The data and variables are described in the readme.txt file. Choose one of the categories to work with.

1. Describe the data. Provide interesting statistics that describe the key variables. You want to provide a "standard" table of mean, std, etc., of key variables.
2. Estimate the following (Logit) model

$$u_{ijt} = \alpha p_{jt} + x_j\beta + \xi_{jt} + \varepsilon_{ijt}, i = 1,\dots,I, j = 1,\dots,J, t = 1,\dots,T$$

where ε_{ijt} is distributed i.i.d. extreme value. For characteristics use UPC dummy variables. Define market shares as the quantity divided by the number of shoppers that shopped at each store for each week (the custcoun variable). Estimate the model using OLS and IV. For IV use the wholesale price (you have to recover this one from the margin variable). Report estimated coefficients and standard errors.

3. Estimate the following random coefficients Logit model

$$u_{ijt} = \alpha_i p_{jt} + x_j\beta + \xi_{jt} + \varepsilon_{ijt}, i = 1,\dots,I, j = 1,\dots,J, t = 1,\dots,T$$

Where $\alpha_i = \alpha + \pi \cdot inc_i + \sigma v_i$ and (α, π, σ) are parameters to be estimated, inc_i is the income of consumer i and v_i is an individual specific attribute. Assume that $v_i \sim N(0,1)$ and inc_i is distributed log normal with a mean and standard deviation that varies by store as given is the file demo.xlsx.

\alpha is the only random-coefficient variable