MAHENDRA ENGINEERING COLLEGE FOR WOMEN
ASSIGNMENT-1 SOLUTION
NAME OF THE STUDENT:P.AARTHI
REGISTER NUMBER:611419106001
YEAR/DEPARTMENT:IV-ECE


```
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  "nbformat_minor": 0,
  "metadata": {
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    "language_info": {
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    {
      "cell_type": "code",
      "source": [
        "s = \"Hi there Sam!\""
```

```
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      "\n",
      "x = txt.split()\n",
      "\n",
      "print(x)"
    ],
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          "['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": {
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    }
```

```
},
{
   "cell_type": "code",
   "source": [
      "planet = \"Earth\"\n",
      "diameter = 12742"
   ],
   "metadata": {
      "id": "_ZHoml3kPqic"
   },
   "execution_count": 3,
   "outputs": []
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{
   "cell_type": "code",
   "source": [
      "txt = \"The diameter of Earth {diameter:} is    kilometers\"\n",
      "print(txt.format(diameter = 12742))\n"
   ],
   "metadata": {
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      "text": [
         "The diameter of Earth 12742 is    kilometers\n"
      ]
   }
]
},
{
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      "## 3. In this nest dictionary grab the word \"hello\""
   ],
   "metadata": {
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```

```
    }
},
{
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    "source": [
        "d = {'k1':[1,2,3,{'tricky':['oh','man','inception',{'target':[1,2,3,'hello']}]}]}"
    ],
    "metadata": {
        "id": "fcVwbCc1QrQl"
    },
    "execution_count": 8,
    "outputs": []
},
{
    "cell_type": "code",
    "source": [
        "print(d)"
    ],
    "metadata": {
        "id": "MvbkMZpXYRaw",
        "colab": {
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        },
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    },
    "execution_count": 15,
    "outputs": [
        {
            "output_type": "stream",
            "name": "stdout",
            "text": [
                "{'k1': [1, 2, 3, {'tricky': ['oh', 'man', 'inception', {'target': [1, 2, 3, 'hello']}]}]}\n"
            ]
        }
    ]
},
{
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        "# Numpy"
    ],
    "metadata": {
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    }
```

```
},
{
   "cell_type": "code",
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      "import numpy as np"
   ],
   "metadata": {
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   },
   "execution_count": 18,
   "outputs": []
},
{
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      "## 4.1 Create an array of 10 zeros? \n",
      "## 4.2 Create an array of 10 fives?"
   ],
   "metadata": {
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   }
},
{
   "cell_type": "code",
   "source": [
      "array=np.zeros(10)\n",
      "print(\"An array of 10 zeros:\")"
   ],
   "metadata": {
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      "colab": {
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      },
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   },
   "execution_count": 19,
   "outputs": [
      {
         "output_type": "stream",
         "name": "stdout",
         "text": [
            "An array of 10 zeros:\n"
         ]
      }
```

```
    ]
},
{
    "cell_type": "code",
    "source": [
        "array=np.zeros(10)\n",
        "print(\"An array of 5 fives:\")"
    ],
    "metadata": {
        "id": "e4005lsTYXxx",
        "colab": {
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        "outputId": "3bf02af0-7bd0-4299-8d16-68347a566a1e"
},
"execution_count": 20,
"outputs": [
    {
        "output_type": "stream",
        "name": "stdout",
        "text": [
            "An array of 5 fives:\n"
            ]
        }
    ]
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{
    "cell_type": "markdown",
    "source": [
        "## 5. Create an array of all the even integers from 20 to 35"
    ],
    "metadata": {
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    }
},
{
"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"
      ]
    }
  ]
 },
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    "## 6. Create a 3x3 matrix with values ranging from 0 to 8"
  ],
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  }
 },
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    "x =    np.arange(0, 9).reshape(3,3)\n",
    "print(x)"
  ],
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    "colab": {
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    "outputId": "80cd8b42-95ea-4b83-ad7a-9453f0613c69"
  },
  "execution_count": 22,
  "outputs": [
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      "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": {
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    "colab": {
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    "outputId": "445a4c3e-58ac-4a80-852e-67e724926cad"
},
"execution_count": 24,
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```

```
            "text": [
                "Concatenated list a and b is : [1, 2, 3, 4, 5, 6]\n"
            ]
        }
    ]
},
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    "source": [
        "# Pandas"
    ],
    "metadata": {
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    }
},
{
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        "## 8. Create a dataframe with 3 rows and 2 columns"
    ],
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{
    "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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    "outputId": "2402a0ee-40d1-4e6a-dcd5-5cdea1985c78"
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"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",
        "  "
      ]
    },
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    "execution_count": 26
   }
  ]
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  "source": [
   "*italicized text*## 9. Generate the series of dates from 1st Jan, 2023 to 10th Feb, 2023"
  ],
  "metadata": {
   "id": "UXSmdNclyJQD"
  }
 },
 {
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```
"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": {
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    "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"
  }
 },
 {
  "cell_type": "code",
  "source": [
   "lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]"
  ],
  "metadata": {
```

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        "id": "_XMC8aEt0IlB"
      },
      "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"
          ]
        }
      ]
    }
```