

```
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  "nbformat_minor": 0,
  "metadata": {
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    "kernelspec": {
      "name": "python3",
      "display_name": "Python 3"
    },
    "language_info": {
      "name": "python"
    }
  },
  "cells": [
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      "source": [
        "# Basic Python"
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      "metadata": {
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      }
    }
  ]
}
```

```
},  
  
{  
  "cell_type": "markdown",  
  "source": [  
    "## 1. Split this string"  
  ],  
  "metadata": {  
    "id": "CU48hgo4Owz5"  
  }  
},  
  
{  
  "cell_type": "code",  
  "source": [  
    "s = \"Hi there Sam!\""  
  ],  
  "metadata": {  
    "id": "s07c7JK7Oqt-"  
  },  
  "execution_count": 1,  
  "outputs": []  
},  
  
{  
  "cell_type": "code",  
  "source": [  
    "x=s.split()\\n",
```

```
"print(x)"
],
"metadata": {
  "id": "6mGVa3SQYLkb",
  "outputId": "a647f9ab-ccf4-4098-93da-5da57aef359c",
  "colab": {
    "base_uri": "https://localhost:8080/"
  }
},
"execution_count": 2,
"outputs": [
  {
    "output_type": "stream",
    "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": 3,

"outputs": []

},

{

"cell\_type": "code",

"source": [

"txt=\\\"The diameter of {} is {} kilometer.\\\".format(planet,diameter)\\n\",

"print(txt)"

],

"metadata": {

```
"id": "HyRyJv6CYPb4",
"outputId": "283ba490-0d6d-4188-e441-587889a9f2ff",
"colab": {
  "base_uri": "https://localhost:8080/"
},
"execution_count": 4,
"outputs": [
  {
    "output_type": "stream",
    "name": "stdout",
    "text": [
      "The diameter of Earth is 12742 kilometer.\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']}]}]}"
  ],
  "metadata": {
    "id": "fcVwbCc1QrQl"
  },
  "execution_count": 5,
  "outputs": []
},
{
  "cell_type": "code",
  "source": [
    "d['k1'][3]['tricky'][3]['target'][3]"
  ],
  "metadata": {
    "id": "MvbkMZpXYRaw",
    "outputId": "edb50186-16ab-4f57-910e-105681f49efa",
    "colab": {
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      "height": 36
    }
  },
}
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```
"execution_count": 6,
"outputs": [
  {
    "output_type": "execute_result",
    "data": {
      "text/plain": [
        "'hello'"
      ],
      "application/vnd.google.colaboratory.intrinsic+json": {
        "type": "string"
      }
    },
    "metadata": {},
    "execution_count": 6
  }
],
{
  "cell_type": "markdown",
  "source": [
    "# Numpy"
  ],
  "metadata": {
    "id": "bw0vVp-9ddjv"
  }
}
```

```
},  
  
{  
  "cell_type": "code",  
  "source": [  
    "import numpy as np"  
  ],  
  "metadata": {  
    "id": "LLiE_TYrhA1O"  
  },  
  "execution_count": 7,  
  "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:\")\n",  
"print(array)"  
],  
"metadata": {  
  "id": "NHirmgCYXvU",  
  "outputId": "ab8fedfd-9a37-4e2a-e985-f55a4f4b86a4",  
  "colab": {  
    "base_uri": "https://localhost:8080/"  
  }  
},  
"execution_count": 8,  
"outputs": [  
  {  
    "output_type": "stream",  
    "name": "stdout",  
    "text": [  
      "An array of 10 zeros:\n",  
      "[0. 0. 0. 0. 0. 0. 0. 0. 0.]\n"  
    ]  
  }  
]  
},  
{  
  "cell_type": "code",
```

```
"source": [  
  "array=np.ones(10)*5\\n",  
  "print(\"An array of 10 fives:\\n\")\\n",  
  "print(array)"  
],  
"metadata": {  
  "id": "e4005lsTYXxx",  
  "outputId": "bb0cc07d-f1b7-4682-c4f7-c067b8fcc2e0",  
  "colab": {  
    "base_uri": "https://localhost:8080/"  
  }  
},  
"execution_count": 9,  
"outputs": [  
  {  
    "output_type": "stream",  
    "name": "stdout",  
    "text": [  
      "An array of 10 fives:\\n",  
      "[5. 5. 5. 5. 5. 5. 5. 5. 5.]\\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": "oAl2tbU2Yag-",
    "outputId": "74d46e4b-60fb-42ab-cc98-dd9e8ae7e8df",
    "colab": {
      "base_uri": "https://localhost:8080/"
    }
  },
  "execution_count": 10,
  "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": "tOIEVH7BYceE",
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"colab": {
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"execution_count": 11,
"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=np.array([1,2,3])\n",
    "b=np.array([4,5,6])\n",
    "x=np.concatenate((a,b),axis=0)\n",
    "print(x)"
  ],
  "metadata": {
    "id": "rAPSw97aYfE0",
    "outputId": "0ba6fcb7-bfc2-4b17-f4bf-655a2a693ffa",
    "colab": {
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    }
  },
  "execution_count": 12,
  "outputs": [
    {
      "output_type": "stream",
      "name": "stdout",
      "text": [
```

```
        "[1 2 3 4 5 6]\n"
    ]
}
]
},
{
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    "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": 13,  
"outputs": []  
},  
{  
  "cell_type": "code",  
  "source": [  
    "data=[{'a':13,'b':22},{'a':64,'b':15},{'a':44,'b':47}]\n",  
    "df=pd.DataFrame(data)\n",  
    "print (df)"  
  ],  
  "metadata": {  
    "id": "xNpl_XXoYhs0",  
    "outputId": "707f5961-986c-4832-9c38-60a27ec21da7",  
    "colab": {  
      "base_uri": "https://localhost:8080/"  
    }  
  },  
  "execution_count": 22,  
  "outputs": [  

```



```

{
  "output_type": "stream",
  "name": "stdout",
  "text": [
    " a b\n",
    "0 13 22\n",
    "1 64 15\n",
    "2 44 47\n"
  ]
}

],
{
  "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": [
    "a=pd.date_range(start='1/1/2023',end='10/2/2023')\n",

```

```
"print(a)"
],
"metadata": {
  "id": "dgyC0JhVYl4F",
  "colab": {
    "base_uri": "https://localhost:8080/"
  },
  "outputId": "db806eb0-e26a-48a1-93d5-1c00c31985e2"
},
"execution_count": 21,
"outputs": [
  {
    "output_type": "stream",
    "name": "stdout",
    "text": [
      "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',\n",
      "                ...\n",
      "                '2023-09-23', '2023-09-24', '2023-09-25', '2023-09-26',\n",
      "                '2023-09-27', '2023-09-28', '2023-09-29', '2023-09-30',\n",
      "                '2023-10-01', '2023-10-02'],\n",
      "                dtype='datetime64[ns]', length=275, freq='D')\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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  },
  "execution_count": 17,
  "outputs": []
}

```

```
},
{
  "cell_type": "code",
  "source": [
    "df=pd.DataFrame(lists)\n",
    "print(df)"
  ],
  "metadata": {
    "id": "knH76sDKYsVX",
    "outputId": "0e097db5-1366-48ab-cb5c-09c3fcbc24ec",
    "colab": {
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    }
  },
  "execution_count": 18,
  "outputs": [
    {
      "output_type": "stream",
      "name": "stdout",
      "text": [
        " 0  1  2\n",
        "0 1 aaa 22\n",
        "1 2 bbb 25\n",
        "2 3 ccc 24\n"
      ]
    }
  ]
}
```

}

]

}

]

}