

Assignment-1

1) Define Artificial intelligence (AI) and provide examples of its applications

A:- AI :-

Artificial intelligence is the simulation of human intelligence processes by machines, especially computer systems. They are designed in a such way that they can perform any dedicated tasks and also take decisions based on the provided inputs. The reason behind its hype around the world today is its act of working and thinking like a human being.

Applications of AI :-

- i) Healthcare
- ii) Social media
- iii) Chatbots
- iv) Automobiles
- v) Finance
- vi) Video game
- vii) Banking
- viii) Digital assistants

4) Robotics

5) Navigation

application of differentiate between supervised and unsupervised learning techniques in ML

Criteria	Supervised Learning	Unsupervised Learning
Definition	Learns by using labelled data	Trained using unlabelled data without any guidance
Type of data	Labelled data	unlabelled data
Type of problems	Regression and classification	Association and clustering
Algorithms	Linear Regression Logistic Regression SVM, KNN etc	k-means c-means APriori

aim	calculate outcomes	Discovers underlying patterns
Application	Risk Evaluation - Iron Forecast sales	Recommendation system Anomaly Detection

3) What is python? Discuss its main features and advantages?

A:- Python :-

Python is a dynamic, high-level, free open source and interpreted programming language. It supports object-oriented programming as well as procedural oriented programming. In python, we don't need to declare the type of variable because it is dynamic typed language.

Features

1) Free and open source :-

python language is freely available

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at the official website and you can download it from the given link. Source code also available as public. So you can download it, use it as well as share it.

2. Easy to code :-

python is a high-level programming language. Python is very easy to learn the languages as compared to other languages as Javascript, Java, C, C++ etc.

3. Easy to Read :-

As you will see, learning python is quite simple. As was already established, python's syntax is really straight-forward. The code block is defined by the indentations rather than by semicolons or brackets.

4. Object-oriented Language

One of the key features of python is object oriented programming. python supports object-oriented language and concepts of classes, object encapsulation etc.

GUI Programming support :

Graphical user interfaces can be made using a module such as PyQt5, PyQt4, wxPython, or Tk in Python. PyQt5 is the most popular option for creating graphical apps with Python.

Advantages :

- * Easy to Read Learn, Python is a simple language to read and learn
- * Reduces maintenance cost
- * Avoid the harm to software Bugs
- * Wide Applicability
- * Easy memory management.

4) What are the advantages of using Python programming language of AI and ML?

A) Simple and Consistence :

Python has the advantage of reasonable code. AI and ML in Python necessitates the resolution of complex algorithms. The simplicity of Python, on the other hand

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ensures that developers can easily write the codes

2. Better library ecosystem :-

The codes are all saved in the PyPI repository. As a result, you should think about checking them out and comparing the various libraries

3. Flexible :-

When talking about python AI, one of the primary reasons business hire expert python developers is because they provide flexibility. The programming language allows you to choose between oops and scripting. You can also consider recompiling the source code to incorporate any changes.

4. Speed of execution :-

Because python is a readable programming language, the formuals can quickly executed ml. Particularly deep learning, necessitates lengthy training sessions, which can last days. python on the other hand, has a faster execution speed is critical.

5. Less coding :-

python for AI and ML has evolved at a rapid pace. As a result, applying the use of numerous alg. when you

Discuss the importance of indentation in python code.

Indentation is very important concept of python because without properly indenting the python code, you will end up seeing `IndentationError` and the code will not get compiled. python uses indentation to indicate the scope of code blocks such as functions, loops, conditionals, classes, etc. python uses indentation instead of brackets to indicate blocks of code. Incorrect indentation could result in error on the off chance that the lines of code were not enough indented. python would not be able to execute the code within the correct order, and the program would not work as intended.

6) Define provide names

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6) Define the variable in python.
provide examples of valid variable names

- * A variable can have a short name (like x and y) or a more descriptive name (age, carname, total volume)
- * A variable must start with a letter and underscore character
- * A variable name cannot start with a number

Examples :

MY var = "John"

age, gender, x25,

7) Explain difference b/w a keyword and an identifier in Python

Keyword	identifier
1) Keywords are predefined word that gets reserved for working program that have special meaning and cannot get used anywhere else	Identifiers are the values used to define different programming items such as variables, integers, structures, unions and others and mostly have an alphabetic character.

2) Specify the type/
kind of entity

3) A keyword should
be in lowercase

4) No special
symbol, punctuation
is used

5) Examples of
keywords are:
int, char, if, while,
do, class etc.

Identify the name
of a particular
entity

An identifier can
be in upper case
or lower case

No punctuation or
special symbol
except 'underscore'
is used

Examples of
identifiers are:
Test, count1,
high-speed, etc.

8) List the basic data types in
available in python;

2.1) Numeric types:

i) Integer

ii) complex number

iii) float

ii) Boolean

3) Set

4) Sequence

i) String

ii) List

iii) Tuple

iv) Dictionary

9) Descriptive

statements

2.1- Conclusive

statements

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2) Boolean data type

3) Set data type

4) Sequence Type

i) strings

ii) List

iii) Tuple

iv) dict

9) Describe the syntax for an if statement in python?

A:- Condition :-

statement 1 statement 2

Here if the condition is true,
if block

All codes considered only
statements to be inside

its block

Syntax :-

if condition ;

statement to execute

if

condition is true

10) Explain the purpose of the `elif` statement in Python.

2) '`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.