

CPSC 121 Assignment 2
Gonzaga University, Spring 2023
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Goals:

- Demonstrate the appropriate use of floating-point data types
- Perform arithmetic operations with large numbers
- Use constant variables with proper naming conventions
- Practice using proper naming conventions and utilizing comments

Instructions:

- You are tasked with writing a program that will calculate how far we could travel in one hour at varying fractions of the speed of light.
- The program will display the distance traveled in miles for each percentage below:
 - % 1 the speed of light
 - % 10 the speed of light
 - % 50 the speed of light
 - % 100 the speed of light
- No user input is being used for this assignment
- Your output should roughly match mine below:

```
--Lightspeed Distance Calculator--  
Traveling at one-percent the Speed of Light, we will go: 1.60704e+08 Miles in one day!  
Traveling at ten-percent the Speed of Light, we will go: 1.60704e+09 Miles in one day!  
Traveling at fifty-percent the Speed of Light, we will go: 8.0352e+09 Miles in one day!  
Traveling at one-hundred-percent the Speed of Light, we will go: 1.60704e+10 Miles in one day!
```

Note: cout formats our numbers to shorten them, we will learn how to print numbers nicely later in the semester. This reads like scientific notation, e.g. 1.60704e+10 is equivalent to 1.60704×10^{10} , or 16,070,400,000

Starter Code:

You are provided with a .zip file containing starter code for this assignment. It is set up such that you should be able to type “make” (without quotes) in the terminal and the program will run.

Be sure to use the proper data types (remember there is a size limitation to data types!), as well as making the appropriate variables constant with the const keyword. Write good comments explaining what each step of the logic does where needed (if it's not readily apparent what something does, give it a comment!).

Submission:

Submit a single .zip file with your solution to blackboard by the due date. Your .zip file should have the following:

A folder named "Assignment2".

Inside that folder: an Assignment2.cpp file, and a Makefile

You should not modify the Makefile. Write your code in Assignment2.cpp.

Rubric:

Program compiles without errors or warnings:	10pts
Output is correct and approximately matches the example:	10pts
Program uses the "const" keyword where appropriate	5pts
Program includes sufficient comments, adheres to good programming style (indentation, and naming conventions)	5pts
Submission has two files within one folder, all named correctly	5pts