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```

```
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  "## 1. Split this string"
],
"metadata": {
  "id": "CU48hgo4Owz5"
}
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{
  "cell_type": "code",
  "source": [
    "s = \"Hi there Sam!\""
  ],
  "metadata": {
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  },
  "execution_count": null,
  "outputs": []
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{
  "cell_type": "code",
  "source": [
    "s=\"Hi there Sam!\"",
    "s=s.split()\\n",
    "print(s);"
  ],
  "metadata": {
```

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"colab": {

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"outputId": "f4c6110c-735d-4312-ccad-cf0138b88ea8"

},

"execution_count": 1,

"outputs": [

  {

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    "name": "stdout",

    "text": [

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

    ]

  }

],

{

  "cell_type": "markdown",

  "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": null,
  "outputs": []
},
{
  "cell_type": "code",
  "source": [
    "planet = \"Earth\\n\"",
    "diameter = 12742\\n",
    "planet = \"Earth\\n\"",
    "diameter = 12742\\n",
    "print( 'The diameter of {} is {} kilometers.' .format(planet,diameter));"
  ],
  "metadata": {
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    "colab": {
      "base_uri": "https://localhost:8080/"
    }
  },

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"outputId": "0aeea619-f265-4ac7-b78d-9250187c89de"
},
"execution_count": 2,
"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": "KE74ZEwkRExZ"
  }
},
{
  "cell_type": "code",
  "source": [
    "d = {'k1':[1,2,3,{'tricky':['oh','man','inception',{'target':[1,2,3,'hello']}]]}"
  ],

```

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"metadata": {
  "id": "fcVwbCc1QrQI"
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"execution_count": null,
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{
  "cell_type": "code",
  "source": [
    "lst = [1,2,[3,4],[5,[100,200,['hello']],23,11],1,7]\n",
    "lst = [1,2,[3,4],[5,[100,200,['hello']],23,11],1,7]\n",
    "a=lst[3][1][2];\n",
    "print(a)"
  ],
  "metadata": {
    "id": "MvbkMZpXYRaw",
    "colab": {
      "base_uri": "https://localhost:8080/"
    },
    "outputId": "5a119a1f-aa66-4538-c6be-6d972f008faa"
  },
  "execution_count": 3,
  "outputs": [
    {
      "output_type": "stream",
      "name": "stdout",
      "text": [
```

```
        "['hello']\n"
    ]
}
]
},
{
    "cell_type": "markdown",
    "source": [
        "# Numpy"
    ],
    "metadata": {
        "id": "bw0vVp-9ddjv"
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{
    "cell_type": "code",
    "source": [
        "import numpy as np"
    ],
    "metadata": {
        "id": "LLiE_TYrhA1O"
    },
    "execution_count": null,
    "outputs": []
},
{
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  "## 4.1 Create an array of 10 zeros? \n",
  "## 4.2 Create an array of 10 fives?"
],
"metadata": {
  "id": "wOg8hinbgx30"
}
},
{
  "cell_type": "code",
  "source": [
    "import numpy as np\n",
    "array=np.zeros(10)\n",
    "print(\"An array of 10 zeros:\")\n",
    "print(array)\n",
    "array=np.ones(10)*5\n",
    "print(\"An array of 10 fives:\")\n",
    "print(array)"
  ],
  "metadata": {
    "id": "NHrirmgCYXvU",
    "colab": {
      "base_uri": "https://localhost:8080/"
    }
  },
  "outputId": "6e312b74-4962-407b-9560-776f27c85aca"
},
"execution_count": 4,
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```
"outputs": [  
  {  
    "output_type": "stream",  
    "name": "stdout",  
    "text": [  
      "An array of 10 zeros:\n",  
      "[0. 0. 0. 0. 0. 0. 0. 0. 0. 0.]\n",  
      "An array of 10 fives:\n",  
      "[5. 5. 5. 5. 5. 5. 5. 5. 5. 5.]\n"  
    ]  
  }  
],  
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  "source": [],  
  "metadata": {  
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  "execution_count": null,  
  "outputs": []  
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{  
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  "source": [  
    "## 5. Create an array of all the even integers from 20 to 35"  
  ],
```

```
"metadata": {
  "id": "gZHHdUBvrMX4"
}
},
{
  "cell_type": "code",
  "source": [
    "import numpy as np\n",
    "array=np.arange(20,36,2)\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": "b8f00c5d-6658-46aa-96e2-6fd97ed8bf7b"
  },
  "execution_count": 5,
  "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": [
    "import numpy as np\n",
    "x = np.arange(0, 9).reshape(3,3)\n",
    "print(x)"
  ],
  "metadata": {
    "id": "tOIEVH7BYceE",
    "colab": {
      "base_uri": "https://localhost:8080/"
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  "outputId": "e12038d3-28e1-4376-cfaa-b4610ec5b198"
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```

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"execution_count": 6,
"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": [
    "import numpy as np\n",
```

```
" \n",

"a = np.array([1, 2, 3])\n",

"print(a)\n",

" \n",

"b = np.array([4, 5, 6])\n",

"print(b)\n",

" \n",

"print('\\n---Result of a and b---')\n",

"print(np.concatenate((a, b)))"

],

"metadata": {

  "id": "rAPSw97aYfE0",

  "colab": {

    "base_uri": "https://localhost:8080/"

  },

  "outputId": "38532143-9c53-4fa8-9d27-cb868d28bd26"

},

"execution_count": 7,

"outputs": [

  {

    "output_type": "stream",

    "name": "stdout",

    "text": [

      "[1 2 3]\n",

      "[4 5 6]\n",

      "\n",

      "---Result of a and b---\n",
```

```
        "[1 2 3 4 5 6]\n"
    ]
}
]
},
{
    "cell_type": "markdown",
    "source": [
        "# Pandas"
    ],
    "metadata": {
        "id": "dIPEY9DRwZga"
    }
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    "source": [
        "## 8. Create a dataframe with 3 rows and 2 columns"
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    "metadata": {
        "id": "ijoYW51zwr87"
    }
},
{
    "cell_type": "code",
    "source": [
        "import pandas as pd\n"
```

```
],  
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  },  
  "execution_count": null,  
  "outputs": []  
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{  
  "cell_type": "code",  
  "source": [  
    "import numpy as np\n",  
    "a=np.array([1,2,3])\n",  
    "b=np.array([4,5,6])\n",  
    "np.concatenate((a,b),axis=0)"  
  ],  
  "metadata": {  
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    "colab": {  
      "base_uri": "https://localhost:8080/"  
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    "outputId": "9e5f2ed1-22db-415c-ae6-aa0ab602fc63"  
  },  
  "execution_count": 8,  
  "outputs": [  
    {  
      "output_type": "execute_result",  
      "data": {
```

```
"text/plain": [  
  "array([1, 2, 3, 4, 5, 6])"  
]  
,  
"metadata": {},  
"execution_count": 8  
}  
]  
,  
{  
  "cell_type": "markdown",  
  "source": [  
    "## 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",  
    "pd.date_range(start='01/01/2023',end='02/10/2023')"  
  ],  
  "metadata": {  
    "id": "dgyCOJhVYl4F",  
    "colab": {
```



```

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  "outputId": "04366456-b497-45e1-cb04-d8af06b661d5"
},
"execution_count": 9,
"outputs": [
  {
    "output_type": "execute_result",
    "data": {
      "text/plain": [
        "DatetimeIndex(['2023-01-01', '2023-01-02', '2023-01-03', '2023-01-04',\n",
        "                '2023-01-05', '2023-01-06', '2023-01-07', '2023-01-08',\n",
        "                '2023-01-09', '2023-01-10', '2023-01-11', '2023-01-12',\n",
        "                '2023-01-13', '2023-01-14', '2023-01-15', '2023-01-16',\n",
        "                '2023-01-17', '2023-01-18', '2023-01-19', '2023-01-20',\n",
        "                '2023-01-21', '2023-01-22', '2023-01-23', '2023-01-24',\n",
        "                '2023-01-25', '2023-01-26', '2023-01-27', '2023-01-28',\n",
        "                '2023-01-29', '2023-01-30', '2023-01-31', '2023-02-01',\n",
        "                '2023-02-02', '2023-02-03', '2023-02-04', '2023-02-05',\n",
        "                '2023-02-06', '2023-02-07', '2023-02-08', '2023-02-09',\n",
        "                '2023-02-10'],\n",
        "                dtype='datetime64[ns]', freq='D')]"
      ]
    },
    "execution_count": 9
  }
]

```

```

]
},
{
  "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": {
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  },
  "execution_count": null,
  "outputs": []
},
{

```

```
"cell_type": "code",
"source": [
    "import pandas as pd\n",
    "lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]"
],
"metadata": {
    "id": "knH76sDKYsVX"
},
"execution_count": 10,
"outputs": []
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]
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