# Python Strings

Strings are sequence of Characters

In Python specifically, strings are a sequence of Unicode Characters

- Creating Strings
- Accessing Strings
- Adding Chars to Strings
- Editing Strings
- Deleting Strings
- Operations on Strings
- String Functions

## Creating Strings

In [15]:
```
s1='this is a single quote string'
s2="this is a double quote string"
s3='''this is
gonna in mulitline'''
s4="""this is a triple quote string"""
s5=str("this is a string formed using str function")
s6="this is 'mixed quote' string"
print(s1,s2,s3,s4,s5,s6,sep='\n')
```

```
this is a single quote string
this is a double quote string
this is
gonna in mulitline
this is a triple quote string
this is a string formed using str function
this is 'mixed quote' string
```

# Accessing substring from a string

- Indexing
  - Negative Indexing
  - Positive Indexing
- Slicing
  - Negative Slicing
  - Positive Slicing

In [34]:
```
string="Hello World"
```

In [36]:
```
# Positive Indexing
print(string[0],string[3])

# Negative Indexing
print(string[-1],string[-3],string[-11])
```

```
H l
d r H
```

In [50]:
```
# Positive Slicing
print("without step ----",string[::],string[2:],string[:4],string[2:5],sep='\n')
# using step parameter
print("with step ----",string[::2],string[2::3],string[:4:1],string[2:5],sep='\n')
```

```
without step ----
Hello World
llo World
Hell
llo
with step ----
HloWrd
l r
Hell
llo
```

In [58]:
```
# Negative Slicing
print("without step ----",string[::-1],string[-4:-1],string[-2:-1],string[-5:-2],sep='\n')
# using step parameter
print("with step ----",string[::-1],string[-2::-3],string[:4:-1],string[2:5:-1],sep='\n')
```

```
without step ----
dlroW olleH
orl
l
Wor
with step ----
dlroW olleH
lWlH
dlroW
```

In [82]:
```
string="hii-i-am=john"
print(string[5:2:-1])
print(string[-2:-5:-1])
print(string[-5:-2:1])
```

```
-i-
hoj
=jo
```

## Editing and Deleting in a string

**Strings are immutable - we cannot do changes in a string like editing or deletion but we can delete whole string.**

In [102…
```
s="Hello world"
# s[0]="W" not possible
# del s[3] not possible
del s
```

## Operations on Strings

- Arithmetic Operations

- Relational Operations
- Logical Operations
- Loops on Strings
- Membership Operations

In [132…
```
# Arithmetic
print("This is gonna "+"concatenate "+"using + sign")
print("5 times"*5)
# Relational
print("Delhi">"delhi","Delhi"<"delhi","Delhi"!="delhi",sep=" ")
# Logical
print("Delhi"or "Mumbai","" and "Mumbai"," " and "space")
```

```
This is gonna concatenate using + sign
5 times5 times5 times5 times5 times
False True True
Delhi  space
```

In [134…
```
# Loops in string
for i in "looped string":
    print(i,end=" ")
```

```
l o o p e d   s t r i n g
```

In [136…
```
# Membership
'M' in "mumbai"
```

Out[136… False

## Common Functions

In [150…
```
string="Hello-World"
```

In [158…
```
# len, max, min, sorted
print(len(string),max(string),min(string),sorted(string),sorted(string,reverse=True),sep="\n")
```

```
11
r
-
['-', 'H', 'W', 'd', 'e', 'l', 'l', 'l', 'o', 'o', 'r']
['r', 'o', 'o', 'l', 'l', 'l', 'e', 'd', 'W', 'H', '-']
```

In [172…
```python
# capitalize, Title, Upper, Lower, Swapcase
string="hellO-woRld"
print(string.capitalize(),string.title(),string.upper(),string.lower(),string.swapcase(),sep='\n')
```

```
Hello-world
Hello-World
HELLO-WORLD
hello-world
HELLo-WOrLD
```

In [188…
```python
# count, find, index
string="string is a set of characters in a string"
print(string.count('s'),string.find('set'),string.find('string'),string.index('in'))

# difference between index and find is that if an element is not present in string
# then index will throw error whereas find will give -1
```

```
5 12 0 3
```

In [196…
```python
# endswith and startswith
string="Hello world"
print(string.endswith('rld'),string.startswith('He'))
```

```
True True
```

In [198…
```python
# format
name = 'Abhishek'
gender = 'male'

print('Hi my name is {1} and I am a {0}'.format(gender,name))
print(f"Hi my name is {name} and I am a {gender}")
```

```
Hi my name is Abhishek and I am a male
Hi my name is Abhishek and I am a male
```

In [200…
```python
# isalpha, isalnum, isdigit, isidentifier
```

In [206…
```
string="helloworld"
digit="1234"
mixed="124@akfj"
print(string.isalpha(),digit.isalpha(),mixed.isalpha())
print(string.isalnum(),digit.isalnum(),mixed.isalnum())
print(string.isdigit(),digit.isdigit(),mixed.isdigit())
print(string.isidentifier(),digit.isidentifier(),mixed.isidentifier())
```

```
True False False
True True False
False True False
True False False
```

In [222…
```
# split and join
string="hellow split it is"
print(string.split())
" ".join(["this","is","gonna","join"])
```

```
['hellow', 'split', 'it', 'is']
```

Out[222… 'this is gonna join'

In [224…
```
# replace
"this will replace 'replace with change'".replace('replace','change')
```

Out[224… "this will change 'change with change'"

In [228…
```
# strip
string="     left stripped then right stripped    "
print(string.lstrip(),string.rstrip(),string.strip(),sep="\n")
```

```
left stripped then right stripped
     left stripped then right stripped
left stripped then right stripped
```

# Program -

## Find the length of a given string without using the len() function

In [239…
```
string=input("enter a string")
count=0
for i in string:
    count+=1
print(f"length of {string} is {count}")
```

```
length of this is a string is 16
```

### Extract username from a given email.

In [242…
```
email=input("enter your email")
username=email.split('@')[0]
print(username)
```

```
abhi.keshri0313
```

### Count the frequency of a particular character in a provided string.

In [247…
```
string=input("enter a string")
char=input("enter your character")
count=0
for i in string:
    if i==char:
        count+=1
print(f"number of {char} in {string} is {count}")
```

```
number of t in this is a string is 2
```

### Write a program which can remove a particular character from a string.

In [252…
```
string=input("enter a string")
char=input("enter your character")
res=""
for i in string:
    if i!=char:
        res+=i
print(res)
```

```
his is a sring
```

## Write a program that can check whether a given string is palindrome or not.

In [261…
```
string=input("enter a string")
l=0;r=len(string)-1
check=True
while l<=r:
    if string[l]!=string[r]:
        print("not a palindrome")
        check=False
        break
    l+=1
    r-=1
if check:
    print(" it is a palindrome")
```

```
it is a palindrome
```

## Write a program to count the number of words in a string without split()

In [264…
```
string=input("enter a string")
count=0
for i in string:
    if i==" ":
        count+=1
print(f"number of words in {string} is {count+1}")
```

```
number of words in this is a string is 4
```

## Write a python program to convert a string to title case without using the title()

In [273…
```
string=input("enter a string")
res=""
for i in range(len(string)):
    if i==0 or string[i-1]==" ":
        res+=string[i].upper()
    else:
        res+=string[i]
print(res)
```

```
This Is A String
```

## Write a program that can convert an integer to string.

In [283…

```
num=int(input("enter a number"))
digits="0123456789"
res=""
while num:
    res=digits[num%10]+res
    num//=10
print(res,type(res))
```

```
1234 <class 'str'>
```