ASSIGNMENT - 1

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

   A:- Artificial intelligence is the simulation of human intelligence. This technology came into existence to help humans to solve problems easily with more capability and to increase output in less time.

   APPLICATIONS:

   1.Social media

   2.Smart homes

   3.Health care

   4.Smart phone assistants

   5.Self driving cars etc ..

2. Differentiate between supervised and unsupervised learning techniques in ML.

   A:- In Supervised learning technique, model is trained using labelled data and under supervisor. There are two types of supervised learning techniques: Classification and Regression whereas in Unsupervised learning technique, model is trained using unlabelled data by identifying (or) recognizing the hidden patterns. There are two types of unsupervised learning techniques: Clustering, Association.

3. What is Python? Discuss its main features and advantages.

   A:- Python is a high-level computer programming language. It is OOPS (Object Oriented Programming Language) based programming language. It is used both in frontend and backend development.

FEATURES:

1. Free and open source

2. Easy to code

3. Easy to read

4. Easy to debug

5. Portable language

6. Integrated and interpreted language

7. Dynamic language

8. Object Oriented Programming Language

9. Standard library

ADVANTAGES:

1. Simple language

2. Flexibility

3. Portability

4. Easy to use

5. Rapid development

6. Wide range of libraries and frameworks.

4. What are the advantages of using Python as a programming language for AI and ML?

A:- ADVANTAGES:

1. Flexibility

2. Standard and wide range of libraries

3. Platform independent

4. Easy syntax

5. Less code

6. High performance and speed

7. Rapid development

8. Easy to test, debug, use

5. Discuss the importance of indentation in Python code.

A:- Indentation means spaces. It plays an vital role in python code. It is important because the indentation indicates the block of code and refers to the beginning of code.

6. Define a variable in Python. Provide examples of valid variable names.

A:- Variable is a container used to store values (or) data used in the program. It

refers (or) points to that value so that values can be accessed using variable.

Variable names should be started with alphabets, numbers, underscore only.

EXAMPLES:

Name = 23;

_Marks = 66;

AGE =19; etc ..

7. Explain the difference between a keyword and an identifier in Python.

A:- Keyword is pre-defined (or) specific reserved word which holds special meaning

and purpose.

It cannot be used for variables, functions, classes.

Example:

int, char etc ..

Identifier is another name of the variable.

Example:

name, age etc ..

8. List the basic data types available in Python.

A:- Data types in python are of five types:

1. Numeric datatype:

   i) Integer

   ii) Float

   iii) Complex

2. Sequence datatype:

   i) List

   ii) Tuple

   iii) String

3. Dictionary datatype

4. Set datatype

5. Boolean datatype.

9. Describe the syntax for an if statement in Python.

A:- SYNTAX :

if condition:

**if condition is true then this

block of code is executed**

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

A:- PURPOSE OF ELIF STATEMENT:

elif statement is conditional statement used for testing (or) checking multiple conditions. elif stands for else if. It is written following an if statement in python to check an alternative condition if the first if condition is false. The block under the elif statement will be executed only if its condition is true.

SYNTAX:

if condition:

**if condition is true

then this block of code is executed**

elif condition:

**This condition is checked when if condition is

false. If the elif condition is true, then this block of

code is executed**

else:

**If all the elif conditions are false, then else

block of code is executed.