**Python Operators**

* A diagram of a person

  Description automatically generatedBitwise Operators
  + & (AND) – Performs a bitwise AND operation between bits of two integers
  + | (OR) - Performs a bitwise AND operation between bits of two integers
  + ^ (XOR) - Performs a bitwise AND operation between bits of two integers
  + ~ (NOT) – Flips the bits of an integer
  + << (Left Shift) – Shifts the bits of an integer to the left by a specified number of positions
  + A diagram of a diagram

    Description automatically generated>> (Right Shift) Shifts the bits of an integer to the right by a specified number of positions

**Python Functions**

* **Assert** – A keyword to check if a condition is true. If the condition is false, it raises an AssertionError
* A diagram of a process

  Description automatically generated**Enumerate** – A function used to iterate over an iterable while keeping track of the index and corresponding value
* **Filter** – A function that filters elements from an iterable based on a provided function or condition, returning the elements that satisfy the condition
* **Functools.reduce** – A function that applies a binary function cumulatively to the elements of an iterable, reducing it to a single value
* **Issubclass** – Checks if a class is a subclass of another class
* A diagram of a algorithm

  Description automatically generated**Iter** – Built-in function that creates an iterator object from an iterable, allowing you to iterate over its elements
* **Itertools.count** – A function from the itertools module that generates an infinite sequence of numbers starting from a specified value
* **Map** – A function used to apply a given function to each item in an iterable and return an iterator of the results
* **Next** – A function used to retrieve the next item from an iterator
* A diagram of a algorithm

  Description automatically generated**Sorted** – An function used to sort elements in an iterable and return them as a list
* **Try** – A keyword used to create exception handling blocks
* **Type** – A built-in function used to determine the data type of an object
* **Yield** – A keyward used in generator functions to yield a value to the caller, allowing the fucnction to be paused and resumed
* **Zip** – A function used to combine multiple iterables element-wise into tuple

**Python Methods**

* **Getitem** – A special method used to define custom behavior for indexing elements of an object
* **Init** – A special method used to initialize objects of a class
* **Iter** – A special method used to define custom iteration behavior for objects
* **Len** – A special method used to define the length of objects
* **Next** – A special method used to define custom behavior for retrieving the next element during iteration

**Python Concepts**

* **Classes** – Classes are a fundamental concept in OOP and are used to create objects with attributes and methods
* **Exceptions** – Events that occur during program execution that disrupt the normal flow of code
* **Iterables** – Objects that can be iterated over, such as list, tuples, and strings
  + 3 categories – Indexable, Nonindexable, Generators/Iterators
* **Iterators** – Objects that represent a stream of data and allow you to iterate through it one element at a time
  + Lazy and exhaustible
* **Generators** – A way to create iterators in Python, allowing you to iterate over a potentially large sequence of values without generating them all at once

**Function Arguments and Parameters**

* Arguments and Parameters
  + Asterisks (\*) in the parameters packs the arguments into a tuple
  + Asterisks (\*) in the arguments unpacks the tuple into arguments
  + Double asterisks (\*\*) in the parameters packs the arguments into a dictionary
  + Double asterisks (\*\*) in the arguments unpacks the dictionary into arguments
* Syntax Rules
  + Position => Name => Unpacking Iterables => Unpacking the Dictionary
* Semantic Rules
  + Position/Unpacking Iterables => Variable Name => Unpacking Dictionary