Requirements
CS201, 12/12/2016
Ed Wozniak

Modelling and Measuring Gamma-Ray Bursts

1. The GRB program will be designed for Python 3.5
2. The following imported modules will be used:
    - Astropy
    - Pandas
    - Matplotlib
3. The following 6 datasets from NASA will be combined:
    - CGRO/BATSE
    - Fermi GBM
    - Fermi LAT 4-Year Point Source
    - GRB Catalog
    - BeppoSAX/GRBM
    - Swift GRB
4. Duplicate entries will be removed (according to name and time), and preference is given to keeping the entry that has more available data categories recorded.
5. All dates in the datasets will be converted to the same format for easy comparison and sorting.
6. The user shall be able to enter 'q' at any prompt in order to exit the program.
7. The user shall select a time range from which to gather data, or leave a default time range selected (which is the entire range of the data).
8. After selecting a date range, the user shall select whether to view sorted and culled GRB occurrence data, fluence data, or redshift data.
9. The user shall have the option of selecting to view plots of data as well.
10. The following three plots shall be available to the user:
    - Location (RA, dec)
    - Fluence v. Redshift
    - Redshift v. Age of the Universe
11. The proper format for entering dates will be provided to the user. If the formats are entered incorrectly, the program will notify the user and allow for input again.
12. All decimal numbers will be rounded to three decimal places for output.
13. Output is standard output.
14. Scales of plots will be static, according to likely outputs. Plots will be labelled clearly.
15. The file should be run as a .py file, with Python 3.
16. Datasets should be located in a folder named "data" in the same directory as the .py file.