## basics

REPL

Read Eval Print Loop

file

execute the file

### comments

# single line comments

""" """ used as multi line comments

## Data Types

* need not be mentioned
* auto evaluated & assigned

int integer

float floating point

str strings

complex

4 + 7i

4 + 7j

### bool

True

False

False:

0

0.0

""

''

[ ]

{ }

None

## key words

True False

if elif else

while for

break continue

and or not

in is

def return

del None

import from as

## Functions

### general

print

type

input

eval

### sequence

len

sorted

min

max

sum

### cast

int

float

str

complex

list

set

tuple

## Operators

### arithmetic

+

-

\*

/

%

// floor division

\*\* power

= assignment

### logical

and

or

not

### relational (conditional)

<

>

<=

>=

==

!=

### compound

=+

…

…

### identity

is

is not

### membership

in

not in

## strings

text

index

negative indexing

IndexError (out of range)

slicing

upper index not included

no range errors

step

| h | o | c | k | e | y |
| --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 |
| -6 | -5 | -4 | -3 | -2 | -1 |

immutable

functions

lower, upper, capitalize, title

index, count, rindex

replace

### escape sequences:

\n new line

\t tab space

\b back space

\r return

\v vertical tab

\\ \

## list

list of anything (any data type)

duplicate elements allowed

index

negative indexing

IndexError (out of range)

slicing

upper index not included

no range errors

step

mutable

nesting

functions: remove, pop, clear

count, index

reverse, sort

append, extend, insert

## tuple

list of anything (any data type)

duplicate elements allowed

index

negative indexing

IndexError (out of range)

slicing

upper index not included

no range errors

step

immutable

nesting

functions: count, index

## set

only unique

unordered

indexing not possible

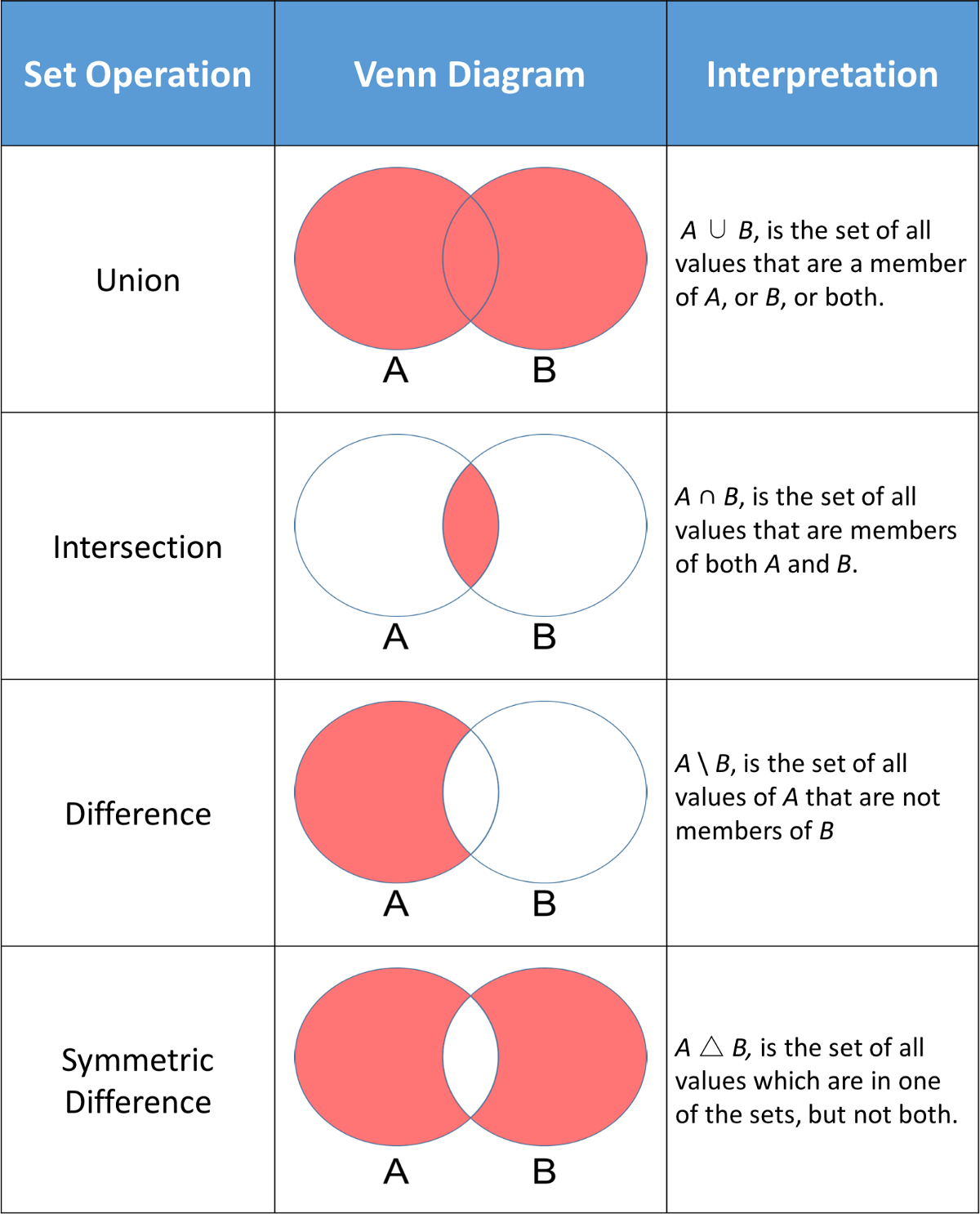
mutable

members: immutable

no nesting

functions: … …

… ...



## dict

key: value pair

unordered (3.6 before)

ordered (3.7+)

indices: keys

keys:

immutable

unique

values:

anything

mutable

functions: values, keys

## flow control

### if-else

if

elif

else

### while

### for

break

continue

## user defined functions

### def

default values

named arguments

args, kwargs

return (can be multiple)

## modules

import

functions

data

statements

1. import colours

colours.red()

colours.blue()

colours.purple()

1. from colours import red, blue

red()

blue()

~~purple()~~

1. import colours as clr

clr.red()

clr.blue()

clr.purple()

1. from colours import red as r

r()

1. from colours import \*

red()

blue()

purple()

conventions:

import matplotlib.pyplot as plt

import pandas as pd

import numpy as np

### os

### time

### datetime

## other important modules:

### GUI:

Tkinter

PyQt

PyGtk

WxPython

PyjamasDesktop

PySimpleGUI

### data configuration

XML

ElementTree

json

json

yaml

yaml

csv

pandas

excel

openpyxl

pandas

### database:

cx\_oracle

MySQLdb

PyGreSQL

sqlite3

SQLAlchemy

### web frameworks:

django

flask

pyramid

TurboGears

Pylons

web2py

## files

### text

open

functions:

close

read

readline

readlines

readable

write

writable

seek

tell

closed

### modes

r read

w write (always creates a new file)

a append

r+ read & write

b binary mode

### data configuration

XML

ElementTree

json

json

yaml

yaml

csv

pandas

excel

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pandas