Live Session Assignment 9
Due: 11/14/2016

The CHF dataset comes from the MedPAR dataset. MedPAR is a file that is distributed by CMS (the entity that administers the Medicare program). The file contains all inpatient Medicare admissions. The documentation for the full file may be found here:
http://www.cms.gov/Research-Statistics-Data-and-Systems/Files-for-Order/LimitedDataSets/Downloads/FY10MedPARDec10Layout.pdf

Use this Data Dictionary to solve the problems in this assignment:

Data Element	Definition	Values
Patient ID	Patient ID Number	Numeric
LOS	Length of Stay	Numeric
Age	Patient Age Category	1 = less than 25
		2 = 25 - 44
		3 = 45 - 64
		4 = 65 - 69
		5 = 70 - 74
		6 = 75 - 79
		7 = 80 - 84
		8 = 85 - 89
		9 = 90 and over
Sex	Patient Gender	0= Unknown; 1= Male; 2= Female
AmtReim	Amount Paid by Medicare	In dollars
TotAccomChg	Total Accommodation Charges	In dollars
TotDeptChg	Total Departmental Charges	In dollars
NumDxCodes	Number of Diagnosis Codes on Claim	Numeric
admsrc	Admission Source	See page 77 in link above
dischdest	Discharge Destination	See page 73 in link above
drgcode	MS-DRG Code	Values vary

Using R for Descriptive Statistics and Charts (include your scripts in your answers)

1. Show the mean for Amount Paid by Medicare, Total Accommodation Charges, and Total Departmental Charges

2. Show the standard deviation for Amount Paid by Medicare, Total Accommodation Charges, and Total Departmental Charges

3. Use `tapply()` to compute the mean for Amount Paid by Medicare, Total Accommodation Charges, and Total Departmental Charges, by gender

4. Create a boxplot for Amount Paid by Medicare, Total Accommodation Charges, and Total Departmental Charges by gender

5. Create a histogram for the following variables and describe what you see for each:

   a. Accommodation charges
   b. Gender
   c. Age category

6. Graph the count of each gender for each admission source using a bar plot

7. Using a bar plot, plot the mortality rate for MS-DRG 292 and MS-DRG 293

8. You must determine if the average length of stay (LOS) for patients with MS-DRG 291 in the CHF dataset is significantly different than the national average of 6 days. State your hypotheses (null and alternative) and interpret your results
   hint: use a 1-sample t-test (google it!)