

## CS 12 - Assignment 8

### Classes and Inheritance

### Due Friday, March 13

In this assignment you will be using classes and inheritance. You will be using your assignment from AS7 which created a sport's team class. Be sure to do a good job on the assignment as you will be using it in future assignments. You must divide your program up into separate files and turn in a makefile with your code. Be sure to include all necessary information at the top of your program and each file and use good commenting and style throughout. You must use linux to do this assignment.

Write a football class which publicly inherits the sport's team class. This class should also contain the following data members:

**number of touchdowns** This data member should keep track of the total number of touchdowns for the current season.

**number of interceptions** This should keep track of the total number of interceptions for the current season.

Your class should contain the following function members:

**Constructor** This function should take one parameter, the team's name.

**Display** Print all the data members of the football class, nicely formatted.

**Show Stats** This should print the football statistics, the average number of touchdowns per game and the average number of interceptions per game.

**Play Game** This function should take one parameter, a character denoting whether the game was won or lost. It should also find out if there were any touchdowns or interceptions in the game.

Now write a baseball class which publicly inherits the sport's team class. You should also include the following data members:

**home runs** Keep track of the total number of home runs for the current season.

**rbis** This data member keeps the total number of runs batted in during the current season.

**errors** Maintain the total number of errors in the current season.

Include the following function members:

**Constructor** This should take one parameter, the team name.

**Display** Print all the data members for the baseball class nicely formatted.

**Show stats** Print out the average number of home runs, average number of rbis, and average number of errors per game in the current season.

**Play game** This function should take one parameter representing whether the game was won or lost. It should also update the total number of home runs, the total number of rbis, and the total number of errors if necessary.

Now write a short main program. It should declare a football team and a baseball team. You should have a menu of all the possible function options. The user should be able to continue choosing options and the team they wish to manipulate.