

■ Python Complete Training Guide

Training at Diksuchi Group of Institutions

1. Conditional Statements

if, if-else, if-elif-else, nested if

```
# Example of if-elif-else
marks = 75
if marks >= 85:
    print("Distinction")
elif marks >= 50:
    print("Pass")
else:
    print("Fail")
```

2. Loops

for, while, nested loops

```
# Example of for loop
for i in range(5):
    print(i) # prints 0 to 4

# Example of while loop
n = 1
while n <= 5:
    print(n)
    n += 1
```

3. Loop Control

break, continue, pass, else with loop

```
# Example
for i in range(5):
    if i == 3:
        break
    print(i)
```

4. Comprehensions

List, Dict, Set, Generator

```
# List comprehension
squares = [x*x for x in range(5)]
print(squares) # [0,1,4,9,16]
```

5. Functions

```

def, lambda, map, filter, reduce
    from functools import reduce
    # Normal function
    def square(x):
        return x*x

    # Lambda
    f = lambda x: x+5
    print(f(10))

    # Map
    print(list(map(lambda x:x*2, [1,2,3])))

    # Filter
    print(list(filter(lambda x:x>2, [1,2,3,4])))

    # Reduce
    print(reduce(lambda x,y:x+y, [1,2,3,4]))

```

6. Exception Handling

```

try, except, else, finally
    try:
        print(10/0)
    except ZeroDivisionError:
        print("Error: Division by zero")
    else:
        print("No error")
    finally:
        print("This always runs")

```

7. Useful Built-ins

```

range, enumerate, zip, any, all
    nums = [1,2,3]
    print(range(1,6))
    print(list(enumerate(['a', 'b'])))
    print(list(zip([1,2], [3,4])))
    print(any([0, False, 1])) # True
    print(all([1, True, 3]))  # True

```