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% ENGR 130 Homework 14
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Question 2 - Algorithm

1. Open the provided file and prepare it for reading
2. Disregard or throw away the first line of headers
3. Sort the list into different lists that correspond to the headers previously removed
4. Call the lists name, dist, spectype, and appmag to clarify the data being stored
5. Analyze the spectype list first, count the number of K spectral types found until the list has been fully analyzed
6. Tell the user the percentage of the total amount of stars that have a spectral type of K
7. Next, analyze the dist list, which is full of numbers. Determine which where the distance for Sol is in the list, and be sure to ignore it for the following steps.
8. Determine the maximum distance and minimum distance in the list, omitting sol, and match up the distance with the name found in the name list
9. Tell the user the above distance data
10. Now analyze the appmag list and dist list together. Convert the apparent mag values to absolute mag values using the relationship absmag = appmag - 5log(dist) + 5.
11. Repeat the previous step for as long as the appmag list is
12. Store the new value for each star in the aforementioned list named absmag
13. Ask the user to name a star. Based on their input, display that star's name, its distance from the earth, its apparent magnitude, and its absolute magnitude
14. Create a new list that contains all of the data from all 4 sorted lists, appending a slot that contains the absolute magnitude for each star. Ignore the headers from step 2.
15. Repeat the previous step for as many stars were in the original lists