## Task 3

Description – Write a program to:

• calculate the linear regression parameters and  and correlation coefficients and for a set of *n* pairs of data

• given an estimated proxy size *E*, calculate an improved prediction *P*, where

Design:

* Use LinkedList from Task 1 and enhance with some util methods, such as average value and sum of list.
* Use list to store data for xList(compated list) and yList(comparing list) and mean
* Store intermediate values such as sum of multiplications of two lists or sum of squared values in local variables

Design Review:

Using util functionality from LinkedList will save time and code. Some additional functionality could be provided as util functions such as sum of squared values or sum of multiplied values.

Planned:

List can be used for storage and some util functions. Using procedure 4C from PROBE as we have some historical data, but it is not correlating.

* Psize = (actual total added and modified size to date/plan total added and modified size to date) = (77 + 0 / 60 + 20) = 0.9625
* Ptime coding – 2 hours
* Ptime testing – 2 hours
* Ptime total – 4 hours

Actual:

* Asize – 77 LOC
* Atime coding – 1 hours
* Atime testing – 2 hours
* Atime total – 3 hours

Defects found: 0.5

Note: As javascript is handling numbers in a special way (there is no integer type and rounding requires additional work), some of the results were at first deviating by the last decimal digit – e.g. expected 0.4321, actual 0.432**2.** This was caught during tests, and fixed by rounding only in the last output phase.

Tests:

Regression and correlation

✓ should throw error on lists with different dimensions

✓ should pass against xList Estimated Proxy size and yList Actual Added and Modified Size

✓ should pass against xList Estimated Proxy size and yList actual development time

✓ should pass against xList plan added and modified size and yList actual added and modified size

✓ should pass against xList plan added and modified size and yList actual development time