**Lab Four**

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**Course:** SDEV 300

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| --- | --- | --- | --- | --- | --- | --- |
| **Test Case** | **Test Description** | **Procedure** | **Input** | **Expected Output** | **Actual Output** | **Pass?** |
| 1. **Yes or No menu** | | | | | | |
| 1a-a | Test if the program can validate user’ s input | + Run the program.  + Type ‘x’ | X | Input must be 'Y' or 'N'  Do you want to play the Matrix Game? | Input must be 'Y' or 'N'  Do you want to play the Matrix Game? | Yes |
| 1a-b | Test if the program proceeds when user opted ‘y’ | + Run the program.  + Type ‘y’ | y | Enter your phone number (XXX-XXX-XXXX): | Enter your phone number (XXX-XXX-XXXX): | Yes |
| 1b-a | Test if the program exits and display a message when user opted ‘n’ | + Run the program.  + Type ‘n’ | n | \*\*\*\*\*\*\*\*\*\*\* Thanks for playing Python Numpy \*\*\*\*\*\*\*\*\*\*\*\*\*\*\* | \*\*\*\*\*\*\*\*\*\*\* Thanks for playing Python Numpy \*\*\*\*\*\*\*\*\*\*\*\*\*\*\* | Yes |
| 1. **Phone number** | | | | | | |
| 2a-a | Test if the program validates user’s phone number | + Run the program.  + Type ‘y’  +12-12-124 | 12-12-124 | Your phone number is not in correct format. Please renter: | Your phone number is not in correct format. Please renter: | Yes |
| 2a-b | Test if the program validates user’s phone number (10 digits including alphabets) | + Run the program.  + Type ‘y’  +123-123-124a | 123-123-124a | Your phone number is not in correct format. Please renter: | Your phone number is not in correct format. Please renter: | Yes |
| 2b | Test if the program validates user’s phone number | + Run the program.  + Type ‘y’  +123-123-1245 | 123-123-1245 | Enter your zip code+4 (XXXXX-XXXX): | Enter your zip code+4 (XXXXX-XXXX): | Yes |
| 1. **Zip-Code** | | | | | | |
| 3a | Test if the program validates user’s zip-code | + Run the program.  + Type ‘y’  + 123-123-1245  + 12-12a | 12-12a | Your zip-code is not in correct format. Please renter: | Your zip-code is not in correct format. Please renter: | Yes |
| 3b | Test if the program validates user’s zip-code | + Run the program.  + Type ‘y’  + 123-123-1245  + 12345-1234 | 12345-1234 | Enter your first 3x3 matrix: | Enter your first 3x3 matrix: | Yes |
| 1. **Matrix input** | | | | | | |
| 4a-a | Test if the program validated users input(numeric only) | + Run the program.  + Type ‘y’  + 123-123-1245  + 12345-1234  + 1 2 a  + hit Enter | 1 2 a | Invalid input. Please enter three float numbers separated by a space. | Invalid input. Please enter three float numbers separated by a space. | Yes |
| 4a-b | Test if the program validates the number of elements in each row equals to three | + Run the program.  + Type ‘y’  + 123-123-1245  + 12345-1234  + 1 2 3 4  + hit Enter | 1 2 3 4 | Invalid input. Please enter exactly three float numbers separated by a space. | Invalid input. Please enter exactly three float numbers separated by a space. | Yes |
| 4a-c | Test if the program validates and take correct matrix format | + Run the program.  + Type ‘y’  + 123-123-1245  + 12345-1234  + 1 2 3  + hit Enter  + 1 2 3  + hit Enter  + 1 2 3  + hit Enter | 1 2 3  1 2 3  1 2 3 | Will display the matrix | Matrix displayed | Yes |
| 4b | Test if the program displays the matrix entered by the user | + Run the program.  + Type ‘y’  + 123-123-1245  + 12345-1234  + 1 2 3  + hit Enter  + 1 2 3  + hit Enter  + 1 2 3  + hit Enter | 1 2 3  1 2 3  1 2 3 | Will display the matrix | Will display the matrix | Yes |
| 1. **Matrix Operation list and Operations** | | | | | | |
| 5a-a | Test if the program displays matrix operation lists to the user | + Run the program.  + Type ‘y’  + 123-123-1245  + 12345-1234  + 1 2 3  + hit Enter  + 1 2 3  + hit Enter  + 1 2 3  + hit Enter  + 4 5 6  + hit Enter  + 7 8 9  + hit Enter  + 1 2 3  + hit Enter | NA | Select a Matrix Operation from the list below:  a. Addition  b. Subtraction  c. Matrix Multiplication  d. Element by element multiplication | Select a Matrix Operation from the list below:  a. Addition  b. Subtraction  c. Matrix Multiplication  d. Element by element multiplication | Yes |
| 5a-b | Test if the program validates user’s choice (a-d) from the matrix operations list | + Run the program.  + Type ‘y’  + 123-123-1245  + 12345-1234  + 1 2 3  + hit Enter  + 1 2 3  + hit Enter  + 1 2 3  + hit Enter  + 4 5 6  + hit Enter  + 7 8 9  + hit Enter  + 1 2 3  + hit Enter  + z | z | Invalid Input!!!  Select a Matrix Operation from the list below:  a. Addition  b. Subtraction  c. Matrix Multiplication  d. Element by element multiplication | Invalid Input!!!  Select a Matrix Operation from the list below:  a. Addition  b. Subtraction  c. Matrix Multiplication  d. Element by element multiplication | Yes |
| 5a-c | Test if the program validates user’s choice (a-d) from the matrix operations list | + Run the program.  + Type ‘y’  + 123-123-1245  + 12345-1234  + 1 2 3  + hit Enter  + 1 2 3  + hit Enter  + 1 2 3  + hit Enter  + 4 5 6  + hit Enter  + 7 8 9  + hit Enter  + 1 2 3  + hit Enter  + 12 | 12 |  |  | Yes |
| 5a-d | Test if the program validates user’s choice (a-d) from the matrix operations list | + Run the program.  + Type ‘y’  + 123-123-1245  + 12345-1234  + 1 2 3  + hit Enter  + 1 2 3  + hit Enter  + 1 2 3  + hit Enter  + 4 5 6  + hit Enter  + 7 8 9  + hit Enter  + 1 2 3  + hit Enter  + a | a | Program will proceed to the next operation | Program proceeded to the next operation. | Yes |
| 5b-a-a | Test if the program adds tow matrices | + Run the program.  + Type ‘y’  + 123-123-1245  + 12345-1234  + 1 2 3  + hit Enter  + 1 2 3  + hit Enter  + 1 2 3  + hit Enter  + 4 5 6  + hit Enter  + 7 8 9  + hit Enter  + 1 2 3  + hit Enter  + a | a | You selected Addition. The results are:  5.0 7.0 9.0  8.0 10.0 12.0  2.0 4.0 6.0 | You selected Addition. The results are:  5.0 7.0 9.0  8.0 10.0 12.0  2.0 4.0 6.0 | Yes |
| 5b-a-b | Test if the program computes the transpose of the sum of two matrices | + Run the program.  + Type ‘y’  + 123-123-1245  + 12345-1234  + 1 2 3  + hit Enter  + 1 2 3  + hit Enter  + 1 2 3  + hit Enter  + 4 5 6  + hit Enter  + 7 8 9  + hit Enter  + 1 2 3  + hit Enter  + a | a | The Transpose is:  5.0 8.0 2.0  7.0 10.0 4.0  9.0 12.0 6.0 | The Transpose is:  5.0 8.0 2.0  7.0 10.0 4.0  9.0 12.0 6.0 | Yes |
| 5b-a-c | Test if the program computes the row and column mean values from the result of the sum of two matrices. | + Run the program.  + Type ‘y’  + 123-123-1245  + 12345-1234  + 1 2 3  + hit Enter  + 1 2 3  + hit Enter  + 1 2 3  + hit Enter  + 4 5 6  + hit Enter  + 7 8 9  + hit Enter  + 1 2 3  + hit Enter  + a | a | The row and column mean values of the results are:  Row: 7.0 ,10.0 ,4.0 ,  Column: 5.0 ,7.0 ,9.0 , | The row and column mean values of the results are:  Row: 7.0 ,10.0 ,4.0 ,  Column: 5.0 ,7.0 ,9.0 , | Yes |
| 5b-b-a | Test if the program subtracts tow matrices | + Run the program.  + Type ‘y’  + 123-123-1245  + 12345-1234  + 1 2 3  + hit Enter  + 1 2 3  + hit Enter  + 1 2 3  + hit Enter  + 4 5 6  + hit Enter  + 7 8 9  + hit Enter  + 1 2 3  + hit Enter  + b | b | You selected Subtraction. The results are:  -3.0 -3.0 -3.0  -6.0 -6.0 -6.0  0.0 0.0 0.0 | You selected Subtraction. The results are:  -3.0 -3.0 -3.0  -6.0 -6.0 -6.0  0.0 0.0 0.0 | Yes |
| 5b-b-b | Test if the program computes the transpose from the output of the difference of the two matrices | + Run the program.  + Type ‘y’  + 123-123-1245  + 12345-1234  + 1 2 3  + hit Enter  + 1 2 3  + hit Enter  + 1 2 3  + hit Enter  + 4 5 6  + hit Enter  + 7 8 9  + hit Enter  + 1 2 3  + hit Enter  + b | b | The Transpose is:  -3.0 -6.0 0.0  -3.0 -6.0 0.0  -3.0 -6.0 0.0 | The Transpose is:  -3.0 -6.0 0.0  -3.0 -6.0 0.0  -3.0 -6.0 0.0 | Yes |
| 5b-b-c | Test if the program computes the row and column mean values from the result of the difference of two matrices. | + Run the program.  + Type ‘y’  + 123-123-1245  + 12345-1234  + 1 2 3  + hit Enter  + 1 2 3  + hit Enter  + 1 2 3  + hit Enter  + 4 5 6  + hit Enter  + 7 8 9  + hit Enter  + 1 2 3  + hit Enter  + b | b | The row and column mean values of the results are:  Row: -3.0 ,-6.0 ,0.0 ,  Column: -3.0 ,-3.0 ,-3.0 , | The row and column mean values of the results are:  Row: -3.0 ,-6.0 ,0.0 ,  Column: -3.0 ,-3.0 ,-3.0 , | Yes |
| 5b-c-a | Test if the program multiplies two matrices | + Run the program.  + Type ‘y’  + 123-123-1245  + 12345-1234  + 1 2 3  + hit Enter  + 1 2 3  + hit Enter  + 1 2 3  + hit Enter  + 4 5 6  + hit Enter  + 7 8 9  + hit Enter  + 1 2 3  + hit Enter  + c | c | You selected Multiplication. The results are:  21.0 27.0 33.0  21.0 27.0 33.0  21.0 27.0 33.0 | You selected Multiplication. The results are:  21.0 27.0 33.0  21.0 27.0 33.0  21.0 27.0 33.0 | Yes |
| 5b-c-b | Test if the program computes the transpose from the output of the product of the two matrices | + Run the program.  + Type ‘y’  + 123-123-1245  + 12345-1234  + 1 2 3  + hit Enter  + 1 2 3  + hit Enter  + 1 2 3  + hit Enter  + 4 5 6  + hit Enter  + 7 8 9  + hit Enter  + 1 2 3  + hit Enter  + c | c | The Transpose is:  21.0 21.0 21.0  27.0 27.0 27.0  33.0 33.0 33.0 | The Transpose is:  21.0 21.0 21.0  27.0 27.0 27.0  33.0 33.0 33.0 | Yes |
| 5b-c-c | Test if the program computes the row and column mean values from the result of the product of two matrices. | + Run the program.  + Type ‘y’  + 123-123-1245  + 12345-1234  + 1 2 3  + hit Enter  + 1 2 3  + hit Enter  + 1 2 3  + hit Enter  + 4 5 6  + hit Enter  + 7 8 9  + hit Enter  + 1 2 3  + hit Enter  + c | c | The row and column mean values of the results are:  Row: 27.0 ,27.0 ,27.0 ,  Column: 21.0 ,27.0 ,33.0 , | The row and column mean values of the results are:  Row: 27.0 ,27.0 ,27.0 ,  Column: 21.0 ,27.0 ,33.0 , | Yes |
| 5b-d-a | Test if the program multiplies two matrices (element by element) | + Run the program.  + Type ‘y’  + 123-123-1245  + 12345-1234  + 1 2 3  + hit Enter  + 1 2 3  + hit Enter  + 1 2 3  + hit Enter  + 4 5 6  + hit Enter  + 7 8 9  + hit Enter  + 1 2 3  + hit Enter  + d | d | You selected Element by element Multiplication. The results are:  21.0 27.0 33.0  21.0 27.0 33.0  21.0 27.0 33.0 | You selected Element by element Multiplication. The results are:  21.0 27.0 33.0  21.0 27.0 33.0  21.0 27.0 33.0 | Yes |
| 5b-d-b | Test if the program computes the transpose from the output of the product of the two matrices (element by element) | + Run the program.  + Type ‘y’  + 123-123-1245  + 12345-1234  + 1 2 3  + hit Enter  + 1 2 3  + hit Enter  + 1 2 3  + hit Enter  + 4 5 6  + hit Enter  + 7 8 9  + hit Enter  + 1 2 3  + hit Enter  + d | d | The Transpose is:  21.0 21.0 21.0  27.0 27.0 27.0  33.0 33.0 33.0 | The Transpose is:  21.0 21.0 21.0  27.0 27.0 27.0  33.0 33.0 33.0 | Yes |
| 5b-d-c | Test if the program computes the row and column mean values from the result of the product of two matrices (element by element). | + Run the program.  + Type ‘y’  + 123-123-1245  + 12345-1234  + 1 2 3  + hit Enter  + 1 2 3  + hit Enter  + 1 2 3  + hit Enter  + 4 5 6  + hit Enter  + 7 8 9  + hit Enter  + 1 2 3  + hit Enter  + d | d | The row and column mean values of the results are:  Row: 27.0 ,27.0 ,27.0 ,  Column: 21.0 ,27.0 ,33.0 , | The row and column mean values of the results are:  Row: 27.0 ,27.0 ,27.0 ,  Column: 21.0 ,27.0 ,33.0 , | Yes |
| 1. **Exit Menu** | | | | | | |
| 6 | Test if the program prompts user with the option to continue or exit the program after every matrix operation. | + Run the program.  + Type ‘y’  + 123-123-1245  + 12345-1234  + 1 2 3  + hit Enter  + 1 2 3  + hit Enter  + 1 2 3  + hit Enter  + 4 5 6  + hit Enter  + 7 8 9  + hit Enter  + 1 2 3  + hit Enter  + d | d | ‘  ‘  ‘  \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Welcome to the Python Matrix Application\*\*\*\*\*\*\*\*\*\*\*  Do you want to play the Matrix Game?  Enter Y for Yes or N for No: | ‘  ‘  ‘  \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Welcome to the Python Matrix Application\*\*\*\*\*\*\*\*\*\*\*  Do you want to play the Matrix Game?  Enter Y for Yes or N for No: | Yes |

1a-a

A screen shot of a computer

Description automatically generated with low confidence

1a-b

A black background with white text

Description automatically generated with low confidence

1b-a

A screenshot of a computer program

Description automatically generated with low confidence

2a-a

A black screen with white text

Description automatically generated with low confidence

2a-b

A black background with white text

Description automatically generated with low confidence

3a

A picture containing text, screenshot, font

Description automatically generated’

3b

A black background with white text

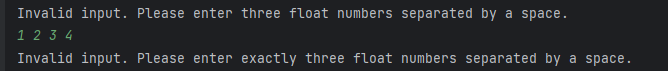
Description automatically generated with low confidence

4a-a

A black background with white text

Description automatically generated with low confidence

4a-b



4a-c

A black screen with white text

Description automatically generated with low confidence

4b

A screenshot of a computer

Description automatically generated with medium confidence

5a-a

A black screen with white text

Description automatically generated with low confidence

5a-b

A screen shot of a computer

Description automatically generated with low confidence

5a-c

A screenshot of a computer

Description automatically generated with medium confidence

5a-d

A screenshot of a computer program

Description automatically generated with low confidence

5b-a-a

A black screen with white text

Description automatically generated with low confidence

5b-a-b

A picture containing text, font, screenshot, typography

Description automatically generated

5b-a-c

A black screen with white text

Description automatically generated with low confidence

5b-b-a

A screen shot of a computer

Description automatically generated with medium confidence

5b-b-b

A picture containing text, font, screenshot, typography

Description automatically generated

5b-b-c

A black background with white text

Description automatically generated with low confidence

5b-c-a, b, c

A screenshot of a computer

Description automatically generated with medium confidence

5b-d-a, b, c

A screenshot of a computer

Description automatically generated

Pylint Analysis:

1st Try

A screen shot of a computer

Description automatically generated with medium confidence

2nd Try

A screen shot of a computer program

Description automatically generated with low confidence