# Practical 7 – CP2403 – Due 04 January 2020 – 5pm

Ensure you add you name to the top of the Jupyter notebookbefore submission

**Part 1** – Download the Jupyter notebook for Module 7 and run the notebook

**Part 2**

Download the Jupyter Notebook Template for Prac 7 from LearnJCU. Complete the template & run the code. Refer to Module 7 Lecture Jupyter Notebook for help

Complete the questions in Part 3 as you work on the Prac 7 template

**Part 3**

**Scenario 1**

We want to find out the association between electricity use per person (relectricperperson (x)) and oil use per person (oilperperson (y))

|  |
| --- |
| **Step 1: hypothesis** |
| Null hypothesis (Ho):  The more electric person use is the lesser the oil they consume. |
| **Step 2: Data Selection** |
| Electric and Oil use per person in country |
| **Step 3: Assess the evidence** |
| Scatter Plot  A close up of a map  Description automatically generated |
| Pearson correlation (r): |
| p: 1.00 e-05 |
| **Step 4: Draw Conclusion** |
| There is a decent positive relationship between electricity used per person and oil use per person. |

**Scenario 2**

We want to find out the association between CO2 emission (co2emissions (x)) and oil use per person (oilperperson (y))

|  |
| --- |
| **Step 1: hypothesis** |
| Null hypothesis (Ho):  The more CO2 Emission is the lesser oil consumed per person. |
| **Step 2: Data Selection** |
| CO2 Emission and Oil user per person in Country. |
| **Step 3: Assess the evidence** |
| Scatter Plot  A close up of a map  Description automatically generated |
| Pearson correlation (r): |
| p: 0.72 |
| **Step 4: Draw Conclusion** |
| No Relation with weak relationship going to positive between CO2 Emission and Oil Use per person. |

**Scenario 3**

We want to perform regression analysis between electricity use per person (relectricperperson (x)) and oil use per person (oilperperson (y))

|  |
| --- |
| **1: Scatter plot with regression line** |
| A close up of a map  Description automatically generated |
| **2: Regression Analysis results** |
| A screenshot of a social media post  Description automatically generated |
| **3: Regression line – if valid** |
| oilperperson = b + m(relectricperperson)  oilperperson= 0.67 + 0.0005(relectricperperson) |
| **4: Residual plot – if required** |
| A screenshot of a social media post  Description automatically generated |
| **5: Conclusion from residual plot – if valid** |
| The model accuracy is still not balanced which most of the data did not meet the expectation at the normality of the data and it have weak positive relationship. |

**Scenario 4**

We want to perform regression analysis between CO2 emission (co2emissions (x)) and oil use per person (oilperperson (y))

|  |
| --- |
| **1: Scatter plot with regression line** |
| A screenshot of a social media post  Description automatically generated |
| **2: Regression Analysis results** |
| A screenshot of a social media post  Description automatically generated |
| **3: Regression line – if valid** |
| oilperperson = b + m(co2emissions)  oilperperson = 1.4561+1.829-12(co2Emissions) |
| **4: Residual plot – if required** |
| A screenshot of a social media post  Description automatically generated |
| **5: Conclusion from residual plot – if valid** |
| The model accuracy is still not balanced which most of the data did not meet the expectation at the normality and linearity of the data and it have very weak – normal relationship. |

**Scenario 5**

We want to perform regression analysis between electricity use per person (relectricperperson (x)) and oil use per person (oilperperson (y)) for LOW CO2 emission countries

|  |
| --- |
| **1: Scatter plot with regression line** |
| A close up of a map  Description automatically generated |
| **2: Regression Analysis results** |
| A screenshot of a social media post  Description automatically generated |
| **3: Regression line** |
| oilperperson = b + m(co2emissions)  oilperperson = 0.8962+0.0007(co2emissions) |
| **4: Residual plot – if required** |
| A screenshot of a social media post  Description automatically generated |
| **5: Conclusion from residual plot – if valid** |
| The model accuracy is still not balanced which most of the data did not meet the expectation at the normality of the data and have a weak positive relationship. |

**Scenario 6**

We want to perform regression analysis between electricity use per person (relectricperperson (x)) and oil use per person (oilperperson (y)) for MEDIUM CO2 emission countries

|  |
| --- |
| **1: Scatter plot with regression line** |
| A close up of a map  Description automatically generated |
| **2: Regression Analysis results** |
| A screenshot of a cell phone  Description automatically generated |
| **3: Regression line** |
| oilperperson = b + m(co2emissions)  oilperperson = 0.5062+0.0004(co2emissions) |
| **4: Residual plot – if required** |
| A screenshot of a social media post  Description automatically generated |
| **5: Conclusion from residual plot – if valid** |
| The model accuracy is balanced which most of the data are equally distributed and having decent positive relationship). |

**Scenario 7**

We want to perform regression analysis between electricity use per person (relectricperperson (x)) and oil use per person (oilperperson (y)) for HIGH CO2 emission countries

|  |
| --- |
| **1: Scatter plot with regression line** |
| A close up of a map  Description automatically generated |
| **2: Regression Analysis results** |
| A screenshot of a social media post  Description automatically generated |
| **3: Regression line** |
| oilperperson = b + m(co2emissions)  oilperperson= 0.5552+0.0005(co2emissions) |
| **4: Residual plot – if required** |
| A screenshot of a social media post  Description automatically generated |
| **5: Conclusion from residual plot – if valid** |
| The model accuracy is still not balanced which most of the data did not meet the expectation at the normality of the data and having decent positive relationship. |