Coursework I – Database Design

The SuperSales Company currently keeps its sales data in a spreadsheet as follows. Each salesperson is identified by a salesperson's number, and their sales activities are recorded and aggregated for each month of a year in the spreadsheet. For example, the first row of the table records that John Smith has sold A4 Paper to David Jones in March 2017, and £51.20 in the third row (in the Total Sales column) shows the total sales that John Smith has achieved for that month. For this exercise, if a salesperson sold the same item to the same client more than once within a single month, then such sales are assumed to be aggregated already in the Quantity Sold column. Also, Total Sales for each Salesperson needs to be recorded in the database, rather than to be calculated from the sales data when queried.

Month	Salesperson Number	Salesperson Name	Client Number	Client Name	Product Number	Product Description	Unit Price (£)	Quantity Sold	Total Sales (£)
March 2017	S103423	John Smith	C123493	David Jones	P1023-01	A4 Paper	1.20	6	
			C123493	David Jones	P2137-12	DVD-R Disk	0.70	30	
			C123486	Andrew Bell	P7387-45	Batteries	2.30	10	51.20
	S205326	Helen Davies	C125493	Lucy Jones	P1023-01	A4 Paper	1.20	10	
			C234564	Clair Walker	P2137-12	DVD-R Disk	0.70	20	
			C343436	Ralph White	P7399-15	Cartridges	2.50	10	51.00
April 2017	S103423	John Smith	C123493	David Jones	P1023-01	A4 Paper	1.20	10	
			C123493	David Jones	P2137-12	DVD-R Disk	0.70	20	
			C123493	David Jones	P7399-15	Cartridges	2.50	5	38.50
	S205326	Helen Davies	C125493	Lucy Jones	P1023-01	A4 Paper	1.20	10	
			C023567	Nick Gray	P2137-12	DVD-R Disk	0.70	20	
			C034956	Steve Grant	P7399-15	Cartridges	2.50	10	51.00
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You are required to:

1. With the aid of diagrams, identify the functional dependencies that you would expect to hold in this design. State any assumptions that you make about the data.

2. Derive a set of 3NF relations from this design.

3. Explain in what way your normalised design is better than the spreadsheet design.

Coursework Due: 15 November 2018