```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt


class TeamStatistics:
    def __init__(self):
        self.wins = 0
        self.draws = 0
        self.losses = 0
        self.goalScored = 0
        self.goalConceded = 0
        self.pointsCulmulative = []
        self.goalScoredCulmulative = []
        self.goalConcededCulmulative = []

    def Output(self, name):
        print("%-16s: W - %2d, D - %2d, L - %2d, Points - %2d, Goals Scored - %2d, Goals Conceded
- %2d"
              % (name, self.wins, self.draws, self.losses, self.GetPoints(), self.goalScored,
self.goalConceded))

    def GetPoints(self):
        return self.wins * 3 + self.draws * 1

    def IncrementWin(self):
        self.wins += 1

    def IncrementDraw(self):
        self.draws += 1

    def IncrementLoss(self):
        self.losses += 1

    def AddGoalScored(self, goals):
        self.goalScored += goals

    def AddGoalConceded(self, goals):
        self.goalConceded += goals

    def LogGame(self):
        self.pointsCulmulative.append(self.GetPoints())
        self.goalScoredCulmulative.append(self.goalScored)
        self.goalConcededCulmulative.append(self.goalConceded)
```

```
    def PlotCulmulativeStatistics(self, title):
        df = pd.DataFrame({"Points" : self.pointsCulmulative, "Goals Scored" :
self.goalScoredCulmulative, "Goals Conceded" : self.goalConcededCulmulative})
        ax = df.plot(title = title)
        ax.set_xlabel("Games played")
        #plt.savefig("Output/" + title + "_18-19" + ".png")

df = pd.read_csv("season-1819.csv")
teams = {}


for i in range(df.shape[0]):
    teamH = df["HomeTeam"].values[i]
    teamA = df["AwayTeam"].values[i]
    goalsH = df["FTHG"].values[i]
    goalsA = df["FTAG"].values[i]

    if not teamH in teams:
        teams[teamH] = TeamStatistics()
    if not teamA in teams:
        teams[teamA] = TeamStatistics()

    teams[teamH].AddGoalScored(goalsH)
    teams[teamH].AddGoalConceded(goalsA)
    teams[teamA].AddGoalScored(goalsA)
    teams[teamA].AddGoalConceded(goalsH)

    if goalsH > goalsA:
        teams[teamH].IncrementWin()
        teams[teamA].IncrementLoss()
    elif goalsH < goalsA:
        teams[teamH].IncrementLoss()
        teams[teamA].IncrementWin()
    else:
        teams[teamH].IncrementDraw()
        teams[teamA].IncrementDraw()

    teams[teamH].LogGame()
    teams[teamA].LogGame()

for name in sorted(teams):
    teams[name].Output(name)
    teams[name].PlotCulmulativeStatistics(name)
```