

Test 1 (5 marks)_solution

August 23, 2022

1 Your Student ID:

```
[1]: #Solution
```

2 Question 1

3 This task, you want to find out Today's date by using the library time

Hint: Use `time.FUNC_NAME.FUNC_NAME?` (where `FUNC_NAME` is replaced with the function you found) to see information about that function and then call the function.

```
[2]: import time as t
t.localtime().tm_mday
```

4 Question 2

5 2.1 What is the standard deviation of the data:

Hint: Using the function `std` in library Numpy

```
[3]: data = [1,3,1,2,9,4,5,6,10,4]
```

```
[4]: import numpy as np
sd = np.std(data)
print(f" the standard deviation is {sd}")
```

```
the standard deviation is 2.9410882339705484
```

6 2.2 Then, you have the additional data as shown below

```
[5]: add_data = [8,11,2,5,6,4,3,2]
```

```
[6]: data.extend(add_data)
```

```
[7]: data
```

```
[7]: [1, 3, 1, 2, 9, 4, 5, 6, 10, 4, 8, 11, 2, 5, 6, 4, 3, 2]
```

```
[8]: sd_new =np.std(data)
print(f" the standard deviation of the new data is {sd_new}")
```

the standard deviation of the new data is 2.954385733401851

Add the new data to the original data, then re-calculate the standard deviation again.

```
[9]: sd_new =np.std(data)
print(f" the standard deviation of the new data is {sd_new}")
```

the standard deviation of the new data is 2.954385733401851

7 Question 3

Consider the below information:

```
[10]: data ={'Year':'2021','transactional data':{
    'transaction_id': 1000001,
    'source_country': 'United Kingdom',
    'target_country': 'Italy',
    'send_currency': 'GBP',
    'send_amount': 'GBP1000.00',
    'target_currency': 'EUR',
    'fx_rate EUR/GBP': 1.1648674,
    'fee_pct': 0.50,
    'platform': 'mobile'}}}
```

8 3.1 Using the python code to pick up the foreign exchange rate ('fx_rate EUR/GBP') from this dataset.

```
[11]: exchange_rate =data['transactional data']['fx_rate EUR/GBP']
print('the foreign exchange rate is ',exchange_rate)
```

the foreign exchange rate is 1.1648674

9 3.2 You now need to include the data for the “fee_amount,” which can be determined from the funds you send to the target country (send_amount) multiplied by the fee percentage (fee_pct).

Create the new keyword “fee_amount” for this dataset, and then report its value.

Hint: using `replace()` and `float()` to convert the 'send_amount' into a number. Then, multiply with fee percentage.

```
[12]: send_amount =float(data['transactional data']['send_amount'].replace('GBP',''))
      fee_pct =data['transactional data']['fee_pct']
      fee_amount=send_amount*fee_pct/100
      fee_amount
      data['transactional data']['fee_amount']=fee_amount
```

```
[13]: data
```

```
[13]: {'Year': '2021',
      'transactional data': {'transaction_id': 1000001,
      'source_country': 'United Kingdom',
      'target_country': 'Italy',
      'send_currency': 'GBP',
      'send_amount': 'GBP1000.00',
      'target_currency': 'EUR',
      'fx_rate EUR/GBP': 1.1648674,
      'fee_pct': 0.5,
      'platform': 'mobile',
      'fee_amount': 5.0}}
```