**PYTHON EXCERCISES (NOT GRADED)**

1. Write a function to reverse words of a given string.

For example, if input str = I like icecream

Then your function should generate output str = icecream like I

1. Write a Program to extract each digit from an integer in the reverse order.

For example, If the given integer is 1456, the output shall be “6 5 4 1“, with a space separating the digits.

1. Write a function to multiply two matrices and return the product matrix. If the matrices are not compatible, your function should generate an error message ‘matrices are not compatible’.
2. Create a CSV file using excel with 5 columns. Each column must have a header. Make sure the file has at least 5 entries. An example is shown below. You may choose the header names and entries arbitrarily.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| S. No. | Roll Number | Name | Score | Grade |
| 1 | E2021001 | Virat Kohli | 76 | B |
| 2 | E2021003 | Mohammed Shami | 82 | A |
| 3 | E2021002 | Sanju Samson | 65 | C |
| 4 | E2021005 | Ravindra Jadeja | 74 | B |
| 5 | E2021004 | Rohit Sharma | 68 | C |

Save the file in a folder. Write a python program to (a) open CSV file, (b) read its data, (c) update an entry, and then (d) save it in the folder as a ‘.csv’ file with original name (overwrite the existing file).

For example, if I need to update the score of 4th person from 74 to 80, the new csv file should look like,

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| S. No. | Roll Number | Name | Score | Grade |
| 1 | E2021001 | Virat Kohli | 76 | B |
| 2 | E2021003 | Mohammed Shami | 82 | A |
| 3 | E2021002 | Sanju Samson | 65 | C |
| 4 | E2021005 | Ravindra Jadeja | **80** | B |
| 5 | E2021004 | Rohit Sharma | 68 | C |

1. Create a program to read the same csv file as in Q4, sort it using a user-specified column (by Roll number or name or score, etc.) and then overwrite the existing csv file.
2. Create a program to plot the function y = sin^2(x) from 0 to 2\*pi. The plot must have x and y-axis labels, line thickness of 2, line color as red, and a plot title that says ‘y = sin^2(x)’. Explore how to set/modify different plot properties.
3. Create a program to get maximum, minimum and average value from the elements of a given matrix.

**WHERE TO FIND HELP?**

1. Many YouTube channels such as <https://www.youtube.com/watch?v=t8pPdKYpowI>
2. <https://www.w3schools.com/python/>
3. List of many resources here [**https://wiki.python.org/moin/BeginnersGuide/Programmers**](https://wiki.python.org/moin/BeginnersGuide/Programmers)