

## Type Conversion:

1. `str()`: Converts to a string.

```
num = 10
```

```
num_str = str(num)
```

2. `int()`: Converts to an integer.

```
num_str = "10"
```

```
num = int(num_str)
```

3. `float()`: Converts to a float.

```
num_str = "10.5"
```

```
num = float(num_str)
```

4. `list()`: Converts to a list.

```
my_string = "hello"
```

```
my_list = list(my_string)
```

## Data Structures:

List Methods:

1. `append()`, `extend()`, `insert()`, `remove()`, `pop()`, `index()`, `count()`,

`sort()`, `reverse()`

```
my_list = [1, 2, 3]
```

```
my_list.append(4)
```

Tuple Methods:

1 `index()`, `count()`

```
my_tuple = (1, 2, 3)
```

```
index = my_tuple.index(2)
```

Set Methods:

1. `add()`, `remove()`, `union()`, `intersection()`, `difference()`,

`symmetric_difference()`

```
set1 = {1, 2, 3}
```

```
set2 = {2, 3, 4}
```

```
union_set = set1.union(set2)
```

## Dictionary Methods:

```
1. keys(), values(), items(), get(), pop(), update()
my_dict = {'a': 1, 'b': 2}
keys = my_dict.keys()
```

## String Manipulation:

```
1. split(): Splits a string into a list.
my_string = "Hello, World"
split_string = my_string.split(',')

2. join(): Joins elements of an iterable with a string.
my_list = ['Hello', 'World']
joined_string = ' '.join(my_list)

3. strip(): Removes leading and trailing whitespace.
my_string = "    Hello    "
stripped_string = my_string.strip()
```

## List Manipulation:

```
1. append(): Adds an element to the end of the list.
my_list = [1, 2, 3]
my_list.append(4)

2. extend(): Extends a list by appending elements from another list.
list1 = [1, 2, 3]
list2 = [4, 5, 6]
list1.extend(list2)

3. pop(): Removes and returns an element at a given index.
my_list = [1, 2, 3]
popped_element = my_list.pop(1)
```

## Dictionary Manipulation:

1. `keys()`: Returns a list of dictionary keys.

```
my_dict = {'a': 1, 'b': 2}
keys = my_dict.keys()
```

2. `values()`: Returns a list of dictionary values.

```
my_dict = {'a': 1, 'b': 2}
values = my_dict.values()
```

3. `items()`: Returns a list of key-value pairs in a dictionary.

```
my_dict = {'a': 1, 'b': 2}
items = my_dict.items()
```

## Control Flow:

1. `if, elif, else`: Conditional statements for decision making.

```
x = 10
if x > 5:
    print("x is greater than 5")
else:
    print("x is less than or equal to 5")
```

2. `for` loop: Iterates over a sequence.

```
for i in range(5):
    print(i)
```

3. `while` loop: Executes a block of code as long as a condition is true.

```
x = 0
while x < 5:
    print(x)
    x += 1
```

## **File Handling:**

1. `open()`: Opens a file.

```
file = open('example.txt', 'r')
```

2. `read()`: Reads the content of the file.

```
content = file.read()
```

3. `write()`: Writes content to the file.

```
file.write('Hello, this is a test.')
```

## **Math Operations:**

1. `sum()`: Returns the sum of elements in an iterable.

```
my_list = [1, 2, 3]
```

```
total = sum(my_list)
```

2. `min()`, `max()`: Returns the minimum or maximum value in an iterable.

```
my_list = [1, 2, 3]
```

```
min_value = min(my_list)
```

```
max_value = max(my_list)
```

## **Boolean Operations:**

1. `and`, `or`, `not`: Logical operators for boolean expressions.

```
x = True
```

```
y = False
```

```
result = x and y
```

## Exception Handling:

1. try, except: Catches and handles exceptions.

```
try:
    result = 10 / 0
except ZeroDivisionError:
    print("Cannot divide by zero")
```

## Object-oriented Programming:

1. class: Defines a new class.

```
class MyClass:
    def __init__(self, x):
        self.x = x
```

2. init(): Initializes an object.

```
obj = MyClass(5)
```

3. self: Represents the instance of the class.

```
class MyClass:
    def __init__(self, x):
        self.x = x
```

## Module-related:

1. import: Imports a module.

```
import math
```

2. from...import: Imports specific attributes or functions from a module.

```
from math import sqrt
```

## Functional Programming:

1. `map()`: Applies a function to all items in an input list.

```
def square(x):  
    return x * x
```

```
numbers = [1, 2, 3, 4]  
squared_numbers = list(map(square, numbers))
```

2. `filter()`: Filters elements from an iterable based on a function.

```
def is_even(x):  
    return x % 2 == 0
```

```
numbers = [1, 2, 3, 4, 5, 6]  
even_numbers = list(filter(is_even, numbers))
```