**NON-LINEAR REGRESSIONS**

**Backward Elimination Method (BEM)**

* A **feature selection** technique.
* Means it is used for **removing** features which have **less or no impact** on the dependent variable.
* It is the **fastest** ML building method.

**Types of ML Building Model**

* All-in
* Backward elimination
* Forward selection
* Bidirectional elimination
* Score comparison

**Steps to Apply BEM**

* **Step 1:** A significance level (SL) is **selected** for the model i.e. 0.05.
* **Step 2:** **Provide** model the dataset & predictor variables.
* **Step 3:** **Choose** the predictor with **highest P-value** (probability value).

If ***P-value > SL*** or ***P-value > 0.05***:-

* **Step 5:** **Remove** that **predictor** row.
* **Step 6:** **Rebuild** the model with rest of the data.

**Significance Level**

**ἀ = P(type|error)**

* ***ἀ*** denotes **significance level**.
* Its value is generally **0.05** is most settings.
* A **high P-value** shows that an event must have occurred due to **random chances**.

**Polynomial Regression**

**Y = b0 + b1x1 + b2x12 + b2x13 + ... + bnx1n**

* Are actually series of **linear** regression lines.
* The **more** the ***datapoints***, the **more** the ***curve like*** structure.

