# Practical 8 – CP2403

(Please ensure you show your work to your tutor once completed as each practical is 3 marks.)

**Part 1** – Download the Jupyter notebook for Module 8 and run the notebook

**Part 2**

Download the Jupyter Notebook Template for Prac 8 from LearnJCU. Complete the template & run the code. Refer to Module 8 Lecture Jupyter Notebook for help

Complete the questions in Part 3 as you work on the Prac 8 template

**Part 3**

**Scenario 1**

Predict co2emission(y) using relectricperperson(x1) and oilperperson(x2)

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| **1: Regression Analysis results** |
|  |
| **2: Regression equation** |
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**Scenario 2**

Predict employrate (y) using linear regression. Use relectricperperson (x) as the explanatory variable

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| **1: Scatter plot** |
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| **2: Regression Analysis results** |
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| **3: Regression equation (Hint : Slide 12)** |
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**Scenario 3**

Predict employrate(y) using linear regression. Use relectricperperson(x) – order 2 as the explanatory variable

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| **1: Scatter plot with regression line** |
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| **2: Regression Analysis results** |
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| **3: Regression line (Hint: slide 13)** |
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**Scenario 4**

Perform multiple and polynomial regression between oilperperson(x1), co2emissions(x2), relectricperperson(x3 - order 2) and employrate(y)

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| **1: Regression Analysis results** |
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| **2: Regression line (Hint: slide 17)** |
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| **3: qqplot** |
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| **4: Conclusion from qqplot (Hint : slide 18)** |
|  |
| **5: percentage of observations over 2 standardized deviation** |
|  |
| **6: percentage of observations over 2.5 standardized** |
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| **7: Conclusion from observations over 2 std and 2.5 std (Hint : Slide 19)** |
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**Scenario 5**

Experiment with multiple and polynomial regression between oilperperson(x1), co2emissions

(x2), relectricperperson (x3) and employrate (y)

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| **1: Regression Analysis results** |
|  |
| **2: Regression line** |
|  |
| **3: qqplot** |
|  |
| **4: Conclusion from qqplot** |
|  |
| **5: percentage of observations over 2 standardized deviation** |
|  |
| **6: percentage of observations over 2.5 standardized** |
|  |
| **7: Conclusion from observations over 2 std and 2.5 std** |
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