Case: Server Downtime[1]

After getting outstanding grades in high school and scoring very high on his ACT and SAT tests, Clayton Haney had his choice of colleges but wanted to follow his parents' legacy and enrolled at Northwestern University. Clayton soon learned that there is a big difference between getting high grades in high school and being a good student. Although he was recognized as being quite bright and very quick to pick up on things, he had never learned how to study. As a result, after slightly more than two years at Northwestern, Clayton was asked to try his luck at another university. To the chagrin of his parents, Clayton decided that college was not for him.
After short stints working for a computer manufacturer and as a manager for a Blockbuster video store, Clayton landed a job working for the EDS company. EDS contracts to support information technology implementation and application for companies in the United States and throughout the world. Clayton had to train himself in virtually all aspects of personal computers and local area networks and was assigned to work for a client in the Chicago area.

Clayton's first assignment was to research the downtime on one of the client's primary network servers. He was asked to study the downtime data available and to make a short presentation to the company's management. The downtime data are shown in the following table. Although Clayton is very good at solving computer problems, he has had no training or experience in analyzing data, so he is going to need some help.

A first look at the data Clayton has collected is presented in the table:

Problem Experienced	date	Downtime (minutes)
Weekly Virus Scan	03/01/2016	45
Lockup	03/01/2016	25
Memory Errors	05/01/2016	14
Memory Errors	06/01/2016	10
Lockup	08/01/2016	26
Weekly Virus Scan	10/01/2016	43
Lockup	10/01/2016	22
Memory Errors	11/01/2016	10
Memory Errors	11/01/2016	19
Lockup	16/01/2016	42
Weekly Virus Scan	17/01/2016	45
…		
(… the complete data array is in the excel file serverevents.xlsx)		

Required Tasks:

1. Construct a frequency distribution showing the number of times the server was down for each downtime cause category.
2. Develop a bar chart that displays the data from the frequency distribution in question 1.
3. Develop a histogram that displays the downtime data.
4. How does the type of problem experienced affect downtime?
5. Develop a pie chart that breaks down the percentage of total downtime that is attributed to each downtime cause during the period.
6. Prepare a short written report that discusses the downtime data. Make sure you merge the graphs and charts into the report.

[1] Groebner D.F. , Shannon P.W. , Fry P.C. ; *Business Statistics: A Decision-Making Approach*; Pearson, 2014, modified B.F.C.