Lab 3 Program

#Imports Square Root function

from math import sqrt

#defines file reading the data and the output file for writing

file\_written = open(r'C:/Users/PGCC Loaner/Documents/MAGSAT Data Lab/lab5\_8.txt', 'r+')

file1 = open(r'C:/Users/PGCC Loaner/Documents/MAGSAT Data Lab/80\_01\_01.dat', 'r')

# open file ('r' for read)

Lines = file1.readlines() # read all lines from file to list of strings

#Column for each element of the data sheet

with open('80\_01\_01.dat', 'r') as f:

for line in f:

Time = int(line[0:8])

Lambda = float(line[8:16])

Phi = float(line[16:24])

R = float(line[24:33])

Bx = float(line[33:41])

By = float(line[41:49])

Bz = float(line[49:57])

flag = int(line[57:62])

absolute\_b= sqrt(pow(Bx,2)+pow(By,2)+pow(Bz,2))

#selects only three elements

lan\_abso=Time, Lambda, absolute\_b

#writes to text file and separates the data into separate lines

file\_written.write(str(lan\_abso)+"\n")

file1.close() # close files

file\_written.close()

print('Done.')

Output of the first 20 lines

(14181, 68.296, 47406.44288480206)

(14672, 68.326, 47402.862440257755)

(15164, 68.355, 47400.24574029126)

(15655, 68.384, 47396.66817235152)

(16147, 68.414, 47394.12480993821)

(16638, 68.443, 47391.53587867775)

(17130, 68.472, 47388.93380758846)

(17621, 68.502, 47385.33802971127)

(18113, 68.531, 47382.76109240575)

(18604, 68.56, 47380.36369225124)

(19096, 68.589, 47377.68363027049)

(19587, 68.619, 47374.13255733555)

(20079, 68.648, 47371.580771808745)

(20571, 68.677, 47369.09782685332)

(21062, 68.707, 47366.52005045336)

(21554, 68.736, 47362.944250120265)

(22045, 68.765, 47360.40661882032)

(22537, 68.794, 47356.89774573499)

(23028, 68.824, 47354.37548125833)

(23520, 68.853, 47350.882855866585)