CITS1401 Project 1 Pseudocode

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Aim: To test whether simpler methods of computing the life ladder metric can produce similar results to the complicated process provided by UNSDSN. The aim is to replicate the rankings of the countries as a result of their Life Ladder scores, based on the other data. The second column provides the Life Ladder score that we are supposed to compare our calculated results to, columns 3 and row 1 onwards contain the data required for these calculations.

*Eye-balling the Data*

* Social Support, Freedom, and Confidence in Government can all be represented by all positive floats.
* Generosity ranges in positive and negative floats.
* Data is missing in some columns

Program Pseudocode   
**input():**

Required to be called 3 times from *main()* and passed as parameters to respective functions.

1. Input data files’ name [“file\_name”]
2. Name of the metric to be computed. [“min”, “mean”, “median”, “harmonic\_mean”]
3. Name of the action to be performed [“list” (DESC on metric), “correlation” (Via Spearman’s correlation coefficient on metric vs Life Ladder score)]

Read in 3 these above strings as (file\_name, metric, report\_action) from the users *input*.

1. Read in the CSV file based on “file\_name” user input, use floats to store all except first field (use ‘None’). Store as row in List of Lists data structure.
2. Compute min/max for each column except the first (ignore ‘None’)
3. Normalise column values relative to min/max scores with formula (score-min)/(max-min) for every column.
4. Except first two columns, computed the nominated metric, based on “metric” user input, for each row. (Avoid ‘None’ & ‘0’ for “harmonic\_mean”. Output as list of (country, score) pairs.
5. Organise the list in either DESC order or using the Spearman’s rank correlation coefficient of (country, score) and the Life Ladder list (in desc order also) producing a value between -1.0 and 1.0, based on the “report\_action” user input.

**output():**

Print to stdout.

Notes:  
- No tied rank, therefore use simpler spearman calculation.   
- Separate functions will be used to better segment the code:

Step 1 [fileRead(file\_name)], Step 2 [min(),max()], Step 3 [normalise(min, max)], Step 4 [desc\_list(), corr\_list()], Step 5 use output().