**Machine Learning**

->Is about extracting knowledge from data

->It is a research field at the intersection of statistics, artificial intelligence, and computer science

Why Machine Learning

->in early days of "intelligent" application, many systems use hand coded rules of "if" and "else" decision to process data or adjust input

->So instead of using hand coded they came up with AI which is ML

->Disadvantages of using hand coded is that

\*The logic required to make a decision is specific to a single domain and task.

\*Designing rules require a deep understanding of how a decision should be made by a human expert

Problem in ML

->The most successful kinds of ML algorithm are those that automate decision-making process by generalizing from known examples

in this setting is known as SUPERVISED LEARNING

Why Learning

->Python has very important in data science

->it combines the power of general-purpose programming languages with the ease to use o domain-specific scripting languages like MATLAB or R

->Python has libraries for data loading, visualization, statistics, natural languages processing, images processing etc.

->one of the main advantages of Python is the ability to interact directly with the code, using terminal or other tools like jupyter Notebook

Scikit-learn

->is an open source project, meaning that is free to use and distribute, and anyone can obtain the source code to see what is going on behind the scene

libraries and tools

there libraries like NumPy, SciPy, matplotlib, panda and so many others