

```

1  #IMPORT MODULES
2  import numpy as np
3  import pandas as pd
4  import math as mth
5  import statistics
6
7  #READING DATA
8  def read_data():
9      data = np.array(pd.read_csv(r'C:\Users\edwincaballero\Desktop\data.csv'))
10     return data
11
12 #SAVING DATA
13 def write_snv_output(snv_data):
14     snv_output_writer = r'C:\Users\edwincaballero\Desktop\snv_results.csv'
15     pd.DataFrame(snv_data).to_csv(snv_output_writer, index=False)
16
17 #APPLY SNV ON DATA
18 def snv(input_data):
19     # DEFINE A NEW ARRAY AND POPULATE IT WITH THE CORRECTED DATA
20     output_data = np.zeros_like(input_data)
21
22     for i in range(input_data.shape[0]):
23         # APPLY CORRECTION
24         output_data[i, :] = (input_data[i, :] - np.mean(input_data[i, :])) / np.st
25         d(input_data[i, :])
26     return output_data
27
28 input_data = read_data()
29 snv_data = snv(input_data)
30 write_snv_output(snv_data)
31 count = snv_data.shape[0]
32
33 print()
34 print('SUCCESS')
35 print(str(count)+ ' spectra transformed with SNV method')

```