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"nbformat_minor": 0,
"metadata": {
 "colab": {
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 "kernelspec": {
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  "display_name": "Python 3"
 },
 "language_info": {
  "name": "python"
 }
},
"cells": [
  "cell_type": "markdown",
  "source": [
   "# 1. Split this string"
  ],
  "metadata": {
    "id": "TAvbq87dneJ1"
  }
 },
  "cell_type": "code",
  "source": [
    "s = \"Hi there Sam!\""
  ],
  "metadata": {
   "id": "0DI3jIEwoM-N"
  "execution_count": null,
  "outputs": []
 },
  "cell_type": "code",
  "source": [
    "s.split()"
  "metadata": {
    "colab": {
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   "id": "I9ewcw_AoUYL",
    "outputId": "4a7bf440-6f87-4cc8-f152-97073d7aa888"
  "execution_count": null,
  "outputs": [
     "output_type": "execute_result",
     "data": {
      "text/plain": [
       "['Hi', 'there', 'Sam!']"
      ]
```

```
},
    "metadata": {},
    "execution_count": 6
  }
 ]
},
 "cell_type": "markdown",
 "source": [
  "# 2. Use .format() to print the following string\n",
  "## The output should be: The diameter of Earth is 12742 kilometers"
 ],
 "metadata": {
  "id": "bJE6gW3ApAzi"
},
 "cell_type": "code",
 "source": [
  "planet = \"Earth\"\n",
  "diameter = 12742"
 ],
 "metadata": {
  "id": "2to42RZariXc"
 "execution_count": 5,
 "outputs": []
},
 "cell_type": "code",
 "source": [
  "word = \"The diameter of {} is {} kilometers\"\n",
  "print(word.format(planet,diameter))"
 ],
 "metadata": {
   "colab": {
    "base_uri": "https://localhost:8080/"
  "id": "RhzZblBdrs9D",
  "outputId": "69b22637-591a-419e-a900-8952cfaa789d"
 "execution_count": 6,
 "outputs": [
    "output_type": "stream",
    "name": "stdout",
    "text": [
     "The diameter of Earth is 12742 kilometers\n"
  }
 ]
},
 "cell_type": "markdown",
 "source": [
  "# 3. In this nest dictionary grab the word \"hello\""
```

```
"metadata": {
  "id": "MzYcu_SBvXiG"
 }
},
 "cell_type": "code",
 "source": [
  "d = {'k1':[1,2,3,{'tricky':['oh','man','inception',{'target':[1,2,3,'hello']}]}}"
 "metadata": {
  "id": "TU6A6BImvxmv"
 "execution_count": null,
 "outputs": []
},
 "cell_type": "code",
 "source": [
  "print(d['k1'][3]['tricky'][3]['target'][3])"
 ],
 "metadata": {
   "colab": {
    "base_uri": "https://localhost:8080/"
  "id": "LE1tHcyywJvi",
  "outputId": "88bbaba0-a873-4e81-9840-4f326bb538f3"
 "execution_count": null,
 "outputs": [
    "output_type": "stream",
    "name": "stdout",
    "text": [
     "hello\n"
 "cell_type": "markdown",
 "source": [
  "# Numpy"
 "metadata": {
  "id": "_GiyaJQTA3UT"
},
 "cell_type": "code",
 "source": [
  "import numpy as np"
 "metadata": {
  "id": "KqhWyLUrA7p2"
 "execution_count": null,
```

```
"outputs": []
},
 "cell_type": "markdown",
 "source": [
  "# 4.1 Create an array of 10 zeros"
 ],
 "metadata": {
  "id": "IVtSo6mmBA_d"
},
 "cell_type": "code",
 "source": [
  "np.zeros(10)"
 "metadata": {
  "colab": {
   "base_uri": "https://localhost:8080/"
  "id": "YDKXkQC1BL_b",
  "outputId": "b889a83e-6695-40b4-a138-0d38c783a28a"
 "execution_count": null,
 "outputs": [
    "output_type": "execute_result",
    "data": {
     "text/plain": [
      "array([0., 0., 0., 0., 0., 0., 0., 0., 0.])"
   },
    "metadata": {},
    "execution_count": 50
 ]
},
 "cell_type": "markdown",
 "source": [
  "# 4.2 Create an array of 10 fives"
 "metadata": {
   "id": "DOx2NdsjCCLt"
},
 "cell_type": "code",
 "source": [
  "np.ones(10)*5"
 ],
 "metadata": {
   "colab": {
    "base_uri": "https://localhost:8080/"
  "id": "2MYP_0CmCI_b",
  "outputId": "aa6816aa-2113-4e45-8ebe-b9ab13416345"
```

```
},
 "execution_count": null,
 "outputs": [
    "output_type": "execute_result",
    "data": {
     "text/plain": [
      "array([5., 5., 5., 5., 5., 5., 5., 5., 5., 5.])"
     ]
    },
    "metadata": {},
    "execution count": 49
 ]
},
 "cell_type": "markdown",
 "source": [
  "# 5. Create an array of all the even integers from 20 to 35"
 "metadata": {
  "id": "-Pd9KXv1CZdj"
 }
},
 "cell_type": "code",
 "source": [
  "np.arange(20,36,2)"
 "metadata": {
  "colab": {
    "base_uri": "https://localhost:8080/"
  "id": "6FR9XaKECk5w",
  "outputId": "3d470bd2-a0c7-46a2-a3dc-d7d880a8f65e"
 },
 "execution_count": null,
 "outputs": [
    "output_type": "execute_result",
    "data": {
     "text/plain": [
      "array([20, 22, 24, 26, 28, 30, 32, 34])"
     ]
    },
    "metadata": {},
    "execution_count": 48
 ]
},
 "cell_type": "markdown",
 "source": [
  "# 6. Create a 3x3 matrix with values ranging from 0 to 8"
 "metadata": {
  "id": "7w-oaE4dDe0y"
```

```
}
},
 "cell_type": "code",
 "source": [
  "np.arange(0,9).reshape(3,3)"
 ],
 "metadata": {
   "colab": {
    "base_uri": "https://localhost:8080/"
  "id": "PuhLw4qJDrzA",
  "outputId": "6862d85e-eb39-400e-e250-15d251f93f6f"
 "execution_count": null,
 "outputs": [
  {
    "output_type": "execute_result",
    "data": {
     "text/plain": [
      "array([[0, 1, 2],\n",
            [3, 4, 5],\n",
            [6, 7, 8]])"
    "metadata": {},
    "execution count": 52
 ]
},
 "cell_type": "markdown",
 "source": [
  "# 7. Concatenate a and b\n",
  "# a = np.array([1, 2, 3]), b = np.array([4, 5, 6])"
 ],
 "metadata": {
  "id": "q7TqfbzkE8a6"
 }
},
 "cell_type": "code",
 "source": [
  a = np.array([1,2,3])\n",
  "b = np.array([4,5,6])\n",
  "np.concatenate((a,b),axis = None)"
 "metadata": {
   "colab": {
    "base_uri": "https://localhost:8080/"
  "id": "qIS4o4tmFFL1",
  "outputId": "08dd42b6-9c07-4c66-c14d-5f0576414553"
 "execution_count": null,
 "outputs": [
```

```
"output_type": "execute_result",
    "data": {
     "text/plain": [
      "array([1, 2, 3, 4, 5, 6])"
     ]
   },
    "metadata": {},
    "execution_count": 51
 ]
},
 "cell_type": "markdown",
 "source": [
  "# Pandas"
 "metadata": {
  "id": "6_yZdQgaHoZy"
},
 "cell_type": "markdown",
 "source": [
  "# 8. Create a dataframe with 3 rows and 2 columns"
 "metadata": {
  "id": "uWvm H-PI1O6"
 }
},
 "cell_type": "code",
 "source": [
  "import pandas as pd"
 "metadata": {
  "id": "LFLsNFbzl822"
 "execution_count": 2,
 "outputs": []
},
 "cell_type": "code",
 "source": [
  "d = {\Name\:[\Sam\,\"Krishna\,\"Brahim\],\"GraduationYear\":[2023,2023,2023]}\n",
  "print(pd.DataFrame(d))"
 ],
 "metadata": {
  "colab": {
    "base_uri": "https://localhost:8080/"
  "id": "fqyoKDvvJyCM",
  "outputId": "d0bc0737-d777-4cdf-b197-95f70d5ecc77"
 "execution_count": 3,
 "outputs": [
    "output_type": "stream",
```

```
"name": "stdout",
   "text": [
         Name GraduationYear\n",
     "0
           Sam
                      2023\n",
     "1 Krishna
                       2023\n".
     "2 Ibrahim
                       2023\n"
  }
 ]
},
 "cell_type": "markdown",
 "source": [
  "# 9. Generate the series of dates from 1st Jan, 2023 to 10th Feb, 2023"
 1,
 "metadata": {
  "id": "Qqh8tQrvLe-8"
 }
},
 "cell_type": "code",
 "source": [
  "date = pd.date_range(start = \"1-1-2023\", end=\"2-10-2023\")\n",
  "for val in date:\n",
  " print(val)"
 ],
 "metadata": {
  "colab": {
   "base_uri": "https://localhost:8080/"
  },
  "id": "HhhBGmdLLpi7",
  "outputId": "634e869d-dfcf-49c0-b395-3d383102a61f"
 },
 "execution_count": null,
 "outputs": [
    "output_type": "stream",
   "name": "stdout",
    "text": [
     "2023-01-01 00:00:00\n",
     "2023-01-02 00:00:00\n",
     "2023-01-03 00:00:00\n",
     "2023-01-04 00:00:00\n",
     "2023-01-05 00:00:00\n",
     "2023-01-06 00:00:00\n",
     "2023-01-07 00:00:00\n",
     "2023-01-08 00:00:00\n",
     "2023-01-09 00:00:00\n",
     "2023-01-10 00:00:00\n",
     "2023-01-11 00:00:00\n",
     "2023-01-12 00:00:00\n",
     "2023-01-13 00:00:00\n".
     "2023-01-14 00:00:00\n",
     "2023-01-15 00:00:00\n",
     "2023-01-16 00:00:00\n",
     "2023-01-17 00:00:00\n",
     "2023-01-18 00:00:00\n",
```

```
"2023-01-19 00:00:00\n",
     "2023-01-20 00:00:00\n",
     "2023-01-21 00:00:00\n",
     "2023-01-22 00:00:00\n",
     "2023-01-23 00:00:00\n",
     "2023-01-24 00:00:00\n",
     "2023-01-25 00:00:00\n",
     "2023-01-26 00:00:00\n",
     "2023-01-27 00:00:00\n",
     "2023-01-28 00:00:00\n",
     "2023-01-29 00:00:00\n".
     "2023-01-30 00:00:00\n",
     "2023-01-31 00:00:00\n",
     "2023-02-01 00:00:00\n",
     "2023-02-02 00:00:00\n",
     "2023-02-03 00:00:00\n",
     "2023-02-04 00:00:00\n",
     "2023-02-05 00:00:00\n",
     "2023-02-06 00:00:00\n",
     "2023-02-07 00:00:00\n",
     "2023-02-08 00:00:00\n",
     "2023-02-09 00:00:00\n",
     "2023-02-10 00:00:00\n"
   ]
  }
 ]
},
 "cell_type": "markdown",
 "source": [
  "# 10. Create 2D list to DataFrame\n",
  "lists = [[1, 'aaa', 22],\n",
         [2, 'bbb', 25],\n",
         [3, 'ccc', 24]]"
 "metadata": {
  "id": "yUh4MGepNncY"
 }
},
 "cell_type": "code",
 "source": [
  "lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]"
 "metadata": {
  "id": "JI3fVM-ZN2Su"
 "execution_count": null,
 "outputs": []
},
 "cell_type": "code",
 "source": [
  "print(pd.DataFrame(lists))"
 "metadata": {
  "colab": {
```