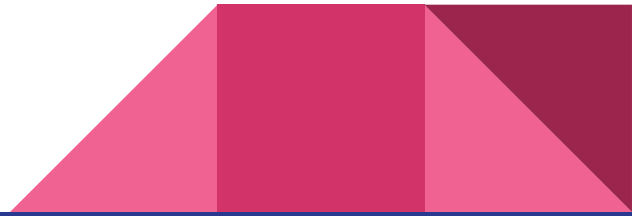
- Set functions Revision
- Frozen Set
- Random Module
- Revision of String Functions
- Practice Problems on Data types

Set Operation Function Revisions

- **difference()**
- **difference_update()**
- **intersection()**
- **intersection_update()**
- **symmetric_difference()**
- **symmetric_difference_update()**
- **isdisjoint()**
- **issuperset()**
- **issubset()**
- **union()**



Union()

union() in Set

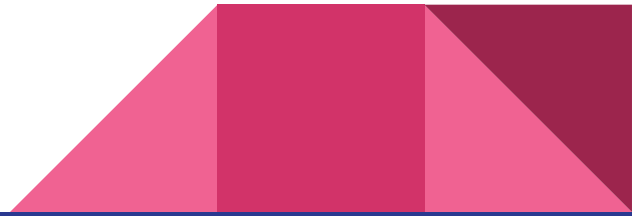
The `union()` method returns a set that contains all items from the original set, and all items from the specified set(s).

```
x = {"apple", "banana", "cherry"}

y = {"google", "microsoft", "apple"}

z = x.union(y)

print(z)
```



Frozen Set

Frozen Set

Frozen set is an immutable version of Python set object.

While elements of a set can be modified at any time, elements of the frozen set remain the same after creation.

Due to this, frozen sets can be used as keys in Dictionary or as elements of another set.

The syntax of `frozenset()` function is:

```
frozenset([iterable])
```

frozenset() Parameters

The `frozenset()` function takes a single parameter:

- **iterable (Optional)** - the iterable which contains elements to initialize the frozenset with.
  Iterable can be set, dictionary, tuple, etc.

Return value from frozenset()

The `frozenset()` function returns an immutable `frozenset` initialized with elements from the given iterable.

If no parameters are passed, it returns an empty `frozenset`.

Example 1: Working of Python frozenset()

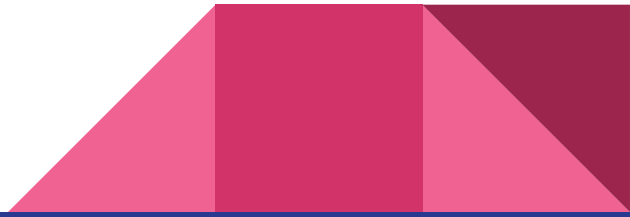
```
# tuple of vowels
vowels = ('a', 'e', 'i', 'o', 'u')

fSet = frozenset(vowels)
print('The frozen set is:', fSet)
print('The empty frozen set is:', frozenset())

# frozensets are immutable
fSet.add('v')
```

Output

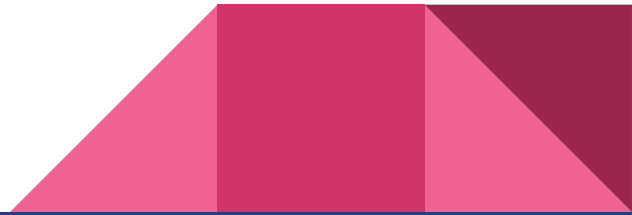
```
The frozen set is: frozenset({'a', 'o', 'u', 'i', 'e'})
The empty frozen set is: frozenset()
Traceback (most recent call last):
  File "<string>, line 8, in <module>
    fSet.add('v')
AttributeError: 'frozenset' object has no attribute 'add'
```



Random Module

Random module

- Python offers `random` module that can generate random numbers.
- random() function generates value between 0 and 1(floating values)
- randrange(lower_limit , upper_limit, stepSize) integer values between given range, stepSize is gap between values.
- randint(a, b)
- uniform(a, b)
- choice(<sequence>)
- shuffle() → Only for list



String Functions Revision

find()

index()

isalnum()

isalpha()

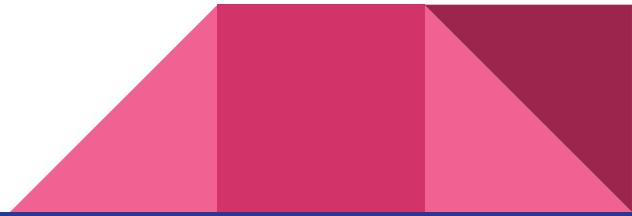
isdigit()

islower()

isnumeric()

isupper()

join()



String Problems

1.Arrange string characters such that lowercase letters should come first

Input : “PyThOn”

Output : yhnPTO

2. Count all letters, digits, and special symbols from a given string

Input : “Py#$234TH”

Output : chars = 4 , digits = 3 , symbols = 2