ANN ML Regression Python Coding (40 marks)

Using the following **input vector** and **weights matrix below** from ML Task Two, code a neural network model using python

i. First write a function for binding the input values in the entire table below between **0 &1 (refer to slides & class examples)** to form the ***input vectors*** and the ***output target scalar*** **(10 marks)**

	Input1	Input2	Input3	Expected Output
Epoch1	30	40	50	20
Epoch2	40	50	20	15
Epoch3	50	20	15	60
Epoch4	20	15	60	70
Epoch5	15	60	70	50
Epoch6	60	70	50	40

- **Outer Layer Weight Matrix:**

$$\begin{pmatrix} \mathbf{0.2} & \mathbf{0.3} & \mathbf{0.2} \\ \mathbf{0.1} & \mathbf{0.1} & \mathbf{0.1} \end{pmatrix}$$

- **Hidden Layer Weight Matrix:**

$$(\mathbf{0.5} \quad \mathbf{0.1})$$

ii. Train the neural network using **back propagation** and **delta weight updates (refer to slides and class workings)** and output the **final trained weight matrices (30 marks)**