**Pseudocode for PyBank Challenges (Rough work)**

To help with this task, please see the pseudocode, logical expression and explanation and a flow chart to accomplish the desired output.

1. **The total number of months included in the dataset**

To calculate the number of months included in the dataset, we need to set a variable x as one month and y to hold the total of the months:

X=i,1 (it represents the value in row I and column 1, where i=1 (skipping 0 to accommodate the headers))

Initialise the value of y:

Y=0 (it represents the total months in the selected column)

Now, since each row (i) contains one month, we simply need to increase the number of total months until the row(i) ends:

For (i)

If x ≠ “”

Y = y+1

This will calculate if x is not empty, the value of y will increase by 1 in each for loop, until the x becomes empty. A diagram of a computer program

Description automatically generated

Note\*: I have changed the names of the variables for easy readability, such as y is written as ‘Totalmonths’ in the program and x is written using row function in Python.

1. **The net total amount of "Profit/Losses" over the entire period**

To calculate the total amount of Profit/Loss in the given data set, we must add all the values in the column 2 for each row. We can initialise tpl to 0 and using the conditional formatting in pseudocode above we can find the total of profit or loss. Variable z denotes float value stored in each cell.

tpl = 0 (it’s the total of all cell values, where cv (current value) adds in itself to create tpl) \*In Python its denoted as ‘total\_profit\_Loss’

For i

Z=I,2 (it’s the cell location)

If z ≠ 0

tpl = tpl+1

A diagram of a check

Description automatically generated

1. **The changes in "Profit/Losses" over the entire period, and then the average of those change**

To calculate the changes in PL(Profit/Loss) over the period:

Initialise the arrays to hold PL changes between months

Mc=[] (it holds the list of value change in pl for each month )

Set variables pv, previous value as none

Pv= None

int cv as current cell value, to treat the cv as integer

cv=0

int c as change, to hold the difference between cv and previous pv

c= cv-pl,

For i

If pv ≠ 0

C (change) = cv - pv (subtract current cell value from previous cell value)

Mc = mc + c (this will add changes to monthly changes)

Average = Total mc/ Total months

A diagram of a algorithm

Description automatically generated

1. **The greatest increase/decrease in profits (date and amount) over the entire period**

Initialise the variables gi (greatest increase) and gd(greatest decrease) using concatenation amount:

Gi= month:None, amount ‘-infinity’(negative infinity)

Gd= month:None, amount:infinity(positive infinity)

If change calculated in previous question is greater than the defined variables, then replace the value of ‘gi’ to the change. And if change is lower than the variable set, replace value of ‘gd’ with the change value.

When used in conjunction with the program above, the value of gd and gi will continue to change with each iteration until the highest and the lowest change is found.

A diagram of a graph

Description automatically generated