

## umrechnen.py

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001 # Umrechnen von mrad in m
002 # #####
003
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009
010 # #####
011
012 # Import of Libraries
013 # -----
014
015 # import math as m
016 # import string as st
017 # import random as r
018 import numpy as np
019 import os
020
021
022 # -----
023 # Debugging-Settings
024
025 verbose = True # Shows more debugging information
026
027
028 # Functions
029 # -----
030
031
032 # Classes
033 # -----
034
035
036 # Beginning of the Programm
037 # -----
038
039 if __name__ == '__main__':
040
041     # Import der Messwerte des Neigungssensors
042     file = open(os.path.join("data", "nivel_2.txt"))
043     data = file.readlines()
044     file.close()
045     for i, e in enumerate(data):
046         data[i] = e.strip().split(";")
047
048     # Erstellung der Vektoren
049     x_werte = []
050     for i in data:
051         x_werte.append([float(i[0])])
052     x_werte = np.array(x_werte)
053     if(verbose):
054         print(f"x_werte:\n{x_werte}\n")
055
056     y_werte = []
057     for i in data:
058         y_werte.append([float(i[1])])
059     y_werte = np.array(y_werte)
060     if(verbose):
061         print(f"y_werte:\n{y_werte}\n")
062
063     # Berechnung der Höhenunterschiede
064     deltah_vektor = []
065     for i in range(49):
066         if i % 7 == 6:
067             continue
068         else:
069             wert = np.sin(x_werte[i]/1000)*0.15
070             deltah_vektor.append([float(wert)])
071
072     for i in range(49):
073         if i % 7 == 6:
074             continue
075         else:
076             wert = np.sin(y_werte[i]/1000)*0.15
077             deltah_vektor.append([float(wert)])
078     deltah_vektor = np.array(deltah_vektor)
079     if(verbose):
080         print(f"h_vektor:\n{deltah_vektor}\n")
```

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081
082 # Export
083 file = open(os.path.join("data", "exportneig.txt"), f"w")
084 for i in deltah_vektor:
085     i = float(i[0])
086     file.writelines(f"{i:+.8f}\n")
087 file.close()
```