

**Exercise br2. With R**

The file br2.dat contains data on 1080 houses sold in Baton Rouge, Louisiana during mid-2005. The data include sale price and the house size in square feet. Also included is an indicator variable TRADITIONAL indicating whether the house style is traditional or not.

1. For the traditional-style houses estimate the linear regression model  $PRICE = b_1 + b_2SQFT + e$ . Provide an interpretation of the slope and compute confidence interval for the estimated coefficient  $b_2$
2. Test the null hypothesis that the slope is zero against the alternative that it is positive, using the  $\alpha=0.01$  level of significance.
3. By considering the total sample of houses, estimate the linear regression model  $PRICE = b_1 + b_2TRADITIONAL + e$ . Provide an interpretation of the  $b_2$  coefficient and an estimation of the confidence interval by considering  $\alpha=0.05$ ;
4. Using the linear model in (3), test the null hypothesis that the slope is zero against the alternative that it is positive, using the  $\alpha=0.05$  level of significance.