Name of the Course : GE Semester: II
Name of the Paper : Data Analysis and Visualization using Python

Maximum Marks: 20   Last Date of Submission : February 12, 2024

Assignment-1

Q1

    a) Import necessary library for numpy library
    b) Create a numpy array **players** to hold Skills of players of Mumbai Indians team(skills could be batsman, baller, keeper, keeper-bowler , etc)
    c) Find the dimension of the numpy array players
    d) Find the number of players who are batsman
    e) Fetch the skills of last players
    f) Fetch the skills of first 3 players

Q2
Marks of the students is stored as a regular Python list . The marks are out of 100. Make a numpy array out of it

    a) Find out the maximum, minimum and average marks obtained by the students
    b) Find out marks which are higher than 50
    c) Count number of students who get marks more than 70
    d) Find number of students who get less than 30 marks
    e) Give grace marks of 2 to all the students
    f) Find median marks and standard deviation
    g) Fetch the first element of the array
    h) Fetch the last 2 elements in the array
    i) Fetch the marks obtained by to 8th student in the list
    j) *Fetch* the last 5 elements from the marks array
    k) Create a new numpy array in the marks are scaled down out of 10 Use mathematical operation

Q3 Create an identity matrix of 5 x 5. Multiply all the elements out of 5

Q4 Write one line command to create the following array

  7 7 7 7

  7 7 7 7

Q5 Write statement to create the following matrix

  3 0 0

  0 3 0

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0 0   3

Q6 Create a numpy array to store first 20 integers. Convert the 1-D array to 4 x 5 array

Q7 create a 3d array of dimension 3 X 4 x2

Q8 Given the matrix

   10 20 30 40 50

   11 12 13   14 15

   21 22 23   24 25

   31 32 33   34   35

   41 42 43   44 45

Write commands to extract the sub matrix

a) $\begin{pmatrix} 13 & 14 & 15 \\ 23 & 24 & 25 \end{pmatrix}$

b)   (32 ,33, 34)

c) $\begin{pmatrix} 31 & 32 \\ 41 & 42 \end{pmatrix}$

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