Chapter - 3

String   Avinash

String is a data type of python.
String is a Sequence of characters enclosed in quotes.

We can primarily, write a string in these three ways

(i)   'Harry's'   — Savan invalid   } double
(ii)   "Harry's"   — Valid
(iii)   " Harry"s"   — invalid   }
(iv)   ' Harry"s '   — Valid.   } Single
(v)   " Harry's and Harry"s"   invalid   }
(vi)   ' Harry's and Harry"s '   invalid }
    ''' Harry's and Harry"s '''   Valid | Triple
    add new lines or more then one lines

1. Single quoted strings → a = 'avinash'
2. Double quoted strings → b = "avinash"
3. Triple quoted strings → c = '''avinash'''

String slicing :-

A string in python can be sliced for getting a part of the string

Consider a following string

name = "| A | V | I | N | A | S | H |"   length = 7
           0   1   2   3   4   5   6
        (-7) (-6) (-5) (-4) (-3) (-2) (-1)

(2) # We Can not be change string just like
change name [3 : 5].
that mean we accee any number of string but
we can't be change any number of string.
the index in a string stands forom 0 to
(length -1) in python. In order to
slice a string, we use the following
syntax.

Sl = name [ind_start : ind_end]

First index included → last index is not
included

AVINASH

Sl [0:3] returns " AVI " → characters from 0 to 3
Sl [1:3] returns " VI " → ------------ 1 to 3

↑
(1) # name → "Avinash"

print(name[4])   Print(name[4]) op→ a
o/p - a

print(name[1:4])   op→ VIN

(i) print(name [:4])   that mean print(name[0:4])
(ii) print(name [0:])   that mean print(name[0:6])
          ↳ the length of string   op→ Avinash

Negative indices :-

it can also be used as shown in the figure above (-1) corrospond ing to the (length-1) index , -2 to (length-2)

name = Avinash

Print (name [0 : -1]) → Avinas   and so on
                                        ✓correct/confirmed

Slicing or skip value :-

We can provide a skip value as a part of our value slice like this :

a = "Avinash Pandey"

Print(a [9:12:1] → AvinashPande
print (a[0:12: 2] → Aiahad
print (a [0:12:3] → Anhn

print (a[0: : 2] → Aiahady
                 3

Other advanced slicing techniques

Word = " amazing"
Word [:7] → [0:7] → "amazing"
Word [0:] → [0:7] → "amazing"

String functions :-

Some of the mostly used function to performs operations on or manipulate strings are :

1. Len ( ) Function → this function return the length of the string

   a = amazing
   print (len(a)) → 7 return

2. String . endswith ("ing") →

   this function tells whether the veriable strings ends with the string "ing" or not, It string is "amazing", id return true for "ing" since amazing ends with ing.

   a = "amazing"

   Print (a. endswith ("ing"))

   → True.

3. String . Count ("a") ⇒ Count of total number of accurence of any number character (character and word)

   print (a. Count ("a") → 2.

   in this a 2 timens in this word.

4. String. Capitalize () → This function is Capitalize the first character of a given string.

a = auinans

Print (a. Capitalize ()) → Avinash

5. String. Find ("word / character") →

This function find a word and also character (depend of use) and returns the index of first occurence of that word (that means first time come in string) in the string.

a = "Once upon a time to time"

Print (a. Find ("time")) → 12

6. String. replace ("old word", "new word") →

This function replace the old word with newword in the 'entire' strings.

a = "once upon a time"

Print (a. replace ("n", "t")) →

otce upot a time

Escape sequence characters :-

Sequence of characters after backslash '\':

→ Escape seq char — ↵

i) Comprises of more than one characters but represent one character when used within the string.

Ex   (\n) → newline   → \n
    (\t) → Tab → \t
    (\\) → single quote(s); backslash→\\
    (\') → single quote (') → \'

////

Saathi

Practic Set – 1

Q.1 Write a python program to display a
user entered name followed by Good morni
ng using input () function.

A:

a = input ("Enter your name")

b = ("Good morning," + a)

print b

O|P – Enter your name - Avinash [Enter]

        Good morning, Avinash.

Q.2 Write a program a fill a template
given below with name and date.

letter = ''' Dear <|Name|>
       You are selected!
       <|DATE|> '''

letter = ''' Dear

↳①

② name = input ("Enter your name!")
   date = input (" Enter Date ")

letter = letter . replace ("|Name|" ,
             name)

letter = letter . replace ("|Date|" , date)

Print letter

Q.3 Write a program detect double space in a string.

```
a = (" this is a str with the . : double space")

b = a.find (" " )

print (b) → 22 (it possible otherwise print)
            (-1) d
```

Q.4 Replace the double space from problem 3 with single space.

```
a = (" this is a str with the . double space")

b = a.replace (" " , (" . "))
          double      single
          spac        spac
```

o/p → this is a str with the double space.

Q.5 Write a program to torment the following letter uing escape sequence characters.

letter = " Dear Harry, This python Course is nice . Thanks! "

Ans.

letter = "
           "

Lists and Tuples

Lists :-

Python lists are containers to store a set of value of any data type.

Friends = ["Apple", "Avinash", "Anshu", 32, False]

        ↓   ↓   ↓   ↓
  String   Can store value of any   int   Boolie
                       data type

this is mutable data type of python
       (change)

list indexing :-

Just like a string

    A List can be indexed

L1 = [7, 9, "Harry"]

print(L1[0]) = 7

print(L1[1]) = 9

print (L1[6]) = error

print(L1[0:2]) = [7, 9] list string.

\# Create a list using [ ] Square bracket

\# Change the value of list using.

```
a = [1, 2, 3, 4]
a[0] = 10
print(a) = [10, 2, 3, 4]
```

<u>list slicing :-</u>

```
A = [" Avinash", "Anshu", "Raman", "Pragya", 45]

print(A[0:4])
   = Avinash, Anshu, Raman, Pragya

print(A[-4:])
   Anshu, Raman, Pragya, 45
```

\# <u>list Method :-</u>

Consider the following list.

```
a = [1, 8, 7, 2, 21, 15]
```

a.short   down to up sequence

```
print(a)

[1, 2, 7, 8, 15, 21]
```

#

Q. reverse()

Print (a) = [15, 21, 2, 7, 8, 1]

up to down sequence.

\# a. append (8)

print (a) = adds 8 at the end of the
list

[1, 8, 7, 2, 21, 15, 8]

\# a. insert (2, 52)
  Add 52 in this location in list.

print (a)

[1, 8, 52, 7, 2, 21, 15,]

\# a. pop (2) ⇒ will delete element at index (2)
  and return its value

print(a)
= [1, 8, 2, 21, 15, 8]

\# a. remove (21) ⇒ will remove 21 from the
  list

print (a)

[1, 8, 7, 2, 15]

Avinash Pandey

Tuples

A Tuple is an immutable data-type in python.

"Can not change"

\# Creating a tuple using ( ) parentheses

\# Can not update the value of tuple.

```
a = ()   =   Empty tuple
a = (1)  ⇒  wrong way to declare a single tuple
a = (1,)  ⇒  single tuple element
a = (1, 7, 2) ⇒ more element Tuple.
```

Once defined a tuple elements Can not be altered or manipulated. thatmeans Can't be change in any Condition.

Tuple methods :-

Consider the following

```
tuple
a=( 1, 2, 3, 4, 5)
```

a. Count(1) : a.Count(1) will return number of times 1 occurs in a

print (a.Count(1))

a.index (1) : a.index (1) will return the
index of first occurence of a 1 in a.
that means 1 (Koun si number per hai)
print (a.index (1))

= 0

print (a.index (4))

= 3.

Practice Set - 4

Q.1. Write a program to store seven frutes in
a list entered by user.

Ans

```
a = input (" Enter frutes 1 : " )
b =  ───────────────── 2 : " )
c = - - - - - - - - - 3 : " )
d = - -  - - - - 4 : " )
d = - - - - - - - - 5 : ")
e = - - - - - - - - 6 : " )
f = - - - - - . . 7 : " )


Print ( [ a, b, C, d, e, f, }

op [ " a " , " b ", " c ", " d ", " e "]


and so on.
```

Que-4 = Write a program to sum of Al
        lut with 4 number.

$$a = [\underbrace{a, 5, 7, 8}_{sum}]\ 10, 12, 20]$$ it

print (a[0] + a[1] + a[2] + a[3])

or = 22

— print (sum(a)) —

= 62

Que-5   Write a program to count the number
         of zeros in the following tuple :

a = [7, 0, 8, 0, 10, 0, 15]

print (a.count(0))

3.