**LAB #4 – Numpy and Pandas Application Program**

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Course – SDEV 300

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**Table 1. Password Cracking Activity Results** ……………………………………………………………………………………………………………………………………………17

# **Test Plan**

|  |  |
| --- | --- |
| **Test Case # 1 - Entering and validating phone number** | |
| **Input** | Y  567-45-3222  586-456-3212 |
| **Expected Output** | Your phone number is not in correct format. Please reenter: |
| **Actual Output** | Your phone number is not in correct format. Please reenter: |
| **Pass?** | **YES** |
| **Screenshots** | Text  Description automatically generated |

|  |  |
| --- | --- |
| **Test Case # 2 - Entering and validating zipcode+4** | |
| **Input** | Y  586-678-3456  45666  44444  32456-2345 |
| **Expected Output** | Your zip code is not in correct format. Please reenter:  Your zip code is not in correct format. Please reenter: |
| **Actual Output** | Your zip code is not in correct format. Please reenter:  Your zip code is not in correct format. Please reenter: |
| **Pass** | **YES** |
| **Screenshots** | Text  Description automatically generated  Text  Description automatically generated |

|  |  |
| --- | --- |
| **Test Case # 3 – Entering two matrices and selecting addition option** | |
| **Input** | Y  586-123-5623  45678-1234  1  2  4  4  2  1  3  8  9  3  2  1  7  2  5  5  2  1 |
| **Expected Output** | Your first 3x3 matrix is:  1 2 4  4 2 1  3 8 9  Your second 3x3 matrix is:  3 2 1  7 2 5  5 2 1  Select a Matrix Operation from the list below:  a. Addition  b. Subtraction  c. Matrix Multiplication  d. Element by element multiplication  e. Quitting the program  a  You selected Addition. The results are:  4 4 5  11 4 6  8 10 10  The Transpose is:  4 11 8  4 4 10  5 6 10  The row and column mean values of the results are:  Row: [4.33 7. 9.33]  Column: [7.67 6. 7. ] |
| **Actual Output** | Your first 3x3 matrix is:  1 2 4  4 2 1  3 8 9  Your second 3x3 matrix is:  3 2 1  7 2 5  5 2 1  Select a Matrix Operation from the list below:  a. Addition  b. Subtraction  c. Matrix Multiplication  d. Element by element multiplication  e. Quitting the program  a  You selected Addition. The results are:  4 4 5  11 4 6  8 10 10  The Transpose is:  4 11 8  4 4 10  5 6 10  The row and column mean values of the results are:  Row: [4.33 7. 9.33]  Column: [7.67 6. 7. ] |
| **Pass** | **YES** |
| **Screenshots**  **A screenshot of a computer  Description automatically generated with medium confidenceA picture containing text, electronics, screenshot  Description automatically generated**  **Text  Description automatically generated**  **Graphical user interface, text  Description automatically generated** | **Text  Description automatically generated**  **A picture containing graphical user interface  Description automatically generated** |

|  |  |
| --- | --- |
| **Test Case # 4 –** **Performing the subtraction option of the two matrices** | |
| **Input** | 1  2  4  4  2  1  3  8  9  3  2  1  7  2  5  5  2  1  b |
| **Expected Output** | Your first 3x3 matrix is:  1 2 4  4 2 1  3 8 9  Your second 3x3 matrix is:  3 2 1  7 2 5  5 2 1  Select a Matrix Operation from the list below:  a. Addition  b. Subtraction  c. Matrix Multiplication  d. Element by element multiplication  e. Quitting the program  b  You selected Subtraction. The results are:  -2 0 3  -3 0 -4  -2 6 8  The Transpose is:  -2 -3 -2  0 0 6  3 -4 8  The row and column mean values of the results are:  Row: [ 0.33 -2.33 4. ]  Column: [-2.33 2. 2.33] |
| **Actual Output** | Your first 3x3 matrix is:  1 2 4  4 2 1  3 8 9  Your second 3x3 matrix is:  3 2 1  7 2 5  5 2 1  Select a Matrix Operation from the list below:  a. Addition  b. Subtraction  c. Matrix Multiplication  d. Element by element multiplication  e. Quitting the program  b  You selected Subtraction. The results are:  -2 0 3  -3 0 -4  -2 6 8  The Transpose is:  -2 -3 -2  0 0 6  3 -4 8  The row and column mean values of the results are:  Row: [ 0.33 -2.33 4. ]  Column: [-2.33 2. 2.33] |
| **Pass** | **YES** |
| **Screenshots**  **­­** | ­­  Text  Description automatically generated |

Pylint results for Numpy and Pandas Application Program

Graphical user interface, text

Description automatically generated

Throughout the completion of lab 4 on Numpy and the Panda libraries, I got to experience a lot about Arrays and manipulating them with loops, conditions, and things in that regard. Focusing on my PYLINT score, it went even better this time as I had a few “trailing whitespace errors”, and for the docstring issues/errors I made sure that I described what each function as I created in my code had to do. Overall, not too many issues occurred with my application as it comes to working on my PYLINT score. Originally, I had a “9.00/10”, but minor changes as described above made my PYLINT score reach a “10.00/10”. To summarize it all up, my PYLINT results for this application has been the best compared to my other implementations of labs and their PYLINT score results. I hope to have a seamless experience with my PYLINT score as I did this time.

Table 1. Password Cracking Activity Results

Password: **Hello04**

Hash output:

**MD5: 747b4ddc4994448d0b224a2dc8994fea**

**SHA256: 5ba98899edaa55e45c36556d365085a95c69fc510725e091c068bf4f01d148d7**

**SHA512: afcd0a7779dba017db5ee81f0c61d18c153fd73fece28b83b7d6653afc662056b93cf5912432d689c7057f7ac5e0a51ebc05803b8252ad0e6835dc12010d98f6**

**blake2s: 3c18beff665216544bc690705456ab3ffd1082d765d1b3f1d09d406c35d520a3**

**SHA384: d0ae60b4167c0965b5feeba52075cbe887d393407b1d3256f091f1012b6484650d1224e5d5f6d1fd5ec87430dc0ee925**

**blake2b: 1f32f13fff475d353325919b37c7505ee660d47b1eb8aac7c985e4a00aba588d5d8ad25001927cb4daba9377e81b559e18f23235f604e32b4084bb20a9f7b88b**

**SHA1: a79e3974f878850c9647a17bc3adbfe6c6a760d9**

**SHA3\_224: 089e692b1b75ab5b113dc48ae9cbc5492b50be83b29dc0c8465311e1**

**SHA3\_384: d0ae60b4167c0965b5feeba52075cbe887d393407b1d3256f091f1012b6484650d1224e5d5f6d1fd5ec87430dc0ee925**

**SHA3\_512: f9cd19c0b65af1ddec0375a6683cd92ac69507e09c2e7b1d2801f0c19d3782d5959de4d9354a00257c857bb210ea7afe8aa1f5f31a03dfb5d0ffdc810b05e559**

Graphical user interface, text, application

Description automatically generated

Graphical user interface, application

Description automatically generated

Did Crackstation work? **YES and NO**

Password: **Password10**

Hash Output:

**MD5: 26a27c4eda5615486b20fb3103f1d2a6**

**SHA256: c0a09d876279cea6c57b4453c56737fd1b0c6c95e80b0a08ac48bcc97e719afd**

**SHA512: a82a2b031168e1975aa68525bb1971112c4f697d2efa1687096dbbb151b8a95928763a77648df330c4efe4c158d389d8b8370de28821e25f6e73187ed80f1d4e**

**blake2s: ab10457f1006b17199d096b35b871352df61cda1fb2ff4e868aa8ba83a0929ba**

**SHA384: 9294ea468e4abb7955b03de546987986dd9b2aee1b2af04a2565b076c45bdc9c3ecc7b9cd0231ed639e609bbab844cd9**

**blake2b: c043fb1adc1db0dce753d392fd458ed49c5afee12016945d552fe36f67f7aeea46bf0774778d0c126015112c37cb82ebe09927e345e0328de02ccf7b83c2d4cf**

**SHA1: 90ed9ee3124b5492939cc1572c0377b7e4633d51**

**SHA3\_224: e42db02fbc5a1efa2e75822958b01c8989433157344d95c432aedfe4**

**SHA3\_384: 9294ea468e4abb7955b03de546987986dd9b2aee1b2af04a2565b076c45bdc9c3ecc7b9cd0231ed639e609bbab844cd9**

**SHA3\_512: 3559642f1b3ceaefa87a86f00de633b2098cf5506c00f3fb13bc284d51792794886b3806e8b4cc4dbf582bdf30b1b6ac15ae02e94042a1ab769cd3bc7b1849ab**

**Graphical user interface, text

Description automatically generated**

Graphical user interface, application

Description automatically generated

Did Crackstation work? **YES and NO**

Password: **LebronGoatJames**

Hash Output:

**MD5: 2d9f143b5dc575fbda675a5383b73b42**

**SHA256: 668861fac9f3477b4e2a659aca34246df716ebe5eabc991f0a5ae26d60c3c302**

**SHA512: 0b89af898f3c8fc027c92c06cfb11cb2c787de9c45384ebce01caedc0c20308bd1470f44680d0b62562940b5207c3067e9b5839ac16948dde71cc11c38a4d361**

**blake2s: e09a75346d8074ff688620dd79592961c632920c8180c064ed073e62843cec71**

**SHA384: c5439902a9a4e852557cd5da4202cdfe6de56fa5ada9a4e383194a9f3906eef0c8180e2bb479d0ade85f867e78935dd0**

**blake2b: a891425f122d708f8572acf95588b92d40398912222f265c47667fd09fee34865b41fd7174a53ee079d1b374d169c27267e821df1a5ebbf1c53d3eb17e4cbf54**

**SHA1: af8944dbc77bd6a625679cefec6d4250d94adc5e**

**SHA3\_224: 47b284110580f47ed726d3543ce24d2efe9c526d2ed5a27e0fcd815c**

**SHA3\_384: c5439902a9a4e852557cd5da4202cdfe6de56fa5ada9a4e383194a9f3906eef0c8180e2bb479d0ade85f867e78935dd0**

**SHA3\_512: 97a133a61d1239a0dded50433bd9c131d0239c65b96b42437cd9c93319c82e926971be95d37c7ac105934854fa37e6ac307ceeb6b25748675ad5a5542ba18d1d**

**Graphical user interface, text

Description automatically generated**

Graphical user interface

Description automatically generated with medium confidence

Did Crackstation work? **NO**

Password: **WorkHard25**

Hash Output:

**MD5: fc2db8bde714a5d6b8fd35f59fd8e13a**

**SHA256: ef526cc5a7ba2dcdd25c76338cfe0f6ecc9c8ddddd30df67aa7ad6cc92831f4e**

**SHA512: 9cb4309adb02840e8cdef7915b915209026f9e511b4d58ea844ee488d7f5551d95836841b11bd3f5a762543f0df0e412f16a5c0bcfa3cd5713d01653693cdfc5**

**blake2s: d05114b8a17b3323c59e3fccb4b6551124f62b15192d07b634c178f67bcc9543**

**SHA384: 0728725d12638b8de072399f8fb60786315f1522aa5ada7fb96ffdc9f7ceefd1b4089c4ea84642151043a21e57ee7df7**

**blake2b: 4c13dd82bd210c831aaec99225d1edc7d012f3b74f2a3923aa4dde854337a5e85764b37d14d9b779a3820bf2199d56a780da94318ef66e20ff26a53a2a1092a1**

**SHA1: c96bcb54afbdfa65aa081e929e662defeb544c67**

**SHA3\_224: a1b62b02ab620289d03630f0fc2c4af1318e174fa92a694cff51b3ab**

**SHA3\_384: 0728725d12638b8de072399f8fb60786315f1522aa5ada7fb96ffdc9f7ceefd1b4089c4ea84642151043a21e57ee7df7**

**SHA3\_512: fce2b7c9b63063d9f5a68e2410ff429849248102d90b3ac60fc6717be25cd4c1778e704cde5e1432a9d415c589d672e2bca7644d7e42455e01d77d5d300738a0**

Text

Description automatically generated

Graphical user interface

Description automatically generated with medium confidence

Did Crackstation work? **NO**

Password: **easterday2022**

Hash Output:

**MD5: 87b74bb3f88a5c45293cd842dc2b1723**

**SHA256: 8b81f9792bd0c462ed90b735e7b58c8014c508d6b782b8430ab3d2ae009f0d29**

**SHA512: 15ad24d780e9eedfe2cd9ff445af00c33bfe3bf1b4c5711d5d18ab7d339d7e6d8454d4ef7af541e2527c535631dc58d8c92b1177d3669cfff922ba26787cb0b9**

**blake2s: 96f89bfa769ad0a2dac25f279fd8a543fdad94ba00b2c4d347c6265957a23b48**

**SHA384: e7c231768f59a8c873794d36263568697b8efe2b10539069eb44a08b2a29e940f133aae29e73ff9cf569689642aae664**

**blake2b: 3e298f0eca382469af06897a88b9eb01ab5c7cc6e05a68336d18089820bea4a672bc849ea92a93e84afda89120738994791d77ee63152fd80de1b596a6604f27**

**SHA1: 80bb74600f657a3f33a09f470d7ca50f6c292e27**

**SHA3\_224: 8fb470fe63119b9bb0d03a36a0d919e3d207ec6f8d3af661b71731de**

**SHA3\_384: e7c231768f59a8c873794d36263568697b8efe2b10539069eb44a08b2a29e940f133aae29e73ff9cf569689642aae664**

**SHA3\_512: df2247fc52d4cae613e41e1853e0001cea16f5a0e4399ee8600402f1a84f2783bd246ec22af6e2789fe38fc319835026c0a9eee5839df6528cda03544c85a550**

Graphical user interface, text

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Graphical user interface

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Did Crackstation work? **NO**

Password: **-ra2i@7lpheChiphuj35**

Hash Output:

**MD5: c6ab5f936e1f4eaa75ea5423ffb1394d**

**SHA256: 5218932e7f8d4202297c8bcc3504419d7599fc815e748af555cc0247ed27b8e6**

**SHA512: af045bbf36fce75a7792d12fbf67564a9b8294dac48422d6f16967ef3af48f2999200fddeed8fd7eaa8137ec2904f34bbb8a375eff387813a9d9119e33160487**

**blake2s: a6318247a45c43b7b1f3a563172ea66e982f055888b31285fbe89d7f9070465d**

**SHA384: 0bfecec1d7702d5245689c0ddbf181042138d6feeba37070cd03b68149a246698e20a7a22c8f5ceba8e8e7a723457dab**

**blake2b: bd06b77542cb2dc8895c850e2fa01a72cf03af1c919a2ba251f719d28ea13adc891ff626517dc4132e70236b33cea620240f5c77739e10c65ea6d6d9a347e16f**

**SHA1: 97fb4d42eee0b8b722b1ce417498c685e8610818**

**SHA3\_224: 5708a1ebf1d42342d84aa4396a516d1f8de2e5abba6ee24a4d3430e4**

**SHA3\_384: 0bfecec1d7702d5245689c0ddbf181042138d6feeba37070cd03b68149a246698e20a7a22c8f5ceba8e8e7a723457dab**

**SHA3\_512: 5bec97814d866548ca509cdd4c3021d6a340342fcd95e4b0086db03776587f12896b1eb6d2cb8d4ccee8883f133b106cdf1d81b1bade3e8d434ae46bee224609**

Graphical user interface

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Graphical user interface, application

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Did Crackstation work? **NO**

Password: **crackcode21**

Hash Output:

**MD5: 974ebbc7fbcb04d099fea499cc781532**

**SHA256: 3324fc0ff3d02f86858ab9ae92a26e7dd1de1cf8ca7c34ff47fc7da2f372a10e**

**SHA512: 7ff5d4e3a5c78396496acc98a0059b7e3ce8200d53aa7c3c661cda895fc5ba249ccc4da94bb6d9e35323f9fead275eae707d557754b9a37533465e18a186495e**

**blake2s: 470b1d49f5744d71ca888d43b7eb35b392074bf834a46d1f5f84879ca43139e8**

**SHA384: 853bb00664cff3db5e5242f58cc300ba5bddd774287f07e9843cd546384126df281e644401b1ac4b463f1b28a9449248**

**blake2b: 3719750b844244750087cbddce69cb9d6c61b22e3dfce7561899bc128faf2ab102ca85a8cbeb5a5c2d59fe910f7e551ced11cc24943ea0d93a09c90c3d73289e**

**SHA1: 3f7b7751b9321e4cfb9ecc9787c41a2c5dfdf9ef**

**SHA3\_224: 42cddfd1b12ccf68f2ffb1f877b2ac559a7307f4682f6c8b63b43271**

**SHA3\_384: 853bb00664cff3db5e5242f58cc300ba5bddd774287f07e9843cd546384126df281e644401b1ac4b463f1b28a9449248**

**SHA3\_512: abacceb2086aa3f2c66677b7fbbd60ee81ad3d11b3d1aa1dbe9e9b33114207b05f2db7255d5a496d0fb1475866a7f719e06179fe55137b9e2d5fac8100fe4e31**

**Graphical user interface, text, application

Description automatically generated**

Graphical user interface

Description automatically generated

Did Crackstation work? **NO**

Password: **PRAWuS@zlPri128LqiXL**

Hash Output:

**MD5: 3883527150753245950fd954bfd5dba9**

**SHA256: e98c01ccd6c3e338152f224d8a4091d7344d606354f340422984fa8a4ffde0c0**

**SHA512: 227ee16dc5b6bf3bee400831e93528b09ca08b61f21388f1a74c4e1ef4fabdce9b91c7149aa6bda336600bd7097e73e4286a1d8e5ddd45132dea7aa9c75539cb**

**blake2s: ef261ff1d4830182b5ffdb27adef2f5ecf4f11161f27f1353b6ac58ac7096c80**

**SHA384: 7c9fa5f2cdb5fd8ebe78f75b420af2cad805cf05a4bfd1e9956f49133e0df4a0bd74b38456bf3167c01a38b77ec588cd**

**blake2b: c467446068b61468ea12156df25c2b89cbb8ead8922d0ca45e2d4462f59cef92b055d33e452cb08c4ae8c7cfa5c90ff0d91add79154e0d393b7798800683c066**

**SHA1: 40d5c920f1dd535852f5aa34e5b7228e9d666678**

**SHA3\_224: 5a510f48b60a133174ed96f244c0a78312ece1d6ecacdf321e9c6393**

**SHA3\_384: 7c9fa5f2cdb5fd8ebe78f75b420af2cad805cf05a4bfd1e9956f49133e0df4a0bd74b38456bf3167c01a38b77ec588cd**

**SHA3\_512: 12a3b52e4f8ab055d70799671990800ef619ea8078df0b8967fc035dc5330486357ecc5cc051e75a442eaf90c86be272c06e065ddcb56266e9f5d460357cb9f6**

Graphical user interface, text

Description automatically generated

A picture containing graphical user interface

Description automatically generated

Did Crackstation work? **NO**

Password: **#i$2p#?dAR6?1ustUtur**

Hash Output:

**MD5: e89e1449ef91defcb8a4fc22b649d09c**

**SHA256: 77ab4d4c9ec4219059a916c6c0a9e1673c636d0271cd245efbc33b8a0cee8368**

**SHA512: 16576156f2920a303fe602503ac0daf1409d60f650d9ec8b8ae1ebce8b637587e0daf35fc3561c59230666d01b8895e29bbdd36fd7b53fe7c45d23c7da3daa7c**

**blake2s: 317ed5a7f9a96398631f1fdb1dfd4afe3a4292b3d8b59e7f8dfb1db5b5a26148**

**SHA384: 158905bdc9b51961b1391046efcb1ec6e79ed02be01867d72f0fdf967394c9b1dfd725d40ee3ad86574f39e72dbf4348**

**blake2b: 4c72012ef73a5e311224f4a3d16634748119cf5d38ffe40e7e8113978a50efd8466dd9a5c91c3b4f32ba61ad216af04d3acf73d719ba33796e883fcca0e7bcff**

**SHA1: 199726aeb345e38bc4a8391ec627322a0fa944ac**

**SHA3\_224: 64d97c4b9b08dfbc41a26eb5e4ec125784de5818519697594edffa60**

**SHA3\_384: 158905bdc9b51961b1391046efcb1ec6e79ed02be01867d72f0fdf967394c9b1dfd725d40ee3ad86574f39e72dbf4348**

**SHA3\_512: afffb809fd1f80a27e7a63645fb1b2244ffb1f3f7a56a194fca4aed12dc7b0dc2a022100f16e6e3d4e3562ffce719dba1c7a083cb21f64e3b9a8cfb382950afb**

**Text

Description automatically generated with medium confidence**

A picture containing graphical user interface

Description automatically generated

Did Crackstation work? **NO**

Password: **@I15musa?\_xosabr82=3**

Hash Output:

**MD5: 9823bf082361184486de29550f080a5d**

**SHA256: 5d8b117260ae482e42b509736905b6b5a4db7c19544eb9110ea15ce6b5035ffd**

**SHA512: e680846a142525de235327775000e285f62c52af609da904b5632e669e4b7b2b000ffea58b14c642e5430a5540fad6dd561814558b6bc0786c6d2c90634633b1**

**blake2s: 1e127ddada5848cbd07b285852a4e1a2824bd64682eca3dee59d032a8a016f68**

**SHA384: d99f4b1a40fadb0c400f381b73f3b381fb566f6d50fb9b80c0dee743d61affc0803f06ce9dedca7e9cb629f87b9c3281**

**blake2b: 80ecee53e787f278f0e1861fc990073f3407623c7434dec21d1b0466ae251d7e4bd0fcdf4a012dd845ab7f2b90ccf623f3b5fe497f6f8fb8790773c5960dadb0**

**SHA1: 1302c09fd5bf69b1957a4fc4df52e74a9d5639f8**

**SHA3\_224: 56bd1645b2f629e0990f15bb366be26175d9f2e45a57c4b84876393c**

**SHA3\_384: d99f4b1a40fadb0c400f381b73f3b381fb566f6d50fb9b80c0dee743d61affc0803f06ce9dedca7e9cb629f87b9c3281**

**SHA3\_512: d9a52cea761adb57c71b65754b7b8e482878c45746600b72560063beb5efa541256aee2d442fc2aae4eaba31e3e22257633d5c0cee9a561430cbf6d4e86475f1**

Graphical user interface, text

Description automatically generated

Graphical user interface, application

Description automatically generated

Did Crackstation work? **NO**

**Throughout this password cracking activity, I got to learn and experience a lot about different passwords that are inputted and then outputted as hash codes from the output. Overall, for my future passwords I will make sure I first use Norton password generator to make sure that no one can guess my password, such as any hacking system or any other major fraud systems out there. The easy passwords as I experienced from this password cracking activity is that its so easy to guess, and they always ended up in “exact matches” which can be easily hacked by anyone who would do this type of activity. Using strong, efficient, and very secretive passwords that contain pretty much everything would make it very hard to crack the password, and therefore lead to “Not found” matches to be occurring very often. So, longer passwords with different characters and numbers will work together to be the best password to be hard to crack. This activity has taught me to think very closely in making passwords in the future specifically.**