**Assignment #2 (5%)**

**(Due date: Monday, October 17th, 2021)**

* Work in teams of 1, 2, or 3.
* Submit as a Word document or pdf. Copy and paste your SPSS charts into the document.
* Make sure the names of each group member are on the document
* Only one group member should submit

**Question 1:** (7 marks)

The number of sick days due to colds and flu last year was recorded by a sample of 14 police officers.

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| **Number of**  **sick days** | **8** | **3** | **5** | **6** | **6** | **7** | **2** | **10** | **14** | **11** | **28** | **10** | **14** | **18** |

Use **SPSS** to draw a parallel (horizontal) **box-plot** along with the table showing the minimum value, the maximum value and the quartiles (Q1, Q2, and Q3). What can you **observ**e about the data from the box plot? (You can import into **SPSS** from the **Excel** file: *STAT 1123 Assignment 1 Data).*

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**Question 2:** (13 marks)

A criminal justice researcher wants to determine if the unemployment rate influences the crime rate (per 100,000). She found data on both variables for the 25 largest cities in her region. Toward that goal, the researcher would like to use the unemployment rate to predict the crime rate (per 100,000). The results are stored in the **Excel** data file. (*STAT 1123 Assignment 1 Data).*

1. Plot a scatter diagram for the ***unemployment rate*** and ***crime rate*** (per 100,000). Draw a scatter diagram with regression line and regression equation. *(Do not forget about the title, regression equation, coefficient of determination* ***r2****, and axis labels).*
2. State the value of the coefficient of determination **R2**, and interpret its meaning.
3. Determine and interpret the coefficient of correlation, **r**.
4. Interpret the **slope** of the regression line.
5. Use the regression equation to **predict** the crime rate (per 100,000) for a city with an unemployment rate of 7.0 percent (*Do not convert percent to decimal form*).

