**STAT KATZ Statistics Co.**

After a brutal and hostile bidding war, we just won the contract with the XFL to deliver them a statistical calculator that can be used to compute various statistics for the football league’s 30 teams. The contract states that our product must calculate various averages for the league’s preseason, which means we are computing averages based on teams’ performances over just four games. If they like what we deliver, the contract states an extension that would employ us to continue developing our calculator for a full sixteen game season. The initial calculation requirements for the beta version of the calculator are the following averages:

* QBR rating

-Impact the quarterback had on the team’s offensive performance

* Offensive efficiency

-How efficient the offense was on a per play basis

* Total Offense (Yards Per Game)

-Total yards gained by an offense per game

* Total Defense (Yards Allowed Per Game)

-Total yards allowed by a defense per game

* Defensive efficiency

-How efficient the defense was on a per play basis

* A visual representation of the data

We need to implement the following:

**Quarterback class** with the parameters (int Passing yards, int rushing yards, int touchdowns, int interceptions, double completion percentage)

Example: QB cutty = new QB(400, 36, 4, 1, 0.78);

In this class should be the QBR calculator using the formula:

**QBR = ((Passing yards + rushing yards +\_(touchdowns\*6))/Interceptions))\*completion percentage)**

**Offense class** with the parameters (int Passing Yards, int rushing yards, int points scored, int turnovers, int plays run)

Example: Offense team1 = new Offense(450, 120, 28, 2, 56);

In this class should be the Offensive efficiency and Total offense calculations:

**TotalOffense** = passing yards + rushing yards

**OffensiveEff** = (((total offense + points scored)/(turnovers\*2))/ plays run)

**Defense class** with parameters (int passing yards allowed, int rushing yards allowed, int points allowed, int turnovers forced, int tackles for loss, int plays run)

Example: Defense team1 = new Defense(250, 67, 10, 2, 4, 57);

In this class should be the total defense and defensive efficiency calculations:

**TotalDefense** = passing yards + rushing yards

**DefensiveEff** = (((total defense + (turnovers forced^2) + (tackles for loss^2))/points allowed)/ plays run)

Team class

This class will gather all the calculations and display them.