

# Bash/Unix Assignment: Test Your Skills!

Use your [Bash/Unix Cheat Sheet](#) to do the following steps. Be sure to write down the commands you are using to get your answers when prompted.

## Part 1: Basic Shell Commands

1) Make a directory called "Astro192" and go into that directory.

a. *What is the path to your directory?*

2) Using the command line, get the file `StarData.tar.gz`. It is located at:

<http://www.astro.washington.edu/groups/premap/diy/po/StarData.tar.gz>

Again using the command line, unpack the files from the tar file. You should now have a directory called "StarData" with several files in it. Move into the `StarData` directory.

a. *How many files do you have?*

b. *Which file is the largest?*

c. *What command did you use to figure out which file is the largest? Hint: For file size, look at different flag options for the "ls" command using "man ls."*

3) Make a copy of `StarHeader.txt` called `junk.dat`.

a. *Write down the command you used. Note: you still have a copy of `StarHeader.txt`.*

4) Change the name of `junk.dat` to `junque.dat`.

a. *Write down the command you used. Note: you should no longer have a copy of `junk.dat`.*

5) Delete `junque.dat`.

a. *Write down the command you used.*

6) Print the contents of `StarHeader.txt` to the screen. This tells you what the columns in `BrightStars.dat` mean.

a. *Write down the command you used to do this.*

b. *What are the columns in `BrightStars.dat`?*

7) Write your name into a file called `small.dat`.

a. *Write down the command you used to do this.*

8) Write the first 100 lines of `BrightStars.dat` into `small.dat`, making it overwrite the line with your name.

a. *Write down the command you used to do this.*

9) Append the last 10 lines of `Brightstars.dat` onto `small.dat`.

- a. *Write down the command you used to do this.*
- 10) Using `Brightstars.dat` and `small.dat...`
- a. *Compare the total number of lines in each file.*

## Part 2: Applying Shell Commands

- 11) Learn to shell commands for efficiency: Inspecting a file by eye to look for a particular object is tedious and time-consuming. Instead of reading through all of `BrightStars.dat` use one of the shell commands we've learned to find the following:
- a. *What is the brightest star and what is its V mag? Reminder: the smaller the magnitude, the BRIGHTER the star.*
  - b. *Write down the command(s) you used to find the name of the brightest star. Hint: be careful with column counts. Every space in the file represents a new column to the `sort` command, meaning the RA and Dec columns are each seen as 3 columns to `sort`. This means the V magnitude (brightness) column is **NOT** the fourth column as seen by `sort`.*
  - c. *What is the most distant star with  $V < 3.0$  and what is its parallax (with units)? Reminder: the more distant the star, the SMALLER the parallax.*
  - d. *Write down the command(s) you used to find the name of the most distant star with  $V < 3.0$ . Hint: First find how many stars have  $V < 3.0$ , and copy this list of stars to a new file.*
  - e. *What is the reddest star (largest B-V) with  $V < 3.0$  and what is the B-V value?*
  - f. *Write down the command(s) you used to find the name of the reddest star with  $V < 3.0$ .*
  - g. *Use the Vizier "search by position" option to find the common names of the stars in 11a and 11c. Hint: You will need to find the RA and Dec of each to use as input to the search.*
  - h. *Write down the command you used to find the line containing the RA and Dec for the star from 11a.*