^{12} M\odot$ while the Milky Way's is about $0.085 * 10^{12} M\odot$.

3) The ratio of dark matter masses in both galaxies is about 0.97 (MW/M31) – their dark matter mass is roughly the same. Despite M31 being more luminous, the galaxies are roughly the same size, so their similar dark matter mass fractions make some sense.

4) The Baryon fractions of the Milky Way, M31, and M33 galaxies are 0.041, 0.067, and 0.046 respectively. Compared to the Universe's overall Baryon fraction, this is very low. Since baryons are contained in stars and gas, this suggests that most of the baryons in the universe are contained in the hot gas between galaxies, rather than inside the gas and stars of galaxies themselves (see: the missing baryon problem)