



Assessment Task

Qualification national code and title	ICT50220 Diploma of Information Technology (Advanced Programming)
Unit/s national code/s and title/s	ICTDAT501 Gather, analysis and Verify data from different source inputs ICTDAT502 Conduct significance tests ICTDAT503 Use unsupervised learning for clustering

Assessment type (☑):

- ☐ Questioning (Oral/Written)
- ☐ Practical Demonstration
- ☐ 3rd Party Report
- ☒ Other – Project/Portfolio (*programs*)

Assessment Resources:

Personal computer with Python IDE (PyCharm or similar) and internet access.
Access to Blackboard shell.



Assessment Instrument:

Assessment: Optimizing price

In this Assignment, you will look at optimizing price under several different scenarios. You will be asked to put yourself in the role of data analyst, and determine how companies should adjust their pricing to maximize profits.

Task 1 - Assess price in a scenario: open task 1 Excel file and calculate the Contribution Margin and Profit based on old fashion assess price.

Task 2 - Gather data to set price: open task 2 Excel file and use linear interpolation to fill in the missing price gaps. Hint: look at green cells for understanding how linear interpolation works. From Task 2 Excel file you can understand as price rise, the number of units that we sell falls, so we are equipped to begin make a decision about what is the right price for this particular product. Please answer this question: How does price affect both supply and demand?

Task 3 - Estimate Price Elasticity: draw scatter plot for the complete task 2 excel file and add Trendline to the plot (Right click on plot dots / add Trendline). From Trendline options, compare Linear Demand curve with power Demand curve. You should draw two plots one based on Linear and other based on Power. Do not forget to select display equation on chart and display R squared value on chart. Compare these two plots and explain your results and understanding.

Task 4 - Business forecasting: Open task 4 Excel file. You should Develop a simple five years forecast based on demand, prices and the effect of that competition will have on our business. CAGR is Compounded annual growth rate.

Assumptions:

- Total market demand that is demand for our product is going to grow at a 16% rate over time.
- The average market price is going to grow at a 10% rate over time.
- Unit cost increasing by 3% per year.

Please answer these questions:

What is this market going to look like over time? Fill the Excel file.

Under what condition would you most likely see additional competitors entering the market for your products?