```json
{
  "nbformat": 4,
  "nbformat_minor": 0,
  "metadata": {
    "colab": {
      "provenance": [],
      "collapsed_sections": []
    },
    "kernelspec": {
      "name": "python3",
      "display_name": "Python 3"
    },
    "language_info": {
      "name": "python"
    }
  },
  "cells": [
    {
      "cell_type": "code",
      "execution_count": 5,
      "metadata": {
        "id": "UMtOTylVLVpZ"
      },
      "outputs": [],
      "source": [
        "df= \"Hi Iam Thaneesh\""
      ]
    },
    {
      "cell_type": "code",
      "source": [
```

```json
      "df.split()"
    ],
    "metadata": {
     "colab": {
      "base_uri": "https://localhost:8080/"
     },
     "id": "9M_sFhIrLemk",
     "outputId": "b41b0ce5-c4f7-4612-9afd-bbfc2a44983a"
    },
    "execution_count": 6,
    "outputs": [
     {
      "output_type": "execute_result",
      "data": {
       "text/plain": [
        "['Hi', 'Iam', 'Thaneesh']"
       ]
      },
      "metadata": {},
      "execution_count": 6
     }
    ]
   },
   {
    "cell_type": "code",
    "source": [
     "planet = \"Mars\"\n",
     "diameter = 13743"
    ],
    "metadata": {
     "id": "wQRc7Yn4LjDD"
```

```json
  },
  "execution_count": 7,
  "outputs": []
},
{
  "cell_type": "code",
  "source": [
   "print('The diameter of {} is {} kilometer .'.format(planet,diameter));"
  ],
  "metadata": {
   "colab": {
    "base_uri": "https://localhost:8080/"
   },
   "id": "qggf0-TaLtcK",
   "outputId": "f65dc676-c8bb-4174-92ae-0e2c18bdb248"
  },
  "execution_count": 8,
  "outputs": [
   {
    "output_type": "stream",
    "name": "stdout",
    "text": [
     "The diameter of Mars is 13743 kilometer .\n"
    ]
   }
  ]
},
{
  "cell_type": "code",
  "source": [
   "d={'k1':[1,2,3,{'tricky':['oh','man','inception',{'target':[1,2,3,'hello']}]}]}"
```

    ],
    "metadata": {
      "id": "9pFZUMFBLxjf"
    },
    "execution_count": 9,
    "outputs": []
  },
  {
    "cell_type": "code",
    "source": [
      "d['k1'][3]['tricky'][3]['target'][3]"
    ],
    "metadata": {
      "colab": {
        "base_uri": "https://localhost:8080/",
        "height": 35
      },
      "id": "4gxNzDeuM5c-",
      "outputId": "8a8995af-4b76-4fa6-c736-fcd117df5119"
    },
    "execution_count": 11,
    "outputs": [
      {
        "output_type": "execute_result",
        "data": {
          "text/plain": [
            "'hello'"
          ],
          "application/vnd.google.colaboratory.intrinsic+json": {
            "type": "string"
          }

```json
    },
    "metadata": {},
    "execution_count": 11
   }
  ]
 },
 {
  "cell_type": "code",
  "source": [
   "import numpy as np"
  ],
  "metadata": {
   "id": "zWSmpJUENTGG"
  },
  "execution_count": 12,
  "outputs": []
 },
 {
  "cell_type": "code",
  "source": [
   "s = np.zeros(12)\n",
   "s"
  ],
  "metadata": {
   "colab": {
    "base_uri": "https://localhost:8080/"
   },
   "id": "TXk_bl5ONXoL",
   "outputId": "c2328e0f-2839-4c2a-974b-4614bdbbe75c"
  },
  "execution_count": 13,
```

```json
    "outputs": [
     {
      "output_type": "execute_result",
      "data": {
       "text/plain": [
        "array([0., 0., 0., 0., 0., 0., 0., 0., 0., 0., 0., 0.])"
       ]
      },
      "metadata": {},
      "execution_count": 13
     }
    ]
   },
   {
    "cell_type": "code",
    "source": [
     "v= np.ones(10)*6\n",
     "v"
    ],
    "metadata": {
     "colab": {
      "base_uri": "https://localhost:8080/"
     },
     "id": "dkKQ6k1DNkOt",
     "outputId": "db5dc650-19ac-43dd-c436-e7d6d3676616"
    },
    "execution_count": 15,
    "outputs": [
     {
      "output_type": "execute_result",
      "data": {
```

```json
      "text/plain": [
       "array([6., 6., 6., 6., 6., 6., 6., 6., 6., 6.])"
      ]
     },
     "metadata": {},
     "execution_count": 15
    }
   ]
  },
  {
   "cell_type": "code",
   "source": [
    "a = np.arange(20,35,2)\n",
    "a"
   ],
   "metadata": {
    "colab": {
     "base_uri": "https://localhost:8080/"
    },
    "id": "uK7ZS_GaNte5",
    "outputId": "2e7d0189-c95b-4530-b4f2-748b29cf8b9e"
   },
   "execution_count": 18,
   "outputs": [
    {
     "output_type": "execute_result",
     "data": {
      "text/plain": [
       "array([20, 22, 24, 26, 28, 30, 32, 34])"
      ]
     },
```

```json
      "metadata": {},
      "execution_count": 18
    }
  ]
},
{
  "cell_type": "code",
  "source": [
   "array = np.arange(0,9).reshape(3,3)\n",
   "array"
  ],
  "metadata": {
   "colab": {
    "base_uri": "https://localhost:8080/"
   },
   "id": "MHJX_hw1OB7U",
   "outputId": "84cb415a-f7ac-4aac-e13b-ba4186c917bb"
  },
  "execution_count": 19,
  "outputs": [
   {
    "output_type": "execute_result",
    "data": {
     "text/plain": [
      "array([[0, 1, 2],\n",
      "       [3, 4, 5],\n",
      "       [6, 7, 8]])"
     ]
    },
    "metadata": {},
    "execution_count": 19
```

```
      }
    ]
  },
  {
    "cell_type": "code",
    "source": [
      "a=np.array([1,2,3])\n",
      "b=np.array([4,5,6])\n",
      "np.concatenate((a,b),axis=0)"
    ],
    "metadata": {
      "colab": {
        "base_uri": "https://localhost:8080/"
      },
      "id": "vo0vPcVHONUJ",
      "outputId": "a57aa48e-7e5f-444a-eb21-781abe5979c6"
    },
    "execution_count": 20,
    "outputs": [
      {
        "output_type": "execute_result",
        "data": {
          "text/plain": [
            "array([1, 2, 3, 4, 5, 6])"
          ]
        },
        "metadata": {},
        "execution_count": 20
      }
    ]
  },
```

```json
{
  "cell_type": "code",
  "source": [
    "import pandas as pd"
  ],
  "metadata": {
    "id": "TMhwxb5MOT3T"
  },
  "execution_count": 21,
  "outputs": []
},
{
  "cell_type": "code",
  "source": [
    "d = {\"names\":[\"Thaneesh\",\"SEnbagaraman\",\"Parthiban\"],\"Age\":[21,21,21]}\n",
    "df = pd.DataFrame(d)\n",
    "df"
  ],
  "metadata": {
    "colab": {
      "base_uri": "https://localhost:8080/",
      "height": 143
    },
    "id": "PzWRzRuwOjKi",
    "outputId": "8e45be93-b015-4388-d4c0-45931cae3845"
  },
  "execution_count": 27,
  "outputs": [
    {
      "output_type": "execute_result",
      "data": {
```

"text/plain": [
"   names Age\n",
"0   Thaneesh   21\n",
"1 SEnbagaraman   21\n",
"2   Parthiban   21"
],
"text/html": [
"\n",
" <div id=\"df-46bbfa0a-1dfa-412d-9cf4-6a733ac9b77f\">\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>names</th>\n",
"   <th>Age</th>\n",
"   </tr>\n",

```
"    </thead>\n",
"    <tbody>\n",
"      <tr>\n",
"        <th>0</th>\n",
"        <td>Thaneesh</td>\n",
"        <td>21</td>\n",
"      </tr>\n",
"      <tr>\n",
"        <th>1</th>\n",
"        <td>SEnbagaraman</td>\n",
"        <td>21</td>\n",
"      </tr>\n",
"      <tr>\n",
"        <th>2</th>\n",
"        <td>Parthiban</td>\n",
"        <td>21</td>\n",
"      </tr>\n",
"    </tbody>\n",
"</table>\n",
"</div>\n",
"    <button class=\"colab-df-convert\" onclick=\"convertToInteractive('df-46bbfa0a-1dfa-412d-9cf4-6a733ac9b77f')\"\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-46bbfa0a-1dfa-412d-9cf4-6a733ac9b77f 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-46bbfa0a-1dfa-412d-9cf4-6a733ac9b77f');\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": 27
 }
]
},
{
 "cell_type": "code",
 "source": [
  "p =pd.date_range(start='1-2-2022',end='30-3-2022')\n",
  "for val in p:\n",
  "  print(val)\n"
 ],
 "metadata": {
  "colab": {
   "base_uri": "https://localhost:8080/"
  },
  "id": "3C3cKZl-PZAa",
  "outputId": "67589ed0-6025-4f40-d463-9a45507196f9"
 },
```

"execution_count": 28,

"outputs": [

 {

   "output_type": "stream",

   "name": "stdout",

   "text": [

     "2022-01-02 00:00:00\n",

     "2022-01-03 00:00:00\n",

     "2022-01-04 00:00:00\n",

     "2022-01-05 00:00:00\n",

     "2022-01-06 00:00:00\n",

     "2022-01-07 00:00:00\n",

     "2022-01-08 00:00:00\n",

     "2022-01-09 00:00:00\n",

     "2022-01-10 00:00:00\n",

     "2022-01-11 00:00:00\n",

     "2022-01-12 00:00:00\n",

     "2022-01-13 00:00:00\n",

     "2022-01-14 00:00:00\n",

     "2022-01-15 00:00:00\n",

     "2022-01-16 00:00:00\n",

     "2022-01-17 00:00:00\n",

     "2022-01-18 00:00:00\n",

     "2022-01-19 00:00:00\n",

     "2022-01-20 00:00:00\n",

     "2022-01-21 00:00:00\n",

     "2022-01-22 00:00:00\n",

     "2022-01-23 00:00:00\n",

     "2022-01-24 00:00:00\n",

     "2022-01-25 00:00:00\n",

     "2022-01-26 00:00:00\n",

"2022-01-27 00:00:00\n",

"2022-01-28 00:00:00\n",

"2022-01-29 00:00:00\n",

"2022-01-30 00:00:00\n",

"2022-01-31 00:00:00\n",

"2022-02-01 00:00:00\n",

"2022-02-02 00:00:00\n",

"2022-02-03 00:00:00\n",

"2022-02-04 00:00:00\n",

"2022-02-05 00:00:00\n",

"2022-02-06 00:00:00\n",

"2022-02-07 00:00:00\n",

"2022-02-08 00:00:00\n",

"2022-02-09 00:00:00\n",

"2022-02-10 00:00:00\n",

"2022-02-11 00:00:00\n",

"2022-02-12 00:00:00\n",

"2022-02-13 00:00:00\n",

"2022-02-14 00:00:00\n",

"2022-02-15 00:00:00\n",

"2022-02-16 00:00:00\n",

"2022-02-17 00:00:00\n",

"2022-02-18 00:00:00\n",

"2022-02-19 00:00:00\n",

"2022-02-20 00:00:00\n",

"2022-02-21 00:00:00\n",

"2022-02-22 00:00:00\n",

"2022-02-23 00:00:00\n",

"2022-02-24 00:00:00\n",

"2022-02-25 00:00:00\n",

"2022-02-26 00:00:00\n",

```
"2022-02-27 00:00:00\n",
"2022-02-28 00:00:00\n",
"2022-03-01 00:00:00\n",
"2022-03-02 00:00:00\n",
"2022-03-03 00:00:00\n",
"2022-03-04 00:00:00\n",
"2022-03-05 00:00:00\n",
"2022-03-06 00:00:00\n",
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"2022-03-08 00:00:00\n",
"2022-03-09 00:00:00\n",
"2022-03-10 00:00:00\n",
"2022-03-11 00:00:00\n",
"2022-03-12 00:00:00\n",
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"2022-03-14 00:00:00\n",
"2022-03-15 00:00:00\n",
"2022-03-16 00:00:00\n",
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"2022-03-18 00:00:00\n",
"2022-03-19 00:00:00\n",
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"2022-03-22 00:00:00\n",
"2022-03-23 00:00:00\n",
"2022-03-24 00:00:00\n",
"2022-03-25 00:00:00\n",
"2022-03-26 00:00:00\n",
"2022-03-27 00:00:00\n",
"2022-03-28 00:00:00\n",
"2022-03-29 00:00:00\n",
```

```
          "2022-03-30 00:00:00\n"
      ]
    }
  ]
},
{
  "cell_type": "code",
  "source": [
    "lists =[[1,'Stk',22],[2,'Sen',22],[3,'Par',22]]"
  ],
  "metadata": {
    "id": "uCZctC2EPZJa"
  },
  "execution_count": 32,
  "outputs": []
},
{
  "cell_type": "code",
  "source": [
    "df = pd.DataFrame(lists)\n",
    "df"
  ],
  "metadata": {
    "colab": {
      "base_uri": "https://localhost:8080/",
      "height": 143
    },
    "id": "bBm86o9hQaxd",
    "outputId": "48a8cc08-c38d-4d77-c869-3859846bb77c"
  },
  "execution_count": 31,
```

```
"outputs": [
 {
  "output_type": "execute_result",
  "data": {
   "text/plain": [
    "   0   1  2\n",
    "0  1 stk  22\n",
    "1  2 sen  22\n",
    "2  3 par  22"
   ],
   "text/html": [
    "\n",
    "  <div id=\"df-93dedfce-504d-4176-82a6-f15a6dc0e329\">\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>0</th>\n",
"      <th>1</th>\n",
"      <th>2</th>\n",
"    </tr>\n",
"  </thead>\n",
"  <tbody>\n",
"    <tr>\n",
"      <th>0</th>\n",
"      <td>1</td>\n",
"      <td>stk</td>\n",
"      <td>22</td>\n",
"    </tr>\n",
"    <tr>\n",
"      <th>1</th>\n",
"      <td>2</td>\n",
"      <td>sen</td>\n",
"      <td>22</td>\n",
"    </tr>\n",
"    <tr>\n",
"      <th>2</th>\n",
"      <td>3</td>\n",
"      <td>par</td>\n",
"      <td>22</td>\n",
"    </tr>\n",
"  </tbody>\n",
"</table>\n",
"</div>\n",
"      <button class=\"colab-df-convert\" onclick=\"convertToInteractive('df-93dedfce-504d-4176-82a6-f15a6dc0e329')\"\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-93dedfce-504d-4176-82a6-f15a6dc0e329 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-93dedfce-504d-4176-82a6-
f15a6dc0e329');\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": 31
  }
 ]
 }
]
}
```