**Analysis**

How does your design implement the four pillars of OOP (abstraction, encapsulation, inheritance and composition, and polymorphism)?

* **Abstraction**: This is demonstrated in our design by our AbstractPlayer class and its attributes; it only has relevant attributes that help identify a player from another within the context of hockey, such as their position or jersey number. It does not include irrelevant information such as a player’s favourite food or spoken languages.
* **Encapsulation**: Encapsulation is demonstrated through the use of private instance variables (e.g., \_fname and \_lname) and methods (\_player\_exists) to hide detail from the public interface. Getter methods such as get\_id() are used to access those private variables from outside the class.
* **Inheritance** **and** **composition**: These are demonstrated in our AbstractPlayer base class, and the two child classes which are derived from it (PlayerForward and PlayerGoalie). Attributes that the child classes share, such as \_fname and \_lname, are inherited from the AbstractPlayer class; specific attributes such as \_total\_shots or \_goals\_saved are within their respective classes only.
* **Polymorphism**: This is demonstrated in the PlayerForward and PlayerGoalie classes. Both of these classes have the get\_stats() and get\_type() methods, but they differ depending on the class.
  + In PlayerForward, get\_stats() returns a list containing values for the player’s number of goals, assists and total shots. get\_type() returns “Forward”.
  + In PlayerGoalie, the list for get\_stats() returns values for the player’s number of shots against, goals against, and saves. get\_type() returns “Goalie”.

Why are your entity classes good abstractions (i.e., models) of the real-world entities?

* Our entity classes are good abstractions because only relevant information to model a player’s profile is included. Our classes only include attributes which are important in a hockey context (e.g, shots taken by or against a player), and excludes those which are irrelevant (such as a player’s SSN or school of graduation).