```
#Bitwise XOR
10 ^ 11
```

```
1
```

```
# Operators -

# Data Structures - string, List, Tuple, Set and Dictionaries

# String
s = "python"
s
```

```
'python'
```

```
s[0]  #indexing
```

```
'p'
```

```
s[3]
```

```
'h'
```

```
s[4]
```

```
'o'
```

```
s[-1]
```

```
'n'
```

```
s[-6]
```

```
'p'
```

```
# idexing
# +ve indexing - starts with 0 from left to the right
# -ve indexing - starts with -1 from right to left

# slicing
s
```

```
'python'
```

```
s[0 : 2] # 0 - p, 1 - y
```

```
'py'
```

```
s[0 : 3]
```

```
'pyt'
```

```
s[3 : 5]
```

```
'ho'
```

```
s[-6 : -4]
```

```
'py'
```

```
s[-3 : -1]
```

```
'ho'
```

```
s[0 : -4]
```

```
'py'
```

```
s[-6 : 2]
```

```
'py'
```

```
s[0 :-2]
```

```
'pyth'
```

```
s = 'program'
s[ 0 : 5]
```

```
'progr'
```

```
s[ 0 : 5 : 2]
```

```
'por'
```

```
s[3 : 7 : 3]
```

```
'gm'
```

```
s[1 : 4 : 2 ]
```

```
'rg'
```

```
s = "data analytics"
s
```

```
'data analytics'
```

```
s[5 : 14]
```

```
'analytics'
```

```
s[5 : 14]
```

```
s[9 : 14 : 3 ]  #yc
```

```
'yc'
```

```
s[ : 6]
```

```
'data a'
```

```
s[5 : ]
```

```
'analytics'
```

```
s[ : ]
```

```
'data analytics'
```

```
s[ : :2]
```

```
'dt nltc'
```

```
s
```

```
'data analytics'
```

```
s[-14 : -10]
```

```
'data'
```

```
s[-14 : -10 : -1]
```

```
''
```

```
s[-10 : -15 : -1]
```

```
' atad'
```

```
s
```

```
'data analytics'
```

```
s[-1 : -10 : -1 ]
```

```
'scitylana'
```

```
s[ : : -1 ]
```

```
'scitylana atad'
```

```
# String functions
s = "python"
s.upper()
```

```
'PYTHON'
```

```
s1 = "PYTHON"
```

```
s1.lower()
```

```
'python'
```

```
s = 'PyThon'
s.upper()
```

```
'PYTHON'
```

```
s.lower()
```

```
'python'
```

```
s = 'python for data analytics'
s
```

```
'python for data analytics'
```

```
s.title()
```

```
'Python For Data Analytics'
```

```
s = 'python'
s.capitalize()
```

```
'Python'
```

```
s = 'python for data analytics'
s.capitalize()
```

```
'Python for data analytics'
```

```
s = 'python'
s.isupper()  # True/False
```

```
False
```

```
s.islower()
```

```
True
```

```
s = "Python For Data Analytics"
s.istitle()
```

```
True
```

```
s = "Python"
s
```

```
'Python'
```

```
# capitalized string - 0th index in upper case , remaing in lower case
s[0].isupper()
```

```
True
```

```
s[1 : ].islower()
```

```
True
```

```
s[0].isupper()  and s[1 : ].islower()
```

```
True
```

```
s = "PyThon"
s[0].isupper()  and s[1 : ].islower()
```

```
False
```

```
"python".islower()
```

```
True
```

```
"Python For DATA ANAlystics".upper()
```

```
'PYTHON FOR DATA ANALYSTICS'
```

```
"Python For DATA ANAlystics".lower()
```

```
'python for data analystics'
```

```
# upper, lower, title, capitalize, isupper, islower, istitle
```

```
# isdigit, isspace, isalnum, isascii
```

```
s = "1567"
s[3]
```

```
'7'
```

```
s.isdigit()
```

```
True
```

```
s = "1567A"
s.isdigit()
```

```
False
```

```
s = "1567Python"
s.isalnum()
```

```
True
```

```
s = "1567 Python"
s.isalnum()
```

```
False
```

```
s = "     "
s.isspace()
```

```
True
```

```
s = "  a   "
s.isspace()
```

```
False
```

```
ord("A")
```

```
65
```

```
ord("*")
```

```
42
```

```
ord("a")
```

```
97
```

```
chr(97)
```

```
'a'
```

```
chr(65)
```

```
'A'
```

```
s = "python"
s.isascii()
```

```
True
```

```
s = "python😁"
s.isascii()
```

```
False
```

```
# split, strip, join , string concatenation, count, replace
s = "python for data analytics"
s.count("a")
```

```
4
```

```
s = "python for data analytics and data science"
s.count("data")
```

```
2
```

```
s = "python for data analytics"
s.replace("analytics", "science")
```

```
'python for data science'
```

```
# find - the first index of the character
s.find("o")
```

```
4
```

```
s.index("o") # the first index of the character
```

```
4
```

```
# split, strip, join
```

```
s = "****python****"
s.strip("*")
```

```
'python'
```

```
s = "*##python***##*"
s.strip("*")
```

```
'##python***##'
```

```
s = "*##python***##*"
s.strip("*#")
```

```
'python'
```

```
s = "python for data science"
s.split()
```

```
['python', 'for', 'data', 'science']
```

```
s = "python,excel,tableau"
s.split(',')
```

```
['python', 'excel', 'tableau']
```

```
course_list = ['python', 'excel', 'tableau']
```

```
"-".join(course_list)
```

```
'python-excel-tableau'
```

```
s = "python"
s1 = "course"
s + s1  # string concatenation
```

```
'pythoncourse'
```

```
"10" + "20"
```

```
'1020'
```

```
s * 3
```

```
'pythonpythonpython'
```

```
# String indexing, slicing, step, negative steps,
# upper, lower, title, capitalize, islower, isupper, istitle, isdigit,
isspace, isalnum
#isascii, count, replace, find, index, strip, split, join, +, *

#
s = "arivupro python course"

# from the string slice the course
# find the index of c
# find the count of p
# convert the string in title case
# reverse the whole string
# print pro in reverse
# replace python with excel

# from the string slice the course
s = "arivupro python course"
s[16 : 22]
```

```
'course'
```

```
s[-6 : ]
```

```
'course'
```

```
# find the index of c
s.index("c")
```

```
16
```

```
s.find("c")
```

```
16
```

```
# find the count of p
s.count("p")
```

```
2
```

```
# convert the string in title case
s.title()
```

```
'Arivupro Python Course'
```

```
# reverse the whole string
s[ : :-1 ]
```

```
'esruoc nohtyp orpuvira'
```

```
# print pro in reverse
s[7 : 4 : -1]
```

```
'orp'
```

```
# replace python with excel
s.replace('python' , 'excel')
```

```
'arivupro excel course'
```