MAHA BARATHI ENGINEERING COLLEGE

ASSIGNMENT-1 SOLUTION

NAME OF THE STUDENT:R.PRADEEP

REGISTER NUMBER:621419104025

YEAR/DEPARTMENT:IV-CSE

{

"nbformat": 4,

"nbformat\_minor": 0,

"metadata": {

"colab": {

"provenance": [],

"collapsed\_sections": []

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"display\_name": "Python 3"

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"language\_info": {

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"# Basic Python"

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"metadata": {

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"source": [

"## 1. Split this string"

],

"metadata": {

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"source": [

"s = \"Hi there Sam!\""

],

"metadata": {

"id": "s07c7JK7Oqt-"

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"execution\_count": 1,

"outputs": []

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"source": [

"txt = \"Hi there Sam!\"\n",

"\n",

"x = txt.split()\n",

"\n",

"print(x)"

],

"metadata": {

"id": "6mGVa3SQYLkb",

"colab": {

"base\_uri": "https://localhost:8080/"

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"outputId": "826edc4f-3e69-41e8-bffc-c94dbbf01d67"

},

"execution\_count": 2,

"outputs": [

{

"output\_type": "stream",

"name": "stdout",

"text": [

"['Hi', 'there', 'Sam!']\n"

]

}

]

},

{

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"source": [

"## 2. Use .format() to print the following string. \n",

"\n",

"### Output should be: The diameter of Earth is 12742 kilometers."

],

"metadata": {

"id": "GH1QBn8HP375"

}

},

{

"cell\_type": "code",

"source": [

"planet = \"Earth\"\n",

"diameter = 12742"

],

"metadata": {

"id": "\_ZHoml3kPqic"

},

"execution\_count": 3,

"outputs": []

},

{

"cell\_type": "code",

"source": [

"txt = \"The diameter of Earth {diameter:} is kilometers\"\n",

"print(txt.format(diameter = 12742))\n"

],

"metadata": {

"id": "HyRyJv6CYPb4",

"colab": {

"base\_uri": "https://localhost:8080/"

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},

"execution\_count": 7,

"outputs": [

{

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"name": "stdout",

"text": [

"The diameter of Earth 12742 is kilometers\n"

]

}

]

},

{

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"source": [

"## 3. In this nest dictionary grab the word \"hello\""

],

"metadata": {

"id": "KE74ZEwkRExZ"

}

},

{

"cell\_type": "code",

"source": [

"d = {'k1':[1,2,3,{'tricky':['oh','man','inception',{'target':[1,2,3,'hello']}]}]}"

],

"metadata": {

"id": "fcVwbCc1QrQI"

},

"execution\_count": 8,

"outputs": []

},

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"cell\_type": "code",

"source": [

"print(d)"

],

"metadata": {

"id": "MvbkMZpXYRaw",

"colab": {

"base\_uri": "https://localhost:8080/"

},

"outputId": "e6d7ee94-2ffb-4bd8-a5a7-005f5b117e7e"

},

"execution\_count": 15,

"outputs": [

{

"output\_type": "stream",

"name": "stdout",

"text": [

"{'k1': [1, 2, 3, {'tricky': ['oh', 'man', 'inception', {'target': [1, 2, 3, 'hello']}]}]}\n"

]

}

]

},

{

"cell\_type": "markdown",

"source": [

"# Numpy"

],

"metadata": {

"id": "bw0vVp-9ddjv"

}

},

{

"cell\_type": "code",

"source": [

"import numpy as np"

],

"metadata": {

"id": "LLiE\_TYrhA1O"

},

"execution\_count": 18,

"outputs": []

},

{

"cell\_type": "markdown",

"source": [

"## 4.1 Create an array of 10 zeros? \n",

"## 4.2 Create an array of 10 fives?"

],

"metadata": {

"id": "wOg8hinbgx30"

}

},

{

"cell\_type": "code",

"source": [

"array=np.zeros(10)\n",

"print(\"An array of 10 zeros:\")"

],

"metadata": {

"id": "NHrirmgCYXvU",

"colab": {

"base\_uri": "https://localhost:8080/"

},

"outputId": "82730e66-fb70-48b6-90d8-85a831736b5a"

},

"execution\_count": 19,

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{

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"name": "stdout",

"text": [

"An array of 10 zeros:\n"

]

}

]

},

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"source": [

"array=np.zeros(10)\n",

"print(\"An array of 5 fives:\")"

],

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"colab": {

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},

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{

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"name": "stdout",

"text": [

"An array of 5 fives:\n"

]

}

]

},

{

"cell\_type": "markdown",

"source": [

"## 5. Create an array of all the even integers from 20 to 35"

],

"metadata": {

"id": "gZHHDUBvrMX4"

}

},

{

"cell\_type": "code",

"source": [

"array=np.arange(20,35,2)\n",

"print(\"Array of all the even integers from 20 to 35\")\n",

"print(array)"

],

"metadata": {

"id": "oAI2tbU2Yag-",

"colab": {

"base\_uri": "https://localhost:8080/"

},

"outputId": "28ef5cb3-93cb-4ff8-a886-fbffc66193c3"

},

"execution\_count": 21,

"outputs": [

{

"output\_type": "stream",

"name": "stdout",

"text": [

"Array of all the even integers from 20 to 35\n",

"[20 22 24 26 28 30 32 34]\n"

]

}

]

},

{

"cell\_type": "markdown",

"source": [

"## 6. Create a 3x3 matrix with values ranging from 0 to 8"

],

"metadata": {

"id": "NaOM308NsRpZ"

}

},

{

"cell\_type": "code",

"source": [

"x = np.arange(0, 9).reshape(3,3)\n",

"print(x)"

],

"metadata": {

"id": "tOlEVH7BYceE",

"colab": {

"base\_uri": "https://localhost:8080/"

},

"outputId": "80cd8b42-95ea-4b83-ad7a-9453f0613c69"

},

"execution\_count": 22,

"outputs": [

{

"output\_type": "stream",

"name": "stdout",

"text": [

"[[0 1 2]\n",

" [3 4 5]\n",

" [6 7 8]]\n"

]

}

]

},

{

"cell\_type": "markdown",

"source": [

"## 7. Concatenate a and b \n",

"## a = np.array([1, 2, 3]), b = np.array([4, 5, 6])"

],

"metadata": {

"id": "hQ0dnhAQuU\_p"

}

},

{

"cell\_type": "code",

"source": [

"a = [1, 2,3]\n",

"b = [4,5,6]\n",

" \n",

"\n",

"for i in b :\n",

" a.append(i)\n",

" \n",

"\n",

"print (\"Concatenated list a and b is : \" \n",

" + str(a))"

],

"metadata": {

"id": "rAPSw97aYfE0",

"colab": {

"base\_uri": "https://localhost:8080/"

},

"outputId": "445a4c3e-58ac-4a80-852e-67e724926cad"

},

"execution\_count": 24,

"outputs": [

{

"output\_type": "stream",

"name": "stdout",

"text": [

"Concatenated list a and b is : [1, 2, 3, 4, 5, 6]\n"

]

}

]

},

{

"cell\_type": "markdown",

"source": [

"# Pandas"

],

"metadata": {

"id": "dlPEY9DRwZga"

}

},

{

"cell\_type": "markdown",

"source": [

"## 8. Create a dataframe with 3 rows and 2 columns"

],

"metadata": {

"id": "ijoYW51zwr87"

}

},

{

"cell\_type": "code",

"source": [

"import pandas as pd\n"

],

"metadata": {

"id": "T5OxJRZ8uvR7"

},

"execution\_count": 25,

"outputs": []

},

{

"cell\_type": "code",

"source": [

"\n",

" \n",

"\n",

"data = [['tom', 10], ['nick', 15], ['juli', 14]]\n",

" \n",

"\n",

"df = pd.DataFrame(data, columns=['Name', 'Age'])\n",

"\n",

"df"

],

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"colab": {

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"height": 143

},

"outputId": "2402a0ee-40d1-4e6a-dcd5-5cdea1985c78"

},

"execution\_count": 26,

"outputs": [

{

"output\_type": "execute\_result",

"data": {

"text/plain": [

" Name Age\n",

"0 tom 10\n",

"1 nick 15\n",

"2 juli 14"

],

"text/html": [

"\n",

" <div id=\"df-a344f79d-1761-4ba3-b335-c8666e11be17\">\n",

" <div class=\"colab-df-container\">\n",

" <div>\n",

"<style scoped>\n",

" .dataframe tbody tr th:only-of-type {\n",

" vertical-align: middle;\n",

" }\n",

"\n",

" .dataframe tbody tr th {\n",

" vertical-align: top;\n",

" }\n",

"\n",

" .dataframe thead th {\n",

" text-align: right;\n",

" }\n",

"</style>\n",

"<table border=\"1\" class=\"dataframe\">\n",

" <thead>\n",

" <tr style=\"text-align: right;\">\n",

" <th></th>\n",

" <th>Name</th>\n",

" <th>Age</th>\n",

" </tr>\n",

" </thead>\n",

" <tbody>\n",

" <tr>\n",

" <th>0</th>\n",

" <td>tom</td>\n",

" <td>10</td>\n",

" </tr>\n",

" <tr>\n",

" <th>1</th>\n",

" <td>nick</td>\n",

" <td>15</td>\n",

" </tr>\n",

" <tr>\n",

" <th>2</th>\n",

" <td>juli</td>\n",

" <td>14</td>\n",

" </tr>\n",

" </tbody>\n",

"</table>\n",

"</div>\n",

" <button class=\"colab-df-convert\" onclick=\"convertToInteractive('df-a344f79d-1761-4ba3-b335-c8666e11be17')\"\n",

" title=\"Convert this dataframe to an interactive table.\"\n",

" style=\"display:none;\">\n",

" \n",

" <svg xmlns=\"http://www.w3.org/2000/svg\" height=\"24px\"viewBox=\"0 0 24 24\"\n",

" width=\"24px\">\n",

" <path d=\"M0 0h24v24H0V0z\" fill=\"none\"/>\n",

" <path d=\"M18.56 5.44l.94 2.06.94-2.06 2.06-.94-2.06-.94-.94-2.06-.94 2.06-2.06.94zm-11 1L8.5 8.5l.94-2.06 2.06-.94-2.06-.94L8.5 2.5l-.94 2.06-2.06.94zm10 10l.94 2.06.94-2.06 2.06-.94-2.06-.94-.94-2.06-.94 2.06-2.06.94z\"/><path d=\"M17.41 7.96l-1.37-1.37c-.4-.4-.92-.59-1.43-.59-.52 0-1.04.2-1.43.59L10.3 9.45l-7.72 7.72c-.78.78-.78 2.05 0 2.83L4 21.41c.39.39.9.59 1.41.59.51 0 1.02-.2 1.41-.59l7.78-7.78 2.81-2.81c.8-.78.8-2.07 0-2.86zM5.41 20L4 18.59l7.72-7.72 1.47 1.35L5.41 20z\"/>\n",

" </svg>\n",

" </button>\n",

" \n",

" <style>\n",

" .colab-df-container {\n",

" display:flex;\n",

" flex-wrap:wrap;\n",

" gap: 12px;\n",

" }\n",

"\n",

" .colab-df-convert {\n",

" background-color: #E8F0FE;\n",

" border: none;\n",

" border-radius: 50%;\n",

" cursor: pointer;\n",

" display: none;\n",

" fill: #1967D2;\n",

" height: 32px;\n",

" padding: 0 0 0 0;\n",

" width: 32px;\n",

" }\n",

"\n",

" .colab-df-convert:hover {\n",

" background-color: #E2EBFA;\n",

" box-shadow: 0px 1px 2px rgba(60, 64, 67, 0.3), 0px 1px 3px 1px rgba(60, 64, 67, 0.15);\n",

" fill: #174EA6;\n",

" }\n",

"\n",

" [theme=dark] .colab-df-convert {\n",

" background-color: #3B4455;\n",

" fill: #D2E3FC;\n",

" }\n",

"\n",

" [theme=dark] .colab-df-convert:hover {\n",

" background-color: #434B5C;\n",

" box-shadow: 0px 1px 3px 1px rgba(0, 0, 0, 0.15);\n",

" filter: drop-shadow(0px 1px 2px rgba(0, 0, 0, 0.3));\n",

" fill: #FFFFFF;\n",

" }\n",

" </style>\n",

"\n",

" <script>\n",

" const buttonEl =\n",

" document.querySelector('#df-a344f79d-1761-4ba3-b335-c8666e11be17 button.colab-df-convert');\n",

" buttonEl.style.display =\n",

" google.colab.kernel.accessAllowed ? 'block' : 'none';\n",

"\n",

" async function convertToInteractive(key) {\n",

" const element = document.querySelector('#df-a344f79d-1761-4ba3-b335-c8666e11be17');\n",

" const dataTable =\n",

" await google.colab.kernel.invokeFunction('convertToInteractive',\n",

" [key], {});\n",

" if (!dataTable) return;\n",

"\n",

" const docLinkHtml = 'Like what you see? Visit the ' +\n",

" '<a target=\"\_blank\" href=https://colab.research.google.com/notebooks/data\_table.ipynb>data table notebook</a>'\n",

" + ' to learn more about interactive tables.';\n",

" element.innerHTML = '';\n",

" dataTable['output\_type'] = 'display\_data';\n",

" await google.colab.output.renderOutput(dataTable, element);\n",

" const docLink = document.createElement('div');\n",

" docLink.innerHTML = docLinkHtml;\n",

" element.appendChild(docLink);\n",

" }\n",

" </script>\n",

" </div>\n",

" </div>\n",

" "

]

},

"metadata": {},

"execution\_count": 26

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]

},

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"source": [

"\*italicized text\*## 9. Generate the series of dates from 1st Jan, 2023 to 10th Feb, 2023"

],

"metadata": {

"id": "UXSmdNclyJQD"

}

},

{

"cell\_type": "code",

"source": [

"import pandas as pd\n",

"\n",

"\n",

"dates = pd.date\_range('2023-01-01', periods=41, freq='D')\n",

"\n",

"s = pd.Series(dates)\n",

"print (s)"

],

"metadata": {

"id": "dgyC0JhVYl4F",

"colab": {

"base\_uri": "https://localhost:8080/"

},

"outputId": "f9c818dd-bcf2-480d-ab74-9fc46403210b"

},

"execution\_count": 29,

"outputs": [

{

"output\_type": "stream",

"name": "stdout",

"text": [

"0 2023-01-01\n",

"1 2023-01-02\n",

"2 2023-01-03\n",

"3 2023-01-04\n",

"4 2023-01-05\n",

"5 2023-01-06\n",

"6 2023-01-07\n",

"7 2023-01-08\n",

"8 2023-01-09\n",

"9 2023-01-10\n",

"10 2023-01-11\n",

"11 2023-01-12\n",

"12 2023-01-13\n",

"13 2023-01-14\n",

"14 2023-01-15\n",

"15 2023-01-16\n",

"16 2023-01-17\n",

"17 2023-01-18\n",

"18 2023-01-19\n",

"19 2023-01-20\n",

"20 2023-01-21\n",

"21 2023-01-22\n",

"22 2023-01-23\n",

"23 2023-01-24\n",

"24 2023-01-25\n",

"25 2023-01-26\n",

"26 2023-01-27\n",

"27 2023-01-28\n",

"28 2023-01-29\n",

"29 2023-01-30\n",

"30 2023-01-31\n",

"31 2023-02-01\n",

"32 2023-02-02\n",

"33 2023-02-03\n",

"34 2023-02-04\n",

"35 2023-02-05\n",

"36 2023-02-06\n",

"37 2023-02-07\n",

"38 2023-02-08\n",

"39 2023-02-09\n",

"40 2023-02-10\n",

"dtype: datetime64[ns]\n"

]

}

]

},

{

"cell\_type": "markdown",

"source": [

"## 10. Create 2D list to DataFrame\n",

"\n",

"lists = [[1, 'aaa', 22],\n",

" [2, 'bbb', 25],\n",

" [3, 'ccc', 24]]"

],

"metadata": {

"id": "ZizSetD-y5az"

}

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"cell\_type": "code",

"source": [

"lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]"

],

"metadata": {

"id": "\_XMC8aEt0llB"

},

"execution\_count": 33,

"outputs": []

},

{

"cell\_type": "code",

"source": [

"import pandas as pd \n",

" \n",

" \n",

"lst = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]\n",

" \n",

" \n",

" \n",

"df = pd.DataFrame(lst, columns =['NO', 'name','age']) \n",

"print(df)"

],

"metadata": {

"id": "knH76sDKYsVX",

"colab": {

"base\_uri": "https://localhost:8080/"

},

"outputId": "19affc1b-734e-4740-cb8a-40d4f6d423a5"

},

"execution\_count": 37,

"outputs": [

{

"output\_type": "stream",

"name": "stdout",

"text": [

" NO name age\n",

"0 1 aaa 22\n",

"1 2 bbb 25\n",

"2 3 ccc 24\n"

]

}

]

}

]

}