Assumptions for the gps\_csv\_conversion.py file are:

# Python Version: 3.9.1

# Dependencies: numpy 1.20.3, Pandas 1.2.4, utm 0.7.0

# Single CSV at a time

# The required libraries have been previously installed

In order to run this .py you must aforementioned dependencies

In order to install Python 3.9.1 please follow the guide below:

1.) https://www.python.org/downloads/release/python-391/

2.) If using Windows, 64-bit installer is recommended

3.)Run installer

A.) Ensure Python 3.9 added to PATH box is checked

B.) Click Install Now

In order to install the dependencies:

1.) If you have Admin Access:

python pip install numpy

python pip install pandas

python pip install utm

2.) If you do not have Admin:

python pip install numpy --user

python pip install pandas --user

python pip install utm -- user

INPUTS:

usage: gps\_csv\_conversion.py [-h] -i INPUT -o OUTPUT [-m MODE] [-w WAYPOINTS] [--header HEADER] [-t TAB] [-s SPACED]

[-r RAWOUTPUT] [-n NORMALIZE] [--normvalue NORMVALUE] [-v VELOCITY] [-a ANGLE]

optional arguments:

-h, --help

show this help message and exit

-i INPUT, --input INPUT

Type: String

Default Value: N/A

Description: Input file namepath with extension.

-o OUTPUT, --output OUTPUT

Type: String

Default Value: N/A

Description: Output filepath with extension.

-m MODE, --mode MODE

Type: String

Default Value: xyz

Description: Set to LLA for output to be in LLA fornmat.

-w WAYPOINTS, --waypoints WAYPOINTS

Type: String | Int

Default Value: 10

Description: Sets the number of waypoints created. All will use all points available.

--header HEADER

Type: Boolean

Default Value: False

Description: Set to True if there is a 13 row header, as seen with data from GPS.

-t TAB, --tab TAB

Type: Boolean

Default Value: False

Description: Set to True if file is tab seperated (.tsv).

-s SPACED, --spaced SPACED

Type: Boolean

Default Value: False

Description: Set to True for a blank space after every row in the output.

-r RAWOUTPUT, --rawoutput RAWOUTPUT

Type: Boolean

Default Value: False

Description: Set to True if you want the raw output, otherwise the data will be the offset from the first point.

-n NORMALIZE, --normalize NORMALIZE

Type: Boolean

Default Value: False

Description: Set to True for normalized data.

--normvalue NORMVALUE

Type: Float

Default Value: 20.0

Description: If normalizing this is the number normalized to.

-v VELOCITY, --velocity VELOCITY

Type: Float

Default Value: 5.0

Description: Value that will be used for velocity.

-a ANGLE, --angle ANGLE

Type: Float

Default Value: 0.0

Description: Value that will be used for angle.

OUTPUTS(Two Possible):

UTM Zone 17N-> X(Easting)[m] Y(Northing)[m] Z(Altitude)[m] ANGLE[deg] Velocity[m/s]

Latitude[deg] Longitude[deg] Z(Altitude)[m] ANGLE[deg] Velocity[m/s]

If you have Python 3.9, the script should run without any issues

Example:

.\ > cd [Location\_of\_py\_file]

To create an normalized to 50 in xyz output with an angle of 12 and a velocity of 17 with 25 waypoints:

Location\_of\_py\_file> python gps\_csv\_conversion.py -i [Input\_file\_path] -o[Output\_file\_path] -n 1 --normvalue 50 -a 12 -v 17 -w 25