PYTHON

STANDARD DATA TYPES

- The data stored in memory can be many types.
- For Ex: A person's age is stored as a numeric value and his address is stored as alphanumeric characters.

PYTHON BUILT-IN CORE DATA TYPES

- Numbers.
- String.
- List.
- Tuple.
- Dictonary.

PYTHON NUMBERS

- Number data types store numeric values.
- For Eg: var1=1 var2=10
- Python supports three different numerical types:
- Integers.
- Floating point numbers.
- Complex Numbers.

INTEGERS

- Integers are whole numbers. They have no fractional parts.
- Integers can be positive or negative.
- There are 2 types of integers.
- Integers (Signed) : It is the normal integer representation of whole numbers using the digit 0 to 9.Python provides single int data type to store any integer whether big or small.
- Boolean: These represent the truth value True or False. It is a subtype of integers and boolean values True and False corresponds to values 1 and 0.

DEMONSTRATION OF INTEGER DATA TYPE.

- Addition of two integer number.
- a=int(input (“Enter the value of a:”))
- b=int(input (“Enter the value of b:”))
- Sum=a+b
- Print(“The sum of two integers=“, sum)
- Output:
- Enter the value of a:25
- Enter the value of b:25
- The sum of two integers=50

FLOATING POINT NUMBERS

- A number having fractional part is a floating point number.
- It has a decimal point. It is written in two forms:
- Fractional form: Normal decimal notation e.g.543.25
- Exponent Notation: It has mantissa and exponent.
- Eg.6.7546E2

DEMONSTRATION OF FLOATING POINT

- Calculate Simple Interest.
- Principal=float(input (“Enter the principal amount:”))
- Rate=float(input (“Enter the rate of interest:”))
- Time=float(input (“Enter the time period:”))
- Si=(princ*rate*time) /100
- Print(“The Simple interest=“, si)
- Output:
- Enter principal amount:5000
- Enter the rate of interest:8.5
- Enter time period:5.5
- Simple interest=2337.5

COMPLEX NUMBER

- Python represents complex numbers in the form a+bj.
- Demonstration of Complex numbers:
- Sum of 2 complex numbers.
- a=7+8j
- b=3.1+6j
- c=a+b
- Print("Sum of two Complex numbers ")
- Print(a, "+, b, "=", c)
- Output:
- (7+8j) +(3.1+6j) =(10.1+14j)

STRINGS

- A String is a group of valid characters enclosed in single or double quotation marks. A string can group any type of known characters I.e. Letters, numbers and special characters.
- A python string is a sequence of characters and each character can be accessed by forward indexing or by backward indexing.
- Eg.subj="Computer"

DEMONSTRATION OF STRING

- To input string &print it.
- my_name=input(“What is Your Name? :”)
- Print (“Greetings!!! “)
- Print (“Hello! “)
- Output:
- What is Your Name? : Catherine
- Greetings!!!
- Hello!

LIST

- The List is python's compound data type.
- A list in python represent a list of comma separated values of any data type between square brackets.
- Lists are mutable.

DEMONSTRATION OF LIST

- List1=eval(input (“Enter Elements for List 1;”))
- List2=eval(input (“Enter Elements for List 2:”))
- List=List 1 +List 2
- Print(“List 1:”, List 1)
- Print (“List 2:”, List 2)
- Print (“joined list:”, List)
- Output:
- Enter Elements for List 1:[21, 22,53,20]
- Enter Elements for List 2:[23, 34,21,70]
- List1:[21, 22,53,20]
- List2:[23, 34,21,70]
- Joined List:[21,22,53,20,23,34,21,70]

TUPLE

- The tuple in python‘s compound data type.
- A tuple represents a list of comma separated values of any data type within parentheses.
- Tuples are Immutable.

DEMONSTRATION OF TUPLE

- Program to input 2 tuple.
- tuple1=eval(input (“Enter Elements for Tuple 1:”))
- tuple2=eval(input (“Enter Elements for Tuple 2:”))
- print(“Tuple 1:”, tuple 1)
- print(“Tuple 2:”, tuple 2)
- Output:
- Enter Elements for Tuple 1:(2, 4,6,8)
- Enter Elements for Tuple 2:(3, 5,7,9)
- List 1:(2, 4,6,8)
- List 2:(3, 5,7,9)

DICTIONARY

- Dictionary are unordered collection of elements in curly braces in the form of a key:value pairs that associate keys to values.
- Dictonaries are Mutable.
- As dictionary elements does not have index value, the elements are accessed through the keys defined in key:value pairs.

DEMONSTRATION OF DICTIONARY

- Program to save phone number in dictionary & print it:
- Phonedict={“Sharmi”:9843109372, “Dheeraj”:6381321621, “ Priya”:960042439}
- Output:
- {“Sharmi”:9843109372, “Dheeraj”:6381321621, “ Priya”:9600424239}

PYTHON SETS

- A set is a collection which is unordered and unindexed.
- In python sets are written with curly brackets.
- Example: Create a set.
- thisset= {“apple”, “banana”, “ cherry “}
- Print(thisset)
- Output:
- {‘cherry’, ‘banana’, ‘apple’}

FROZENSET

- Frozenset is a new class that has the characteristics of a set, but its elements cannot be changed once assigned.
- While tuples are immutable lists, frozenset are immutable sets.
- On the other hand, frozenset are hashable and can be used as keys to a dictionary
- Frozensets can be created using the function frozenset ().

THANK YOU