

1. Artificial Intelligence is the simulation of human intelligence processes by machines, especially computer systems. Specific applications of AI include expert systems, natural language processing, speech recognition and machine vision.

Artificial Intelligence is a method of making a computer, a computer-controlled robot, or a software think intelligently like the human mind. AI is accomplished by studying the patterns of the human brain and by analyzing the cognitive process. The outcome of these studies develops intelligent software and systems.

2. Supervised Learning:

- 1, Supervised learning algorithms are trained using labeled data.
- 2, Supervised learning model takes direct feedback to check if it is predicting correct output or not.
- 3, Supervised learning model predicts the output.
- 4, In supervised learning, input data is provided to the model along with the output.
- 5, The goal of supervised learning is to train the model so that it can predict the output when it is given new data.
- 6, Supervised learning needs supervision to train the model.
- 7, Supervised learning can be categorized in Classification and Regression problems.
- 8, It includes various algorithms such as Linear Regression, Logistic Regression, Support Vector Machine, Multi-class Classification, Decision tree, Bayesian Logic.

Unsupervised Learning:

- 1, Unsupervised learning algorithms are trained using unlabeled data.
- 2, Unsupervised learning model does not take any feedback.
- 3, Unsupervised learning model finds the hidden patterns in data.
- 4, In unsupervised learning, only input data is provided to the model.
- 5, The goal of unsupervised learning is to find the hidden patterns and useful insights from the unknown dataset.
- 6, Unsupervised learning does not need any supervision

to train the model.

7, Unsupervised Learning can be classified in Clustering and Associations problems.

8, It includes various algorithms such as Clustering, KNN, and Apriori algorithm.

3. Python is an interpreted high level programming dialect known for its straight forwardness, flexibility and meaningfulness. It is simple to learn and utilise, object-oriented, interpreted, cross-platform, has an broad standard library, is powerfully written, and supports numerous programming standards.

4. Python is the major code language for AI and ML.

It surpasses Java in popularity and has many advantages, such as a great library ecosystem, good visualisation options, a low entry barrier, Community support, flexibility, readability and platform independence.

5. If you're coding in Python, one of the most important things to remember is the proper indentation of your code. Good Python indentation is necessary to make your code readable and easy to understand, both for yourself and others who may read your code later.

The primary purpose of indentation in python is to define scope of statements such as those within loops, conditions, functions and classes. Consistent and proper indentation is crucial for the interpreter to understand the logical structure of the code.

6. The variable acts as an address for where the data is stored in memory. A Python variable may be assigned a value of one type and then later re-assigned a value of a different type.

A variable can have a short name or a more descriptive name. A variable name must start with a letter or the underscore character. A variable name cannot start with a number.

7. Keywords in python are predefined words that have a special meaning to the interpreter. They are reserved words that are used to perform a specific task in python or programming. Identifiers in python are names given to different parts of a python program like variables, functions, classes.

8. Python has several built-in data types, including numeric types like

Int

Float

Complex

String

Boolean

Collection types

List

Tuple

Dict

Set

Each data type has its own set of properties, methods and behaviour that allow programmers to manipulate and process data effectively in their programs.

9. Syntax of if statement:

```
if(condition):  
    statement
```

If the condition the code block indented below the if statement is executed. If the condition is false, the code block will be skipped.

10. Elif stands for else if and is used in python programming to test multiple conditions. It is written following an if statement in python to check an alternative condition if the first condition is false. The code block under the elif statement will be executed only if its condition is true.

The elif keyword is python's way of saying if the previous conditions were not true, then try this condition.