

Final Test Report

Project 25

Test Scenario 1

Test case 1: The number of clusters is a number type and between 0 and 50

Test results: Pass

Required improvement: None

Code Coverage: 100% (one line of code handled in file cluster.html)

Test case 2: Default number of clusters is set to 2 (all algorithms)

Test results: Pass

Required improvement: None

Code Coverage: 100% (one line of code handled in file cluster.html)

Test Scenario 2

Test case 1: K-Medoid dependency issues

Test results: Pass

Required improvement: Modify the existing code to overcome the issues of dependencies

Code Coverage: 57% (k_medoids is a coded file with 48 lines of code and it is integrated in the all.py)

Test Scenario 3

Test case 1: Integration of dimensionality reduction (PCA) in all implemented algorithms

Test results: Pass

Required improvement: Modification to clustering algorithms

Code Coverage: 58% (set apply_pca to true in the html and it is continued and checked everywhere.)

Test Scenario 4

Test case 1: Saving the output files on the server side in a folder and the previous files are removed to avoid confusion

Test results: Pass.

Required improvement: None

Code Coverage: 100% (17 lines of code. Pressing download output on Download tab runs the download_output method.)

Test Scenario 5

Test case 1: Terminating the clustering calculation by user demand via pressing “Terminate Clustering” button in UI

Test results: Pass. Every parameter is reset.

Required improvement: Implementation and modification in the UI and clustering code

Code Coverage: 100% (a single line of code is tested)

Test Scenario 6

Test case 1: File format conversion (.csv and .xlsx)

Test results: Pass

Required improvement: None

Code Coverage: 20% (9 lines of code in csv_from_excel method.)

Test case 2: Datapoints values are imported with correct formatting.

Test results: Pass

Required improvement: None

Code Coverage: 41% (Ten lines of code in clean_data applied to all methods)

Test Scenario 7

Test case 1: Removing unnecessary columns from dataset

Test results: Pass

Required improvement: None

Code Coverage: 62 % (One line of code in clean_data applied to all methods)

Test Scenario 8

Test case 1: Output is saved in proper format

Test results: Pass

Required improvement: None

Code Coverage: 14 % (7 lines of code in download_data method)

Test Scenario 9

Test case 1: Get summary (summary of input data reported correctly)

Test results: Pass

Required improvement: None

Code Coverage: 100 % (37 lines of code in get_summary and related html)

Test Scenario 10

Test case 1: Dimensionality Reduction functionality

Test results: Pass

Required improvement: None

Code Coverage: 58 % (apply_pca is to true in the html and it is continued and checked everywhere.)

Test Scenario 11

Test case 1: Get summary of results and downloading results as excel file

Test results: Pass

Required improvement: None

Code Coverage: 100 % (16 lines code and download html)

Test Scenario 12

Test case 1: Disable download option before clustering is complete and enabled after completion of clustering

Test results: Pass

Required improvement: None

Code Coverage: 100 % (4 lines were modified)

Test Scenario 13

Test case 1: Pressing Upload summary before uploading the file

Test results: Pass (and informs the user to first upload a file)

Required improvement: adding server-side session to the application

Code Coverage: 100 % (one line of code. For this test all code is run during the test.)

Test Scenario 14

Test case 1: Testing hyperlinks are functional

Test results: Pass

Required improvement: None

Code Coverage: 100% (All the hyperlinks in the home page of the application are tested and are functional)

Test Scenario 15

Test case 1: Standardizing (scaling) input data

Test results: Pass

Required improvement: None

Code Coverage: 58 % (the input data being integer for number of clusters, cluster method for the algorithm selected and apply pca being True and false values. All these are converted into respective data types as required in various places of the application)

Test Scenario 16

Test case 1: Pressing the submit button for preprocessing before uploading a file

Test results: Pass (It warns the user to upload)

Required improvement: None

Code Coverage: 20 % (1 line, It warns the user to upload)

Test Scenario 17

Test case 1: Cross - browser support

Test results: Fail

Required improvement: Cookies of the browser can be cleared

Code Coverage: 10% (with the start of the application by default it starts on default browser. But can run on other browsers as well.)

Test Scenario 18

Test case 1: Unexpected Error : 500

Test results: Pass

Required improvement: None

Code Coverage: 100 % (500 error files are included and called in case of exception)

Test Scenario 19

Test case 1: Unexpected Error : 404

Test results: Pass

Required improvement:

Code Coverage: 100 % (404 error files are included and called in case of exception)

Test Scenario 20

Test case 1: Clustering without passing the number of clusters

Test results: Pass

Required improvement: None

Code Coverage: 100% (the exception is handled using error.html files)

Test Scenario 21

Test case 1: Image Clustering

Test results: Pass

Required improvement: None

Code Coverage: 100% (the file runs on colab and uploads the data files from the users' drive.
The entire code runs on colab until downloaded)