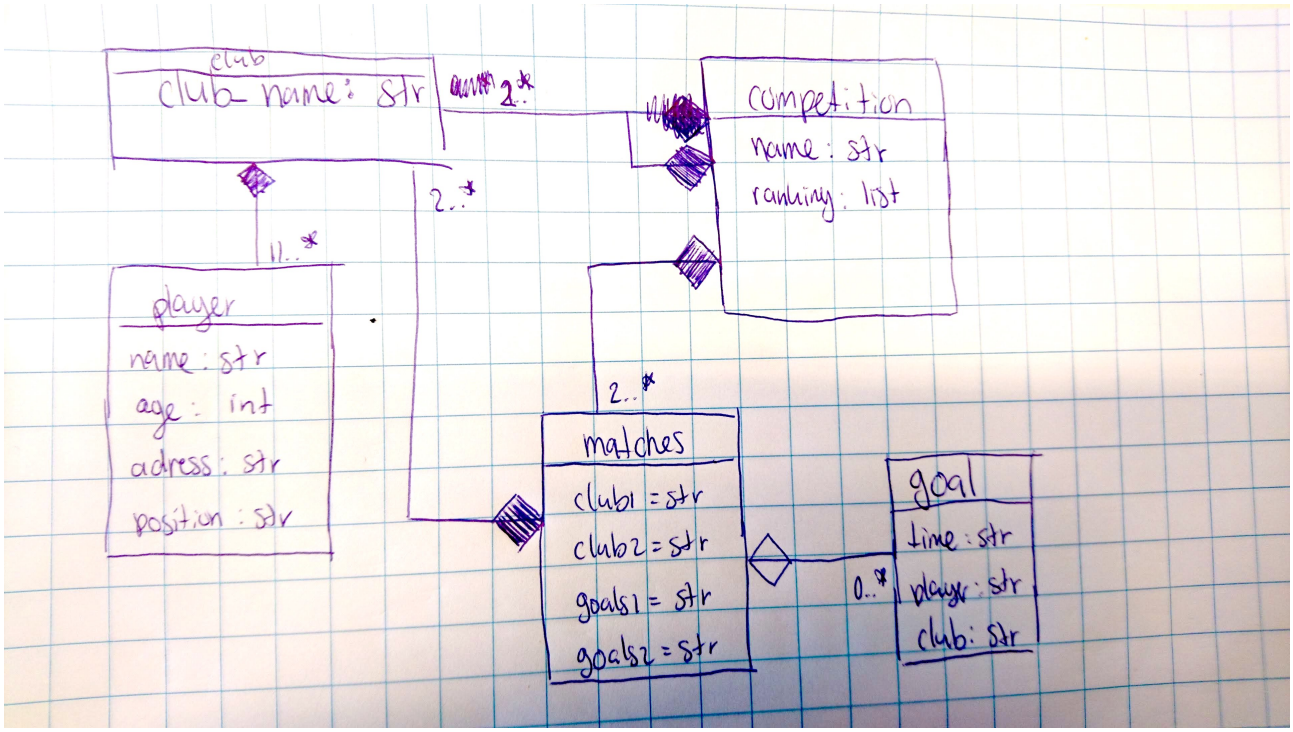
Notes for UML class diagrams

You should make a clear argument below your diagram of *why* your choices are reasonable: **this is part of the grading**.

- type of relation between classes (association, composition, aggregation)
- choice of adding extra classes or simply using an attribute
- multiplicity values (0..1, 1, 0..*, etc)

Example: soccer manager



- A class is normally noted in singular form. You can think of it as a type. The Player type, and the Competition type. So, we would expect Match to be singular, too, in this diagram.
- In this diagram, a Club is *composed*◆ of players. Without the club, the players wouldn't be players.
- Note that this last item is up for discussion: in the case of player transfers, players can move independently of clubs, so technically, a club might not have (enough) players, even though it still exists as a business. To indicate that, you can make it an *aggregation* relation◇.
- Note that in the club-player association, there are *at least* 11 players (11..*).
- A Competition cannot exist without 2 Clubs, so again, this is a *composition*◆.
- A specific football Match has 0 or more goals associated. In the diagram above, this has been given an *aggregation*◇ marker. However, a goal does not exist independent of a match. A specific goal cannot be part of one match and later transfer to another match. That's typical for a *composition*◆ association, so we would probably change the diagram to accommodate that.
- Note that the Match class still specifies "goals1, goals2", but this is redundant, because apparently there is now a separate class for Goals.
- One option for improvement would be to associate Goal with Player and Club. As you can see, the Goal class currently has player and club attributes (strings) but these could be replaced with an association.
- Which association would we choose between Goal and Player? Not aggregation or composition, because a Goal is not part of a Player, nor is a Player part of a Goal. In this case a plain association would be appropriate.