Lab 4 Test Report

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SDEV 300

Purpose

This document serves to cover the test scenarios used to evaluate the SDEV 300 Lab 4 application as well as the source code compliance to PEP 8 Code Styling.

Overview

The testing focused on verifying handling of properly and improperly formatted user input to take in user information (i.e., a phone number and zip code) and allow the user to input and act on two matrices. The application is to run as a command line application to prompt the user to enter the appropriate data, inform the user if there is an input error allowing them to try again, and allow them to exit the application.

Code Style Guide

On Lab 4, I utilized the PyCharm IDE for development. PyCharm enabled me to write compliant code during development and each pylint evaluation received a score of 10.00.

Below is a copy - paste of the pylint evaluation of lab_four.py source code.

Your code has been rated at 10.00/10 (previous run: 10.00/10, +0.00)

Test Scenarios

Below is an overview of the test scenarios, the purpose of each test, the data input (where applicable), the expected result, the final result, and the associated figure where a screenshot may be viewed.

Test Case	Purpose	Data Input	Expected Result	Result	Figure
Test 1 - Invalid Input at Main	Demonstrate the ability of the command line interface to alert the user of an invalid input and allow them to re-enter the selection	[d]	Interface alerts the user that they entered invalid input and allows them to re-enter.	Pass	Figure 1
Test 2 - Valid Input at Main (‘y’ to Play Game)	Demonstrate that upon selecting to play the game with a ‘y’, the user is	[y]	The user is made aware that they may go back at anytime with ‘-1’ and then	Pass	Figure 2

	prompted to enter their phone number		prompted to enter a phone number - which signifies the first step in playing the game		
Test 3 - Invalid and Valid Input At The Phone Number Prompt	Demonstrate the ability of the application to properly deal with improperly formatted input, make the user aware, and prompt them again for the correct input.	[123-123-12 3123123123 21, d, lll-lll-llll, 123-123-12 34]	With each improperly formatted input attempt, the user is made aware and prompted for correct input. Upon correctly formatted user input being entered, the application moves to prompting for the Zip code	Pass	Figure 3
Test 4 - Invalid and Valid Input At The Zip Code Prompt	Demonstrate the ability of the application to properly deal with improperly formatted input, make the user aware, and prompt them again for the correct input.	[123123, d, 12345-1234]	With each improperly formatted input attempt, the user is made aware and prompted for correct input. Upon correctly formatted user input being entered, the application moves to prompting for the Matrices	Pass	Figure 4
Test 5 - Invalid and Valid Input At The Matrice Prompt	Demonstrate the ability of the application to properly deal with improperly formatted input, make the user aware, and prompt them again for the correct input.	[d, [d d d], [1 2 3]]	With each improperly formatted input attempt, the user is made aware and prompted for correct input. Upon correctly formatted user input being entered, the application moves to prompting for the next matrice information	Pass	Figure 5
Test 6 - Invalid User Selection at Matrix Operation Prompt	Show the ability of the application to gracefully alert the user of the error and allow them to re-enter a selection for matrix operation	[f, 3]	The user is made aware of the error in user input and re-prompted to make a selection	Pass	Figure 6

Test 7 - Matrix Addition	Show the ability of the application to properly add two user defined matrices, display the output matrix, the mean of the rows and columns, as well as the transpose of the output matrix	[[1 2 3 1 2 3 1 2 3], [5 5 5 5 5 5 5 5 5], a]	The application properly adds the matrices and displays the expected data	Pass	Figure 7
Test 8 - Matrix Subtraction	Show the ability of the application to properly subtract one matrix from the other, display the output matrix, the mean of the rows and columns, as well as the transpose of the output matrix	[[1 2 3 1 2 3 1 2 3], [7 7 7 7 7 7 7 7 7], b]	The application properly subtracts the matrices and displays the expected data	Pass	Figure 8
Test 9 - Matrix Multiplication	Show the ability of the application to properly multiply two user defined matrices, display the output matrix, the mean of the rows and columns, as well as the transpose of the output matrix	[[1 2 3 1 2 3 1 2 3], [7 7 7 7 7 7 7 7 7], c]	The application properly multiplies the matrices and displays the expected data	Pass	Figure 9
Test 10 - Element by Element Multiplication	Show the ability of the application to properly multiply two user defined matrices element-by-element, display the output matrix, the mean of the rows and columns, as well as the transpose of the output matrix	[5]	The application properly multiplies the matrices and displays the expected data	Pass	Figure 10
Test 11 - Valid Input at Main (‘n’ to Exit Game)	Demonstrate the Ability of the Application to Gracefully Exit Upon Proper User Input	‘n’	The application gracefully exits	Pass	Figure 11

Figure 1: Test 1 - Invalid Input at Main

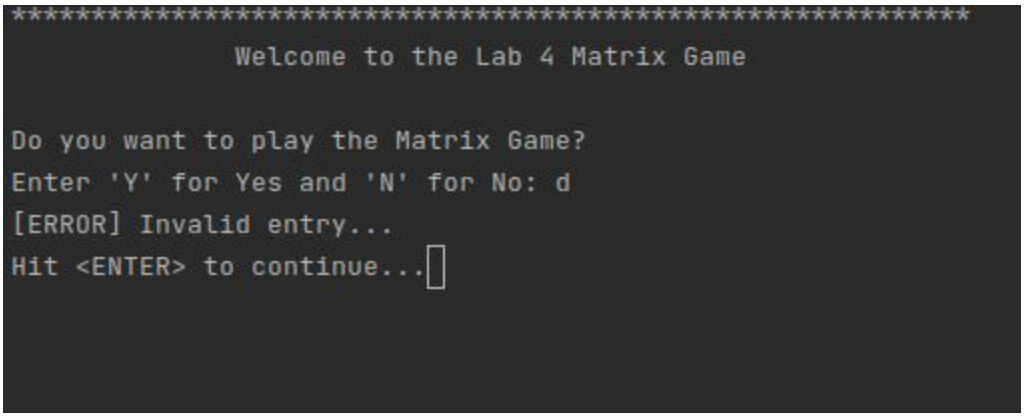

Figure 2: Test 2 - Valid Input at Main (‘y’ to Play Game)

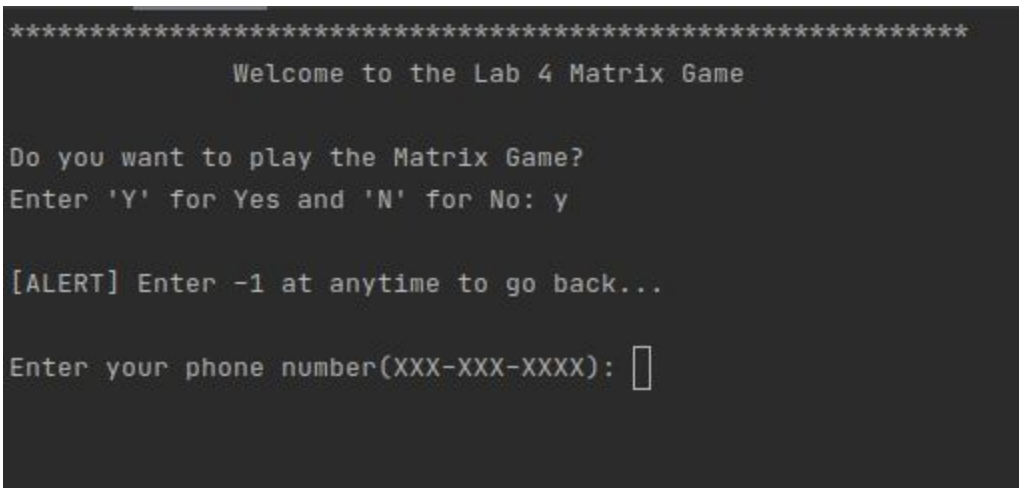

Figure 3: Test 3 - Improper and Proper User Input for Phone Number

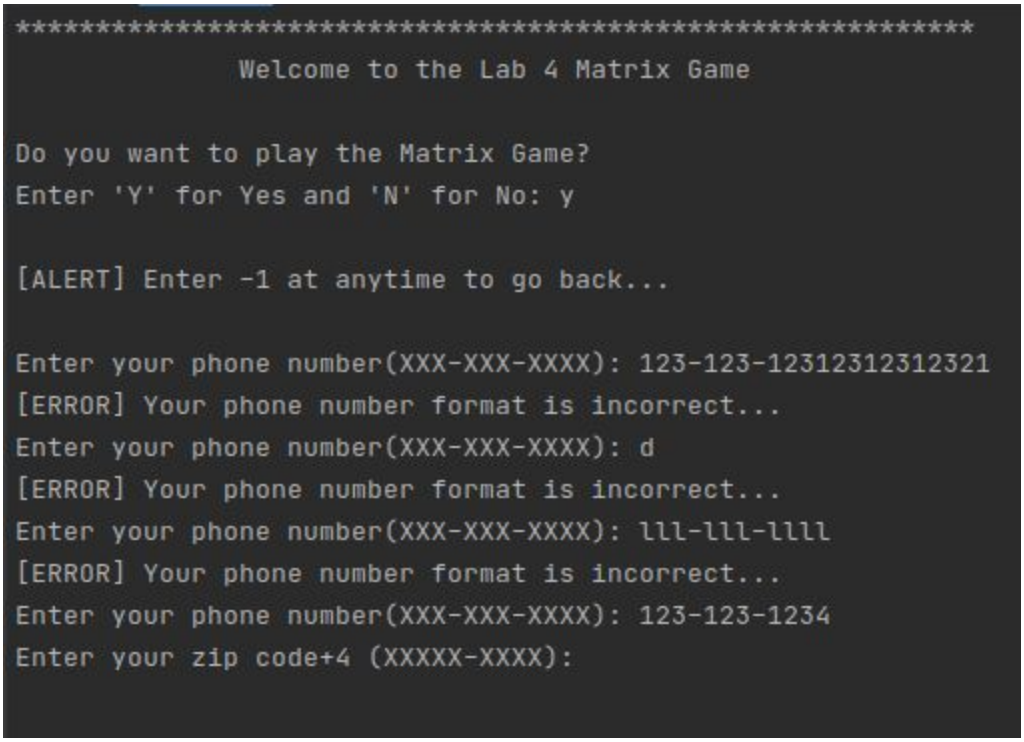

Figure 4: Test 4 - Invalid and Valid Input At The Zip Code Prompt

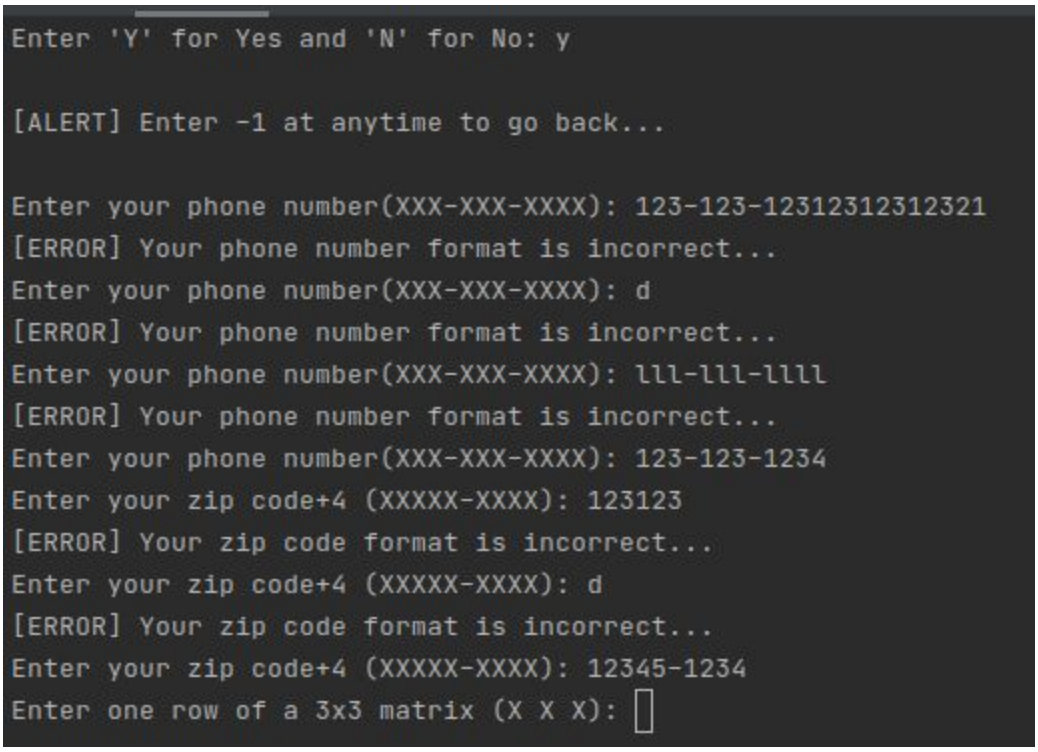

Figure 5: Test 5 - Invalid and Valid Input At The Matrice Prompt

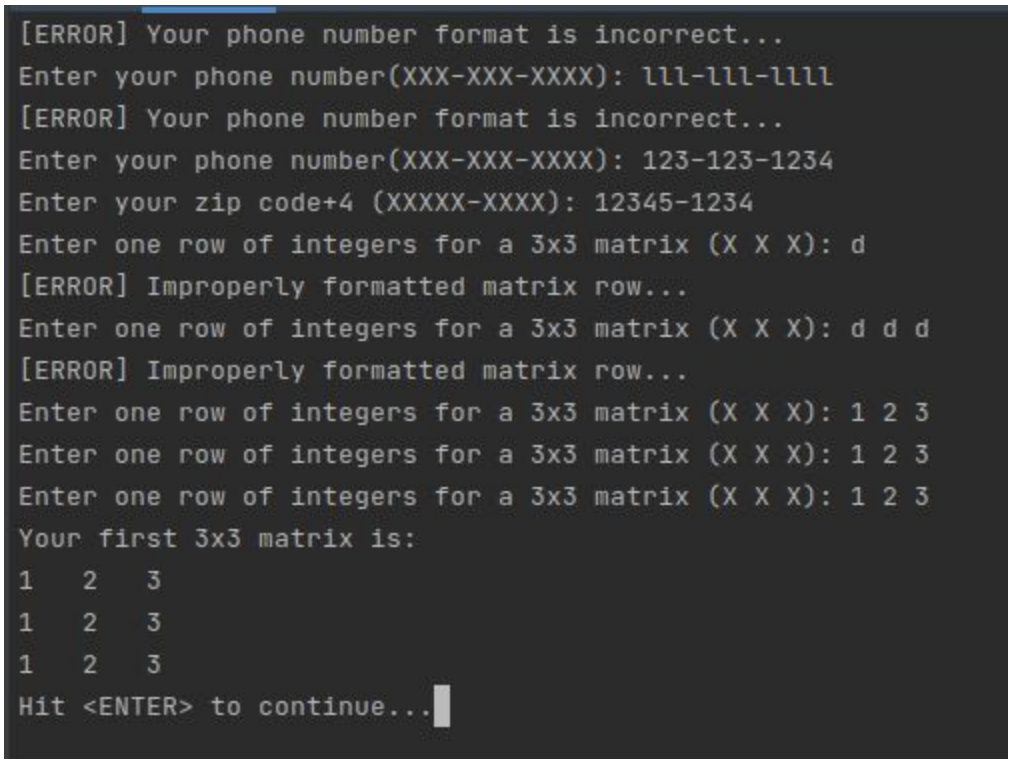

Figure 6: Test 6 - Invalid User Selection at Matrix Operation Prompt

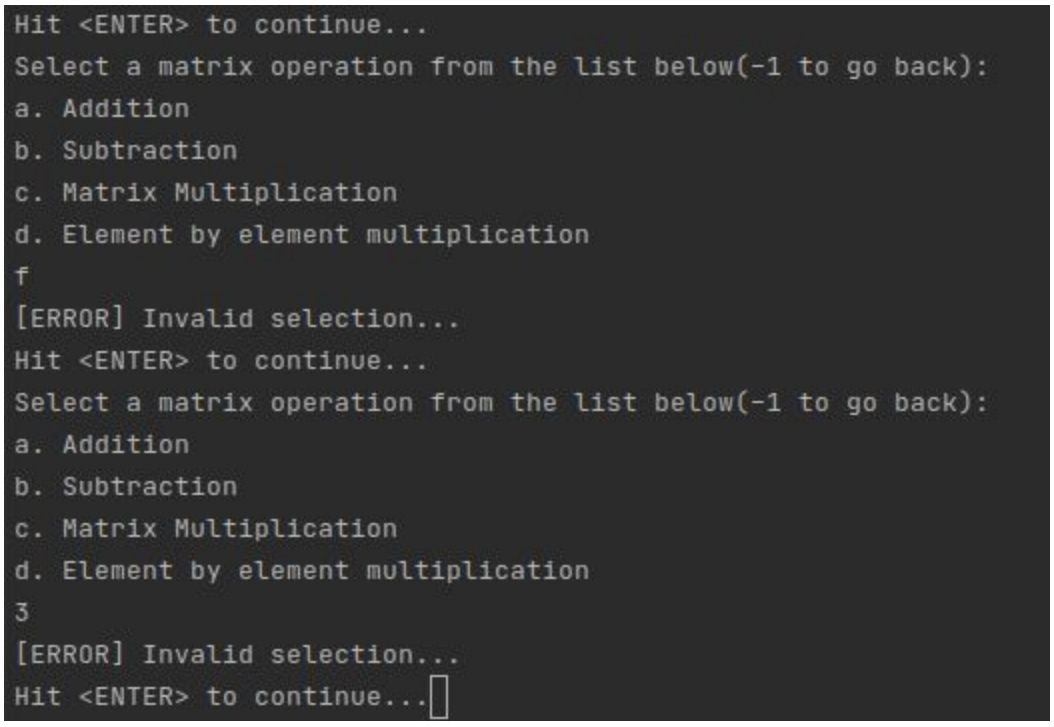

Figure 7: Test 7 - Matrix Addition

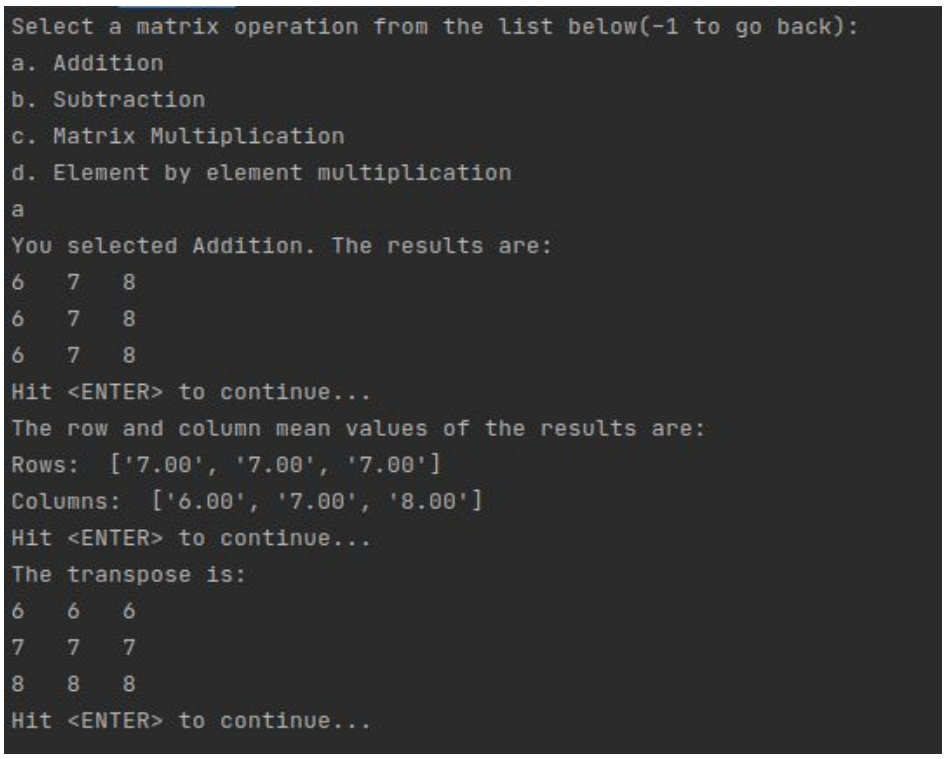

Figure 8: Test 8 - Matrix Subtraction

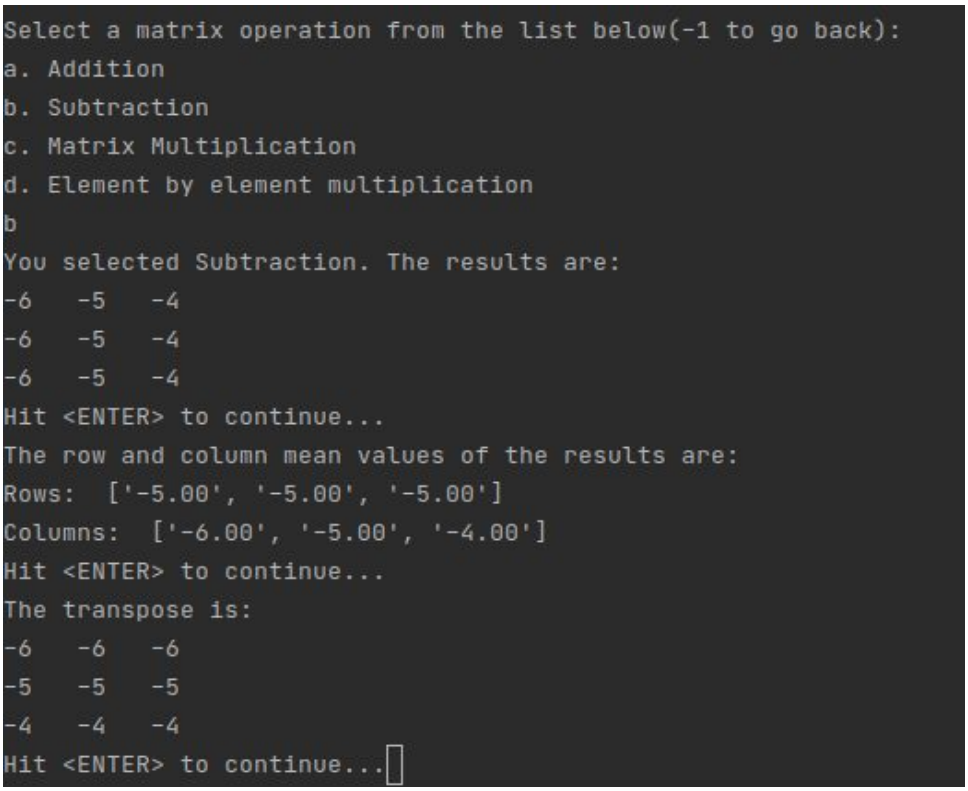

Figure 9: Test 9: Matrix Multiplication

```
Select a matrix operation from the list below(-1 to go back):
a. Addition
b. Subtraction
c. Matrix Multiplication
d. Element by element multiplication
c
('You selected Matrix Multiplication.', 'The results are: ')
42   42   42
42   42   42
42   42   42
Hit <ENTER> to continue...
The row and column mean values of the results are:
Rows:  ['42.00', '42.00', '42.00']
Columns:  ['42.00', '42.00', '42.00']
Hit <ENTER> to continue...
The transpose is:
42   42   42
42   42   42
42   42   42
Hit <ENTER> to continue...
```

Figure 10: Test 10 - Element by Element Multiplication

```
Select a matrix operation from the list below(-1 to go back):
a. Addition
b. Subtraction
c. Matrix Multiplication
d. Element by element multiplication
d
You selected element by elementmultiplication. The results are:
7   14   21
7   14   21
7   14   21
Hit <ENTER> to continue...
The row and column mean values of the results are:
Rows:  ['14.00', '14.00', '14.00']
Columns:  ['7.00', '14.00', '21.00']
Hit <ENTER> to continue...
The transpose is:
7   7   7
14   14   14
21   21   21
Hit <ENTER> to continue...
```

Figure 11: Test 11 - Valid Input at Main (‘n’ to Exit Game)