Problem Set 2

Assignment 1: Quality Control (7 points)

A quality control manager would like to find the average weight of a list of weights. Prior experience indicates that the first two measures are atypical, and the practice is to exclude these from the average calculation.

Write a program that calculates the average of a list of numbers that given as inputs from the user, excluding the first two values.

For your program, you must define and use the following functions:

- `getValues(n)` : Prompt the user for `n` values, returns the list
- `calcAverage(alist)` : Calculates the average from the list

```
def getValues(n):
  weights = []
  if n < 3:
    print('Not enough weights')
    return None
  else:
    for i in range (n):
      weights.append(float(input('Enter a weight: ')))
    return weights[2:]


  def calcAverage(alist):
    print(sum(alist) / len(alist))


  n_weights = int(input('Enter number of weights to be added to the list'))
  calcAverage(getValues(n_weight))
```

Assignment 2: Country Statistics Lookup-Multiple Measures (6 points)

Assume a program begins with the statement:

```
allData = { # dictionary of values for countries
    'US': {'pop':325.7, 'gdp': 19.39, 'ccy': 'USD', 'fx':  1.0},
    'CA': {'pop': 36.5, 'gdp':  1.65, 'ccy': 'CAD', 'fx':  1.35},
    'MX': {'pop':129.2, 'gdp':  1.15, 'ccy': 'MXN', 'fx': 19.68}
    }
```

Write subsequent statements that (in a loop) prompt the user for a country code (`US`, `CA`, or `MX`), then prompt for a measure name (`pop`, `gdp`, `ccy`, or `fx`), then look up in the above dictionary for the corresponding value, and display it.

Example run:

```
Please enter a country code: CA
Please enter a statistic: pop
CA pop = 36.5
```

Your program should handle the cases where a user-entered country code or measure name is not found.

```
from ast import Continue
allData = { # dictionary of values for countries
    'US': {'pop':325.7, 'gdp': 19.39, 'ccy': 'USD', 'fx':  1.0},
    'CA': {'pop': 36.5, 'gdp':  1.65, 'ccy': 'CAD', 'fx':  1.35},
    'MX': {'pop':129.2, 'gdp':  1.15, 'ccy': 'MXN', 'fx': 19.68}
    }

while True:
  country_code = input("Please enter a country code (US, CA, or MX)")
  if country_code not in allData:
    print("Invalid Country Code, Try Again.")

  measure_name = input("Please enter a statistic(pop, gdp, ccy, or fx)")
  if measure_name not in allData[country_code]:
    print("Invalid Measure Name, Try Again")

  value = allData[country_code][measure_name]
  print(f"{country_code} {measure_name} = {value}")

     US pop = 325.7
```

Assignment 3: Parking Garage (6 points)

Write a program to compute the fee for parking in a garage for a number of hours.

The program should:

- Prompt the user for how many hours parked
- Calculate the fee based on the following rules:
    - $2.50/hour
    - minimum fee is $6.00
    - maximum fee is $20.00
- Print the result

For your program, define and use the following two functions:

```
 # use input() to prompt for the # of hours parked, return this value
 def getParkingHours()

 # takes as input hours (a number), returns the parking fee
 def calcParkingFee()
```

```
def getParkingHours():
  hours = int(input('Enter number of hours to park: '))
  return hours

def calcParkingFee(h):
  fee = h * 2.50

  if fee <= 6:
    fee = 6
  elif fee >= 20:
    fee = 20
  else:
    fee = 2.5 * h

hours = getParkingHours()
fee = calcParkingHours()
print(f'Total fee: ${fee}')
```

Assignment 4: Tuition (6 points)

A college charges tuition according to the following:

- 12 or more credits: $20,000/semester
- 1-11 credits: $1,200+$1,700 per credit

Write a program that prompts the user for a number of credits and determines and displays the tuition for the semester. As part of your program, define and use the following function:

```
def calcTuition(credits)
```

The function returns the tuition for a given number of credits

```
def calcTuition(credits):
  if credits >= 12:
    print (f'Tuition = {20000}$')
  elif credits >=1:
    print (f'Tuition = {1200 + 1700 * credits}$')
  else:
    print('invalid number of credits')

n_credits = int(input('Enter number of credits'))
calcTuition(n_credits)
```

```
Enter number of credits3
Tuition = 6300$
```