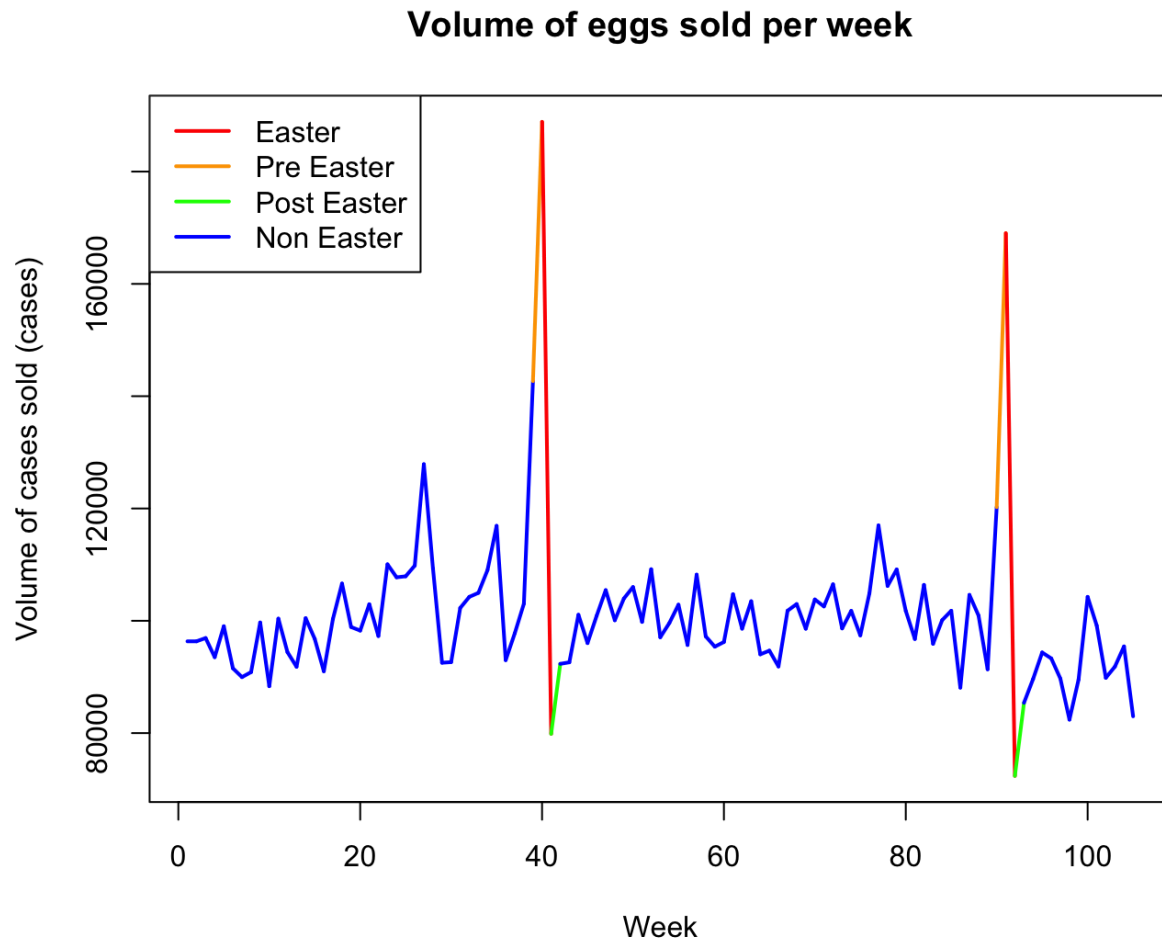
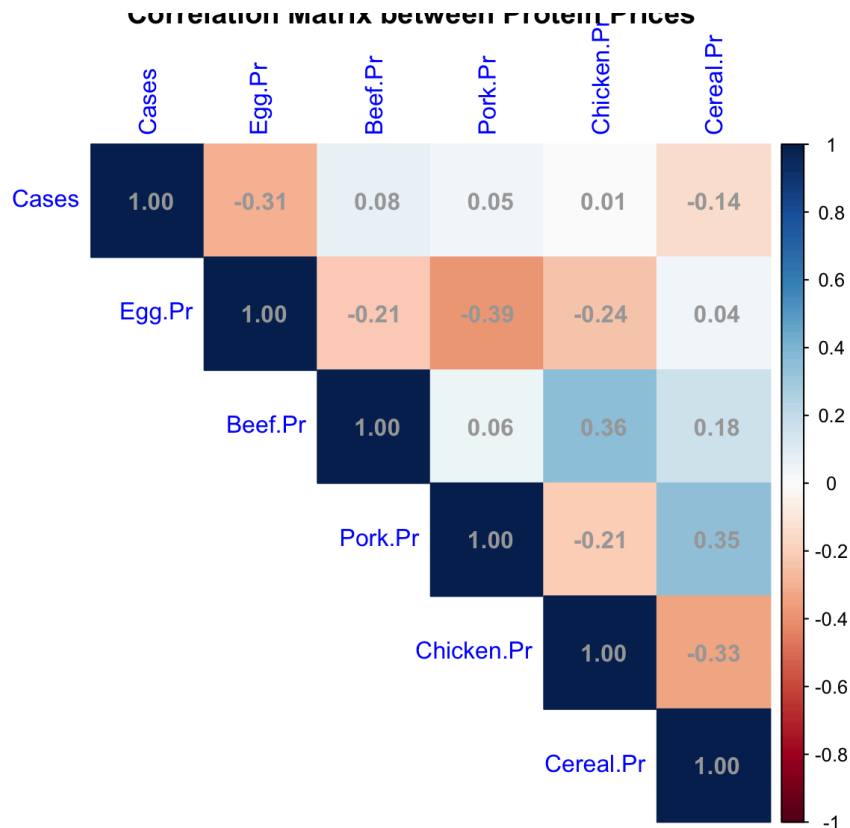


Use dataset Eggs from package BCA (command : data(BCA)). this dataset is an example of time series concerning sales of eggs. Please analyze the dataset, using appropriate charts.  
Create charts showing the **most important factors affecting volume of sold eggs**.



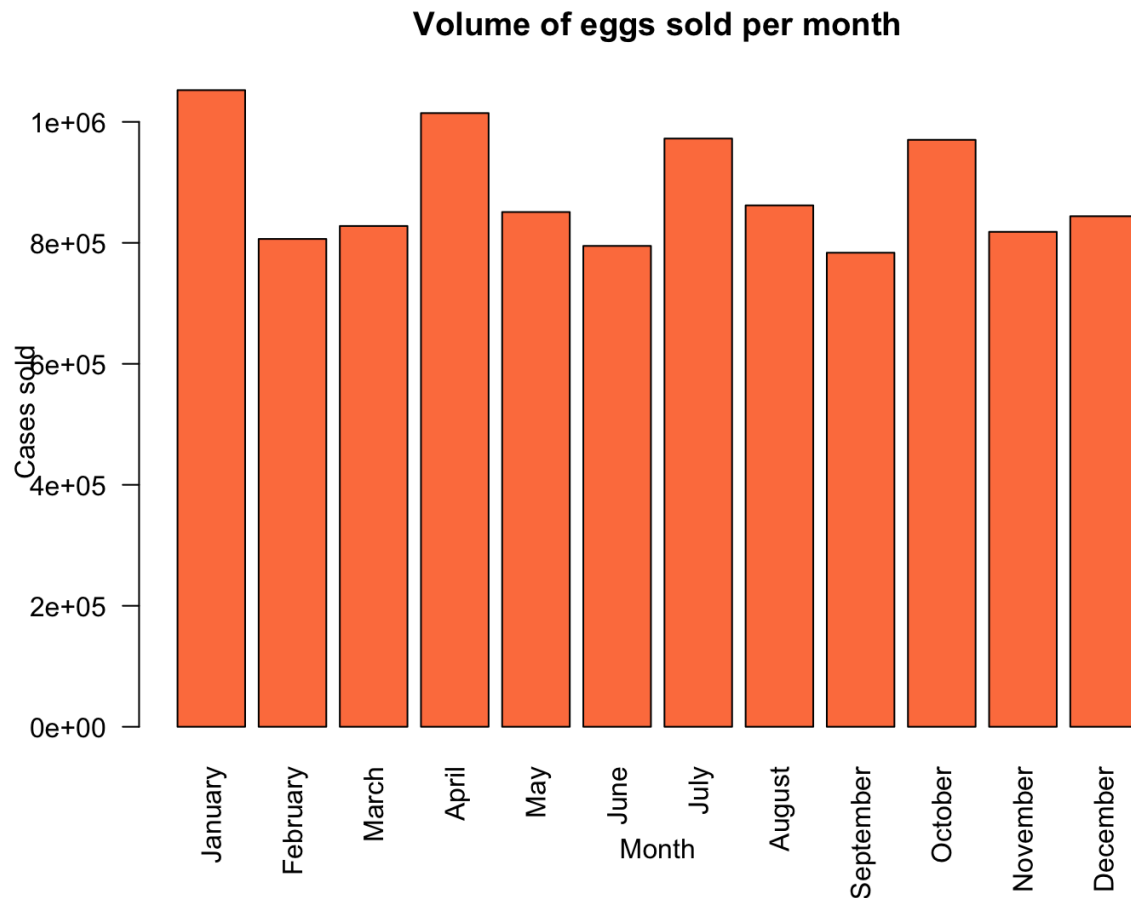
**Graph 1: Time series of eggs sold**

Average volume of cases sold per week was about 100.000 for the Non-Easter period. During 100 weeks observation, there were 2 significant increases which was right before Easter period, the numbers reached was almost double the average cases sold per week. The two points witnessed highest cases sold were at the start of Easter; therefore, when the numbers started to rise was the Pre-Easter and Non-Easter period (right before Pre-Easter). Then it dropped heavily to below average number of cases sold per week during Easter, and recovered during Post-Easter.  
-> It shows that Easter was the important factor



**Graph 2: Correlation Matrix between Product Prices**

- The number of eggs sold has a positive correlation coefficient with the prices of beef, chicken and pork. On the contrary, the correlation coefficient between egg price and the number of egg trays sold is negative (-0.31). From this, we can understand that egg price is a quite important factor when customers consider buying eggs, the higher the price, the fewer customers decide to buy eggs.
- When looking at the correlation coefficient between egg price and the prices of the remaining proteins, we see that they are all negative. That means that if egg price increases, the prices of the remaining proteins decrease, causing more customers to choose to buy beef, chicken, pork instead of buying eggs, thereby reducing the number of egg cases sold.
- Also for breakfast option, the two popular selections are eggs and cereal, which can be explained for correlation coefficient between Cereal.Pr and cases. It is -0.14, when a customer buys cereal, there are likely less chances they buy eggs.



**Graph 3: Total of cases sold trend categories in months**

Top 4 months got highest eggs sales are: January, April - which is Easter Day, July and October. Although according to graph 1, the Pre-Easter period witnessed significant increase in eggs sales during the year, however, April only stand second in top sales.

**Conclusion:** Above three graphs, graph 1 shows the most significant numbers in cases sold among others. Therefore, the most important factor affecting **volume of sold eggs is Easter**.