Exercise 1, Birth Weight and Mother's Weight

Story

There has been a study of 189 women to find out which factors may influence the birth weight of a baby. We would like to study whether the weight of the mother is associated with the weight of the baby.

Data

- ID: Id of observation
- LOW: Indicator of low birth weight
- AGE: Age of mother
- LWT: Mother's weight in pounds
- RACE: Race of mother
- SMOKE: Smoking status
- PTL: History of Premature Labor
- HT: Indicator of hypertension
- UI: Presence of Uterine Irritability
- FTV: Number of Physician Visits During the First Trimester
- BWT: Birth weight in grams

Exercise

1. Get the data lbw.txt. We would like to compare birth weight for different weight of mothers'.
2. Create a new variable Weight_group grouping maternal weight four equally sized groups.
3. Illustrate the birth weight in the four weight groups with a figure.
4. Is the mean birth weight the same in the four maternal weight groups?
5. Remember to check the model assumptions.
6. Use pairwise tests adjusting for multiplicity to see where there might be differences.

Hint

Find the quartiles of mother's weight using summary() (just read them from the screen)

```
summary( BWTdata$LWT)
```

Weight_group should be a new column in the data frame with value 1 for the lightest mothers, 2 for the next group, 3 for the third group and 4 for the heaviest mothers.

```
BWTdata$Weight_grp[BWTdata$LWT < p25]<-1

BWTdata$Weight_grp[BWTdata$LWT >=  p25 & BWTdata$LWT < p50]<-2
```

```
BWTdata$Weight_grp[BWTdata$LWT >=  p50 & BWTdata$LWT < p75]<-3

BWTdata$Weight_grp[BWTdata$LWT >=  p75]<-4
```