Traffic Module (traf)

# Class Navdatabase

* This class is in navdb.py.
* It loads waypoint, fir, and airport data
* It provides functions to determine the index of airports/wpts given its name, and the index of the nearest airports/wpts given a lat-long coordinate

## \_\_init\_\_(self,subfolder)

Goal: Load waypoint, airport and fir data from the specified 'subfolder' input

Inputs:

1. subfolder(string, name of subfolder)

Outputs: -

## getwpidx(self,txt,lat=999999.,lon=999999)

Goal: Get waypoint index for the given waypoint name (txt). This makes it possible to access the data of that waypoint from the waypoint data arrays loaded by the \_\_init\_\_ function.

Inputs:

1. txt (string, name of waypoint)
2. lat(float, latitude of waypoint, degrees, optional)
3. long(float, longitude of waypoint, degrees, optional)

Outputs:

1. index of requested waypoint

## getapidx(self,txt)

Goal: Get airport index for the given airport name (txt). This makes it possible to access the data of that airport from the airport data arrays loaded by the \_\_init\_\_ function.

Inputs:

1. txt (string, name of airport)

Outputs:

1. index of requested airport

## getinear(self,wlat,wlon,lat,lon)

Goal: Get index that is nearest to lat and lon. Used by getwinear() and getapinear() functions, see below.

Inputs:

1. wlat(array of floats, latitude of waypoints/airports, degrees)
2. wlon(array of floats, longitude of waypoints/airports, degrees)
3. lat(float, latitude of point, degrees)
4. long(float, longitude of point, degrees)

Outputs:

1. index of nearest waypoint/airport

## getwpinear(self,lat,lon)

Goal: Find the index of the waypoint that is nearest to the specified lat lon coordinates

Inputs:

1. lat(float, latitude of point, degrees)
2. long(float, longitude of point, degrees)

Outputs:

1. index of nearest waypoint

## getapinear(self,lat,lon)

Goal: Find the index of the airport that is nearest to the specified lat lon coordinates

Inputs:

1. lat(float, latitude of point, degrees)
2. long(float, longitude of point, degrees)

Outputs:

1. index of nearest airport

## getinside(self,wlat,wlon,lat0,lat1,lon0,lon1):

Goal: Get indices inside given box. Used by getwpinside() and getapinside() functions, see below.

Inputs:

1. wlat(array of floats, latitude of waypoints/airports, degrees)
2. wlon(array of floats, longitude of waypoints/airports, degrees)
3. lat0(float, latitude of the bottom left coordinate, degrees)
4. lon0(float, longitude of the bottom left coordinate, degrees)
5. lat1(float, latitude of the top right coordinate, degrees)
6. lon1(float, longitude of the top right coordinate, degrees)

Outputs:

1. list containing the indexes of the waypoints/airports that are inside the specified box

## getwpinside(self,lat0,lat1,lon0,lon1):

Goal: Determine the indexes of all the way points inside box

Inputs:

1. lat0(float, latitude of the bottom left coordinate, degrees)
2. lon0(float, longitude of the bottom left coordinate, degrees)
3. lat1(float, latitude of the top right coordinate, degrees)
4. lon1(float, longitude of the top right coordinate, degrees)

Outputs:

1. list containing the indexes of the waypoints that are inside the specified box

## getapinside(self,lat0,lat1,lon0,lon1):

Goal: Determine the indexes of all the airports inside box

Inputs:

1. lat0(float, latitude of the bottom left coordinate, degrees)
2. lon0(float, longitude of the bottom left coordinate, degrees)
3. lat1(float, latitude of the top right coordinate, degrees)
4. lon1(float, longitude of the top right coordinate, degrees)

Outputs:

1. list containing the indexes of the airports that are inside the specified box