

schwingungsanalyse_prepare_data.py

```
001 # Schwingungsanalyse
002 # #####
003
004 # This python script prepares the data for the main python script for
005 # calculation of the frequencies of the occilations.
006
007 # Authors:
008 # Joshua Wolf
009 # Silas Teske
010 # Lasse Zeh
011 # Christopher Mahn
012
013 # #####
014
015 # Import of Libraries
016 # -----
017
018 # import math as m
019 # import string as st
020 # import random as r
021 # import re
022 import os
023
024
025 # -----
026 # Debugging-Settings
027
028 verbose = True # Shows more debugging information
029
030
031 # Functions
032 # -----
033
034 def convert_data(input_filename, output_filename, Hz):
035     """
036     This function converts files formating for later use.
037
038     Args:
039         input_filename ([string]): [Defines the filename the data is in]
040         output_filename ([string]): [Defines the filename for saving the data]
041         Hz ([int]): [describes the datarate, by with the first line will be
042                    calculated]
043     """
044
045     # Import der Messwerte
046     file = open(os.path.join("data", input_filename))
047     data = file.readlines()
048     file.close()
049     data.pop(0)
050     for i, e in enumerate(data):
051         if(verbose):
052             print(f"[{i+1}/{len(data)}] Import", end="\r")
053         if(e[0] != "/"):
054             data[i] = e.strip().split(",")
055             temp = []
056             for j, f in enumerate(data[i]):
057                 if(j == 0):
058                     temp.append(int(f)/int(Hz)) # Berechnung der Timestamps
059                 else:
060                     temp.append(float(f))
061             data[i] = temp
062
063     # Export der konvertierten Messwerte
064     file = open(os.path.join("data", output_filename), "w")
065     for i, e in enumerate(data):
066         if(verbose):
067             print(f"[{i+1}/{len(data)}] Export", end="\r")
068         for j, f in enumerate(e):
069             if(j == 0):
070                 file.writelines(f"{f}")
071             else:
072                 file.writelines(f"; {f}")
073         file.writelines(f"\n")
074     file.close()
075     if(verbose):
076         print(f"[{i+1}/{len(data)}] Done ")
077
078
079 # Classes
080 # -----
```

```

081
082
083 # Beginning of the Programm
084 # -----
085
086 if __name__ == '__main__':
087     print("Running schwingungsanalyse_prepare_data.py...")
088
089     convert_data("Schwingungsanalyse_50Hz_PtoP_0.1.txt", "Schwingungsanalyse_01.txt", 50)
090     convert_data("Schwingungsanalyse_100Hz_PtoP_0.1.txt", "Schwingungsanalyse_02.txt", 100)
091     convert_data("Schwingungsanalyse_100Hz_PtoP_0.5.txt", "Schwingungsanalyse_03.txt", 100)
092     convert_data("Schwingungsanalyse_100Hz_PtoP_1.0.txt", "Schwingungsanalyse_04.txt", 100)
093     # convert_data("Schwingungsanalyse_Cloud_PtoP-0.5_LtoL-0.5.txt", "Schwingungsanalyse_05.txt", 1)
094     # convert_data("Schwingungsanalyse_Cloud_PtoP-2.0_LtoL-2.0.txt", "Schwingungsanalyse_06.txt", 1)
095     # convert_data("Schwingungsanalyse_Cloud_PtoP-5.0_LtoL-5.0.txt", "Schwingungsanalyse_07.txt", 1)

```