Hand On Day 3

June 22, 2023

1 Day 3 Hands on

1.1 Let's use pointers and inheritance

Create a class of for a star, that has a defined mass, temperature and density. Then, create derived classes for your paricular stellar object, e.g. a dwarf star, a red giant star, a black hole, a neutron star, whatever you can think of. Then, as in the inheritance lecture, create a vector of stellar objects. Use a pure virtual function to print to screen the luminosity of each stellar type, which is a function of the star's mass, temperature and/or density.

Here are some example of limunosity formulas you can use (please note, these have no real physical meaning, they are made up of rhte purpose of having a simple task):

star:

$$L = \frac{M^{3.5}}{T}$$

black hole:

$$L = MT^4$$

white dwarf:

$$L = \rho M$$

create your own for further stellar type objects

where M is mass, T is temperature, and ρ is density.