

▼ First_programme

```
print("Hello World")
```

```
Hello World
```

▼ Variables

```
a = 5
b = "We are learning python "
c = 3j
d = 23.5
print(a, type(a))
print(b, type(b))
print(c, type(c))
print(d, type(d))
```

```
5 <class 'int'>
We are learning python <class 'str'>
3j <class 'complex'>
23.5 <class 'float'>
```

```
a = str(3)
b = int(3)
c = float(3)
print(a, type(a))
print(b, type(b))
print(c, type(c))
```

```
3 <class 'str'>
3 <class 'int'>
3.0 <class 'float'>
```

```
c, d, e = "Orange", "Banana", "Cherry"
print(c,d,e)
```

```
Orange Banana Cherry
```

```
f = g = h = "Orange"
print(f,g,h)
```

```
Orange Orange Orange
```

```
i, j , k = "Python ", 'is ', 'awesome '
print(i + j + k)
```

```
Python is awesome
```

```
x = "awesome"
def myfunc():
    print("Python is " + x)
myfunc()
```

▼ Strings

```
print('Zain Khalid')
```

```
Zain Khalid
```

```
a = "Zain"
b = "Khalid"
```

```
a + b , a*2
```

```
('ZainKhalid', 'ZainZain')
```

```
"s" in "Zain"
```

```
"a" in "Zain"
```

```
True
```

```
"s" not in "Zain"
```

```
"a" not in "Zain"
```

```
False
```

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

```
97
```

```
chr(97)
```

```
'a'
```

```
a = "Zain Khalid"
```

```
len(a)
```

```
11
```

```
str(9+20)
```

```
'29'
```

▼ Indexing

```
a = "Zain"
```

```
a[0] , a[1], a[2], a[3]
```

```
('Z', 'a', 'i', 'n')
```

```
a[-1] , a[-2], a[-3], a[-4]
```

```
('n', 'i', 'a', 'Z')
```

```
a[0:4]
```

```
'Zain'
```

```
a[0:3:2]
```

```
'Zi'
```

```
a[3:0:-2]
```

```
'na'
```

▼ f Strings

```
n = 20
m = 50
product = n * m
print(f"The product of {n} and {m} is {product}")
```

```
The product of 20 and 50 is 1000
```

```
a.replace("a","M")

'ZMin'
```

▼ Strings Methods

```
a = "Zain Khalid"
a.capitalize()

'Zain khalid'
```

```
a.upper()

'ZAIN KHALID'
```

```
a.lower()

'zain khalid'
```

```
a.swapcase()

'zAIN kHALID'
```

```
a.title()

'Zain Khalid'
```

```
a.count("a")

2
```

```
a.find("a")

1
```

```
a.index("a")

1
```

```
a.rfind("h")

6
```

```
a.isalnum()

False
```

```
a.isalpha()

False
```

```
a.isdigit()

False
```

```
a.islower()

False
```

▼ Strings Formatting

```
a.center(50, "-")

'-----Zain Khalid-----'

'1\t2\t3'.expandtabs()

'1      2      3'

a.ljust(30, "")

'Zain Khalid*****'

a.rjust(30, "")

'*****Zain Khalid'

a.lstrip()

'Zain Khalid'

a.rstrip()

'Zain Khalid'

a.zfill(20)

'00000000Zain Khalid'

a.partition(" ")

('Zain', ' ', 'Khalid')

'zain.khalid.kamboh'.split(".")

['zain', 'khalid', 'kamboh']
```

▼ Operators

```
print(2+3) #addition

5

print(3-1) #subtraction

2

print(3*2) #multiplication

6

print(6/2) #classic division

3.0

print(6//2)
#floor division

3

print(9%2) #remainder

1
```

```
print(8**3) #power

512

print(25**0.5) #square root

5.0

print(8**4+3-8*2/6) #PEMDAS RULE

4096.333333333333
```

▼ Input Variables

```
name= input("What is Your Name?")
print(name)

What is Your Name?Zain
Zain

name=input("what is your name?")
age=int(input("how old are you?"))
greetings = "Hello"
print(f"{greetings} {name} You are {age} years old")

what is your name?Zain
how old are you?19
Hello Zain You are 19 years old
```

▼ conditional Logics

```
print(6==6)
print(0!=5)
print(19<29)
print(1<3)
print(10>=19)
print(6<=4)

True
True
True
True
False
False

zain_age = 19
Min_age_at_university=19
print(zain_age==Min_age_at_university)

True
```

▼ IF ELSE STATEMENT

```
score = float(input("Enter your score: "))
if score >= 90:
    grade = "A"
elif score >= 80:
    grade = "B"
elif score >= 70:
    grade = "C"
elif score >= 60:
    grade = "D"
else:
    grade = "F"
print("Your grade is:", grade)
```

Enter your score: 91
Your grade is: A

▼ Functions

```
def fun():
    name = "Zain Khalid"
    age = 19
    Qualification = "BSC Transportation Engineering"
    City = "Lahore"
    Country = "Pakistan"
    print(name, age, Qualification, City, Country)
fun()

    Zain Khalid 19 BSC Transportation Engineering Lahore Pakistan
```

```
def add_num(num1,num2,num3):
    print(num1 + num2 * num3)
add_num(15,10,5)

    65
```

```
def double(num):
    return num*2
double(15)

    30
```

```
def power(num, x=1):
    result = 1
    for i in range(x):
        result = result*num
    return result
power(12,3)

    1728
```

```
def multi_add(*args):
    result = 0
    for x in args:
        result = result + x
    return result
multi_add(1,2,3,4,5)

    15
```

```
z = lambda x,y : x + y #limba function
z(2,3)

    5
```

▼ LOOPS

```
for x in range(0,10,3):
    print(x)

    0
    3
    6
    9
```

```
days = ["Mon", "Tue", "Wed", "Thu", "Fri", "sat", "sun"]
for i in days:
    if (i=="Fri"):
        break
    print(i)
```

```
Mon
Tue
Wed
Thu
```

```
days = ["Mon", "Tue", "Wed", "Thu", "Fri", "sat", "sun"]
for i in days:
    if (i=="Fri"):
        continue
    print(i)
```

```
Mon
Tue
Wed
Thu
sat
sun
```

```
x=1
while (x<10):
    print(x)
    x=x+2
```

```
1
3
5
7
9
```

▼ TUPLES

```
t1 = (2, "Zain Khalid", 3.5, False)
t2 = (20, 30, 40, 50, 60, 70, 80)
```

```
len(t1)
```

```
4
```

```
t1[1], t1[2]
```

```
('Zain Khalid', 3.5)
```

```
t1[1:2]
```

```
('Zain Khalid',)
```

```
min(t2)
```

```
max(t2)
```

```
80
```

```
t1.count(3.5)
```

```
1
```

```
t1.index("Zain Khalid")
```

```
1
```

▼ LISTS

```
list1=[2, "Khalid", "codanics", 479, 53.2, False]
list2=[3, 5, "Zain", "ashare", True]
```

```

print(type(list1))
print(len(list2))

<class 'list'>
5

list3=[20,30,50,67,76,38,2345,343,345643,234534,45]

list3.sort()
print(list3)

[20, 30, 38, 45, 50, 67, 76, 343, 2345, 234534, 345643]

list3.reverse()
print(list3)

[345643, 234534, 2345, 343, 76, 67, 50, 45, 38, 30, 20]

```

▼ DICTIONARIES

```

my_dict = {'Sher Ali': 20, 'Faisal': 19, 'Zain': 19}

my_dict['Sher Ali']

20

my_dict = {'Zain': 2, 'Sher': 3, 'Faisal': 5}
my_dict['Sher'] = 4
print(my_dict)

{'Zain': 2, 'Sher': 4, 'Faisal': 5}

my_dict = {'name': 'Zain', 'age': 19, 'country': 'Pakistan'}
for key in my_dict:
    print(key)

for value in my_dict.values():
    print(value)

for item in my_dict.items():
    print(item)

name
age
country
Zain
19
Pakistan
('name', 'Zain')
('age', 19)
('country', 'Pakistan')

```

▼ SETS

```

s1 = {1,2,3,4,5,6,7,8,9,10}
s2 = {1,2,3,4,5,6,7,8,9,10,11,12,13,14,15}

print(s1.union(s2))

{1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15}

print(s1.intersection(s2))

```



```
{1, 2, 3, 4, 5, 6, 7, 8, 9, 10}

print(s2.difference(s1))

{11, 12, 13, 14, 15}

print(s1.symmetric_difference(s2))

{11, 12, 13, 14, 15}

print(s1.issubset(s2))

True

print(s2.issuperset(s1))

True

print(s1.isdisjoint(s2))

False
```

▾ Sequence Function

```
a = ["Apple", "Orange", "Banana"] #enumerate
b = enumerate(a)
print(list(b))

[(0, 'Apple'), (1, 'Orange'), (2, 'Banana')]

sorted([7, 1, 2, 6, 0, 3, 2]) #sorted

[0, 1, 2, 2, 3, 6, 7]

list1 = ["Apple", "Banana", "Orange"] #zip
list2 = ["Sher", "Zain", "Faisal"]
ziplist = zip(list1, list2)
print(list(ziplist))

[('Apple', 'Sher'), ('Banana', 'Zain'), ('Orange', 'Faisal')]
```

```
list(reversed(range(10))) #reversed
```

```
🔗 [9, 8, 7, 6, 5, 4, 3, 2, 1, 0]
```

+ Code

+ Text