1_Types of Data:

Qualitative Data:

Let's take a look at qualitative data first. This type of data is categorical .. divided into (Nominal and Ordinal).

Nominal Data:

Categorical data but not ordered Ex: the gender of family (male of female) _ languages (Arabic-English-German)

Ordinal Data:

Categorical and Ordered Data Ex: Opinion (Agree-Disagree- Mostly agree- Neutral- Mostly disagree)

Quantitative Data:

Now let's turn our attention to the features that indicate some kind of quantity or measurement. And it is numerical data. Divided into Discrete Data and Continuous Data

Discrete Data:

Discrete data can take only discrete values. Discrete information contains only a finite number of possible values. Those values cannot be subdivided meaningfully. Here, things can be counted in whole numbers.Example: Number of students in the class

Continuous Data:

Continuous data is data that can be calculated. It has an infinite number of probable values that can be selected within a given specific range.Example: Temperature range

2_Websites Contain life datasets:

1. World Health Organization
2. Google Public Data Explorer
3. World Bank
4. Data Bank
5. Our World in Data

3_Role of Statistical in AI :

1. Predictive Validation is a fundamental principle of statistics and machine learning. It is used to determine if the scores in one part of the experiment can accurately predict performance in another part of the experiment. It
2. Data visualization and exploration was an idea that helped to discover new and unexpected insights from data.

3. Prediction and inference feedback are popularly used in self-driving cars so that they can learn to drive with minimal assistance from a human. Generative adversarial networks or GANs enable reinforcement learning problems to be solved automatically. This forms a link between Artificial Intelligence and parallel processing. GANs essentially link prediction with generative models.
4. Deep learning makes flexible and non-linear predictions using a large number of features. The building blocks of deep learning include logistic regression, multilevel structure, and Bayesian inference. It can solve many prediction problems, ranging from consumer behavior to image analysis. Such statistical algorithms are used to fit large models in real-time.

4_ What is predictive analysis ?

Predictive analytics is a branch of advanced analytics that makes predictions about future outcomes using historical data combined with statistical modeling, data mining techniques and machine learning. Companies employ predictive analytics to find patterns in this data to identify risks and opportunities.

5_Types of Statistical Test :

- Pearson Correlation : Tests for the strength of the association between two continuous variables
- Chi-Square : Tests for the strength of the association between two categorical variables
- Paired T-Test : Tests for the difference between two variables from the same population (e.g., a pre- and posttest score)
- ANOVA : Tests for the difference between group means after any other variance in the outcome variable is accounted for (e.g., controlling for sex, income, or age)

6_How to convert data to normal distribution ?

By using The Central Limit Theorem