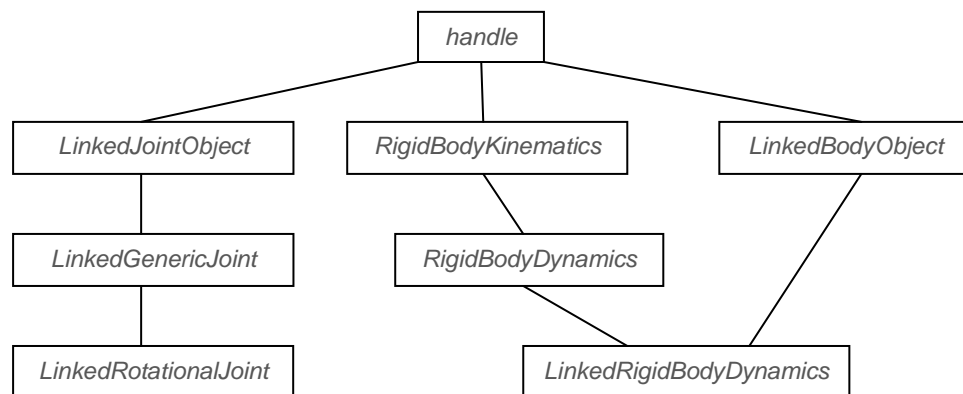


Problem 30 (Inheritance to Structure Code)

(a)



(b) –

- (c) Private properties of a class can be accessed only from within this class, whilst protected properties from both this class and all of its subclasses. Thus, for example, by changing some of the properties and methods of *RigidBodyKinematicsCLASS_v2* from being private to being protected, we make it possible to access them from *RigidBodyDynamicsCLASS_v2*.
- (d) This line calls the constructor function of the superclass *LinkedGenericJointCLASS_v2* to construct an object `obj` of the class *LinkedRotationalJointCLASS_v2*. That is, it creates a rotational joint object using the routine for a generic joint object.
- (e) The *LinkedGenericJointCLASS_v2* class defines the functionality (properties and methods) that is shared between joints of different types, such as rotational, spherical, or rolling-contact joints. Hence, the code in this class can be reused to construct different types of joints. In the case of the rotational joint, only the `JointFunction` method needs to be overwritten to construct a rotational joint from a generic joint object.