CITS1401 Project 1 marking guide

Semester 2, 2021

There are 22 marks for functionality which are divided into 5 output test cases. Each test case checks each output with two different files: one csv file is the sample provided to students but with different values, and another csv file is of large size which has more data. Marks for each test case are mentioned in the test cases mentioned below.

It is mentioned in comments why student lost the marks. In addition to any other comments, you may find a note at the top or bottom of comments which includes something like x/22 (test) + x/5 (style) + z/3 (efficiency).

If output of function is not returned in proper format as required and simply printed then deduct 4 marks as mentioned in the end and grade it accordingly. This is considered as marker's intervention to fix student's code. You will get a good idea from test cases output that what to expect from student's code. Similarly, if you find that code is case sensitive to input or data in the file then consider it as human intervention too.

Output test cases:

1. First output: list of location in the region (3 marks)
   There are four tests using two test files.
   If outputs of all tests match then assign 3 marks, else allocate 0.75 mark for each correct output to test.

2. Second output: list of location of same category in the region (3 marks)
   There are four tests using two test files.
   If outputs of all tests match then assign 3 marks, else allocate 0.75 mark for each correct output to test.

3. Third output: List containing the distances (4 marks)
   There are four tests using two test files.
   If outputs of all tests match then assign 4 marks, else allocate 1 mark for each correct output to test.

4. Fourth output: Average and Standard deviation of distances (6 marks)
   There are four tests using two test files.
   If outputs of all tests match then assign 6 marks, else allocate 1.5 mark for each correct output to test. If one of the two values of the output list match then assign 0.75 for each test output.

5. Other test cases / Error-state cases (6 marks)
   There are 5 error-state test cases:
   - Test with file having no data. Expected graceful termination (1 mark)
   - Test with invalid location ID. Expected graceful termination (1 mark)
   - Test for divide by zero error case. (1 mark)
   - Test for negative input parameters. (1 mark)
   - Test for column order different than sample file. (2 marks)

Style and efficiency:

- Style (5/8) which involves intuitive variable and function names, consistent indentation, comments, etc.
    - Default is 5.
    - Deduct 1 mark if person's name and student id is not on the file to identify author of the code.
    - Deduct 2 marks if no, or scant comments are provided.
    - Deduct 1 mark if no functions other than main are created.
    - Deduct 1 mark if intuitive variable and function names, consistent indentation features are missing
- Efficiency (3/8):
    - Assign 3 marks here given the constraints below.
    - Deduct 1 mark if readline() function is used in a loop or file is opened multiple times.
    - Deduct 1 mark if code include repeated blocks instead of loops or code has more loops than necessary.
    - Deduct 1 mark if program is taking long time or program is not doing anything significant.

It sometimes happens that a student will make one mistake that prevents everything else from working. If you can see a quick fix and feel so inclined, please make the fix, run the code and get a run-time tests mark, but **deduct 4 marks** from that tally, as other assignments will not have the benefit of a staff assist.

If student has imported any other module except csv then comment it out and run the code and grade it accordingly. Assign zero mark in efficiency.

Sample outcomes:

```
>>> ro01,ro02,ro03,ro04 = main('testFile1.csv',"GGG555",3.05,2.5)

>>> ro01,ro02,ro03,ro04

(['L5', 'L106', 'L98', 'L90', 'L73', 'L55', 'L58', 'HHH678', 'HHH680'],
['L90', 'HHH678'], [1.1051, 1.7706], [1.4379, 0.3328])


>>> ro11,ro12,ro13,ro14 = main('testFile1.csv',"L101",8,9.5)

>>> ro11,ro12,ro13,ro14

(['L5', 'L7', 'L8', 'L10', 'L109', 'L106', 'L104', 'L103', 'L100', 'L98',
'L92', 'L90', 'L85', 'L80', 'L78', 'L76', 'L75', 'L74', 'L73', 'L72',
'L51', 'L55', 'L56', 'L57', 'L58', 'L59', 'L60', 'L61', 'L62', 'L65',
'L70', 'GGG555', 'GGG557', 'GGG558', 'HHH669', 'HHH671', 'HHH672',
'HHH673', 'GGG563', 'GGG564', 'HHH675', 'HHH676', 'HHH677', 'HHH678',
'GGG568', 'HHH679', 'HHH680'], ['L5', 'L10', 'L106', 'L76', 'L55', 'L60',
'L65', 'L70', 'GGG557', 'HHH675', 'HHH680'], [2.1943, 2.3402, 4.0974,
4.6176, 4.7188, 5.2573, 5.748, 5.8621, 7.0206, 8.4709, 11.2533], [5.5982,
2.4982])


>>> ro21,ro22,ro23,ro24 = main('testFile2.csv',"C0",4.5,5)

>>> ro21,ro22,ro23,ro24
```

```
(['E0', 'A-701', 'B-555', 'A519', 'A425', 'D721', 'E-181', 'B-278', 'D343',
'E-450', 'D-567', 'E-276', 'B-178', 'E-611', 'E918', 'C-398', 'B-679',
'C511', 'F440', 'C-413', 'D608', 'H277', 'D670', 'A-190', 'D-963', 'E513',
'D-567', 'H-62', 'A-360', 'E-475', 'G470', 'A510', 'B-435', 'D938', 'C-
445', 'B-608', 'F-737', 'H154', 'G-677', 'B-84', 'D105', 'D152', 'A754',
'F610', 'H362', 'C981', 'E875', 'C-977', 'E-538', 'A775', 'H-908', 'H175',
'C-797', 'A903', 'H-533', 'A-593', 'D730', 'C-28', 'E906', 'C305', 'G-835',
'H427', 'G-522', 'F441', 'B807', 'D-129', 'B573', 'C284', 'E269', 'A870',
'C-539', 'G-893', 'A-461', 'E-634', 'H663', 'G-175', 'A-474', 'B603',
'D503'], ['A425', 'E-181', 'D670', 'A-190', 'E513', 'E-475', 'G470', 'F-
737', 'B-84', 'D105', 'A-593', 'G-522', 'F441', 'C284', 'C-539', 'G-893',
'B603'], [1.8034, 2.0272, 2.1012, 2.1598, 2.6138, 3.1149, 3.3384, 3.3808,
3.3913, 3.4381, 3.8457, 3.8599, 3.9993, 4.2803, 4.6473, 4.8086, 5.3516],
[3.4213, 1.0073])


>>> ro41,ro42,ro43,ro44 = main('testFile2.csv',"a-213",10,12)

>>> ro41,ro42,ro43,ro44

(['C-974', 'D572', 'F342', 'H23', 'C69', 'G-834', 'E0', 'G698', 'H105', 'A-
810', 'B810', 'D-43', 'F400', 'G-340', 'H-338', 'A-701', 'H570', 'B26',
'D702', 'F197', 'H-344', 'C788', 'A318', 'B-555', 'D866', 'E237', 'F-327',
'A-222', 'C-780', 'F100', 'A519', 'C900', 'E-875', 'F-476', 'H283', 'G514',
'H883', 'A425', 'B-662', 'C298', 'D721', 'F-506', 'G-645', 'H-629', 'C-
650', 'D145', 'E-181', 'F-676', 'A-27', 'E-102', 'H-677', 'B-372', 'C-179',
'B-278', 'D343', 'E111', 'F402', 'C-196', 'G-273', 'H140', 'B946', 'H-120',
'C269', 'G125', 'H-511', 'B234', 'D40', 'E-450', 'A-282', 'C191', 'D-567',
'E-276', 'A907', 'C0', 'D-908', 'F-170', 'B-178', 'C-719', 'B-779', 'C341',
'D265', 'G-768', 'B340', 'E900', 'G-206', 'H682', 'C-335', 'E-611', 'F320',
'B-17', 'C-163', 'E-327', 'F-13', 'G757', 'A265', 'B439', 'C-984', 'D245',
'E-941', 'F-405', 'G468', 'H199', 'C365', 'D234', 'A444', 'C652', 'D-831',
'A-989', 'C-694', 'E918', 'F-743', 'A78', 'B-510', 'G-52', 'C-92', 'G116',
'C-398', 'D377', 'F-445', 'B-679', 'G-154', 'E219', 'G354', 'H252', 'A-
712', 'E-458', 'A-288', 'B36', 'C511', 'D-235', 'F440', 'H-593', 'A-132',
'C-413', 'D608', 'G-877', 'H277', 'A70', 'B616', 'D670', 'A-190', 'F-443',
'H-517', 'A185', 'C-554', 'D-963', 'F448', 'C-21', 'E513', 'G-35', 'A477',
'C48', 'D-567', 'H-62', 'E893', 'F-105', 'H430', 'A-149', 'F-958', 'G-683',
'A-360', 'B949', 'H-727', 'B309', 'E-475', 'F-625', 'B831', 'G470', 'A510',
'B-435', 'F70', 'H-421', 'B685', 'D-574', 'E175', 'D-115', 'E420', 'H606',
'B-622', 'D938', 'F952', 'C-445', 'E-149', 'F-43', 'G732', 'A588', 'B-608',
'C-49', 'F-737', 'H154', 'B-877', 'C520', 'D439', 'G-677', 'H-853', 'C497',
'D130', 'A-352', 'B-84', 'D823', 'E125', 'C460', 'D105', 'F-128', 'A-859',
'B-442', 'C768', 'D152', 'F355', 'H-203', 'B-877', 'D-976', 'E-933', 'G-
597', 'H-711', 'A754', 'D-30', 'E851', 'F610', 'G-337', 'E152', 'G-815',
'B-518', 'D-212', 'H362', 'B949', 'C981', 'D282', 'C-654', 'D-212', 'E875',
'F272', 'C-977', 'F-59', 'H225', 'C-519', 'G-408', 'H963', 'G351', 'E-538',
'G83', 'H871', 'A875', 'C-630', 'D-950', 'G127', 'A775', 'E-617', 'A845',
'C-370', 'A-182', 'E185', 'F718', 'G35', 'H-908', 'A284', 'E28', 'H175',
'B-619', 'C-13', 'A840', 'D430', 'H335', 'B-192', 'C-184', 'D856', 'E-713',
'F-229', 'A-388', 'B-501', 'E-303', 'F-826', 'A-980', 'B544', 'C-797',
'D944', 'E-447', 'H-139', 'B242', 'E990', 'A602', 'B734', 'D-23', 'H-628',
'A903', 'D572', 'G-183', 'H-533', 'D-933', 'E-830', 'H118', 'A-593',
'C153', 'D278', 'F-70', 'G591', 'C460', 'D730', 'G-295', 'H-470', 'A-284',
'B-453', 'C-28', 'E906', 'G-602', 'A-882', 'B457', 'H558', 'A-848', 'C305',
'G-49', 'A485', 'B679', 'E626', 'F-6', 'G-835', 'H325', 'B-808', 'C-863',
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'D-78', 'E-497', 'F537', 'H427', 'E223', 'G-522', 'H251', 'C996', 'A-419', 'F441', 'H308', 'B807', 'C-663', 'D603', 'F-751', 'H-231', 'H-874', 'B-621', 'F-706', 'G-242', 'H220', 'C729', 'D253', 'E821', 'G-968', 'A635', 'C838', 'D-129', 'G-181', 'H-429', 'B573', 'C284', 'D-505', 'E269', 'H945', 'A-206', 'D-579', 'F616', 'H101', 'A870', 'B489', 'D-399', 'E28', 'G760', 'B-584', 'E-667', 'F918', 'G601', 'A-10', 'C-539', 'D-624', 'G552', 'D182', 'F-648', 'G424', 'F-696', 'G-893', 'A-461', 'D204', 'B99', 'E-96', 'H-742', 'C866', 'G93', 'H-415', 'B-134', 'F-569', 'F294', 'G479', 'A683', 'E-634', 'H663', 'A-145', 'B-370', 'C964', 'G-175', 'H842', 'A-258', 'B-623', 'F-886', 'D-261', 'F-528', 'H376', 'D965', 'E901', 'F-192', 'G-739', 'H-832', 'F-862', 'A865', 'C875', 'E108', 'F429', 'H-673', 'A-875', 'A-474', 'E-266', 'B603', 'C842', 'D503', 'E-997', 'F-214', 'G858'], ['C-974', 'H23', 'G698', 'D-43', 'A-701', 'H-344', 'B-555', 'A519', 'F-476', 'H883', 'B-662', 'G-645', 'D145', 'A-27', 'C-179', 'E111', 'G-273', 'E-276', 'H682', 'E-611', 'B-17', 'G757', 'D245', 'C652', 'E918', 'B-510', 'G-52', 'F-445', 'E219', 'D-235', 'A-132', 'A477', 'H430', 'B949', 'B685', 'D-115', 'F952', 'C-445', 'B-877', 'G-677', 'D130', 'A-352', 'C460', 'B-877', 'G-597', 'D-30', 'H362', 'B949', 'E-538', 'G127', 'A845', 'H-908', 'E28', 'B-619', 'D430', 'F-229', 'E-447', 'B242', 'D-23', 'A903', 'H118', 'C460', 'D730', 'A-284', 'H558', 'B679', 'G-835', 'D-78', 'C996', 'B807', 'F-706', 'C729', 'B573', 'D-579', 'A870', 'E28', 'E-667', 'G552', 'D182', 'F-696', 'E-96', 'G93', 'F294', 'H663', 'B-623', 'D-261', 'F-192', 'E108', 'F-214'], [1.5029, 1.784, 1.9208, 2.4472, 2.4987, 2.605, 2.605, 2.6756, 2.9952, 3.6101, 3.6556, 3.8584, 3.9472, 3.9863, 4.0855, 4.1735, 4.201, 4.2779, 4.315, 4.3785, 4.4386, 4.5568, 4.613, 4.6251, 4.8159, 5.0557, 5.173, 5.8436, 5.924, 5.9961, 6.0137, 6.1152, 6.2155, 6.3348, 6.3952, 6.7373, 6.7373, 6.8676, 7.0991, 7.2515, 7.3617, 7.4311, 7.4493, 7.4919, 7.502, 7.7884, 7.905, 7.9903, 8.3502, 8.3502, 8.389, 8.4337, 8.4337, 8.5023, 8.51, 8.5183, 8.5675, 8.6849, 8.7988, 8.8354, 8.8422, 8.9533, 8.9553, 8.9555, 8.989, 9.0323, 9.1343, 9.1563, 9.2815, 9.3241, 9.3431, 9.917, 9.9743, 10.2523, 10.2527, 10.4694, 10.7698, 10.8779, 11.3919, 11.7615, 12.0781, 12.1699, 12.1763, 12.5824, 12.5865, 12.7834, 13.0178, 13.5275, 13.7262], [7.3698, 3.0463])