|  |
| --- |
| { |
|  | "cells": [ |
|  | { |
|  | "cell\_type": "markdown", |
|  | "metadata": { |
|  | "id": "fwU2iooz85jt" |
|  | }, |
|  | "source": [ |
|  | "## Exercises\n", |
|  | "\n", |
|  | "Answer the questions or complete the tasks outlined in bold below, use the specific method described if applicable." |
|  | ] |
|  | }, |
|  | { |
|  | "cell\_type": "markdown", |
|  | "metadata": { |
|  | "id": "SzBQQ\_ml85j1" |
|  | }, |
|  | "source": [ |
|  | "\*\* What is 7 to the power of 4?\*\*" |
|  | ] |
|  | }, |
|  | { |
|  | "cell\_type": "code", |
|  | "execution\_count": 1, |
|  | "metadata": { |
|  | "id": "UhvE4PBC85j3", |
|  | "outputId": "ee8bf637-f32e-4e26-f161-e290dd873809", |
|  | "colab": { |
|  | "base\_uri": "https://localhost:8080/" |
|  | } |
|  | }, |
|  | "outputs": [ |
|  | { |
|  | "output\_type": "stream", |
|  | "name": "stdout", |
|  | "text": [ |
|  | "2401\n" |
|  | ] |
|  | } |
|  | ], |
|  | "source": [ |
|  | "def power4(num):\n", |
|  | " num=num\*num\*num\*num\n", |
|  | " print(num)\n", |
|  | "\n", |
|  | "power4(7)" |
|  | ] |
|  | }, |
|  | { |
|  | "cell\_type": "markdown", |
|  | "metadata": { |
|  | "id": "ds8G9S8j85j6" |
|  | }, |
|  | "source": [ |
|  | "\*\* Split this string:\*\*\n", |
|  | "\n", |
|  | " s = \"Hi there Sam!\"\n", |
|  | " \n", |
|  | "\*\*into a list. \*\*" |
|  | ] |
|  | }, |
|  | { |
|  | "cell\_type": "code", |
|  | "execution\_count": 2, |
|  | "metadata": { |
|  | "collapsed": true, |
|  | "id": "GD\_Tls3H85j7", |
|  | "colab": { |
|  | "base\_uri": "https://localhost:8080/" |
|  | }, |
|  | "outputId": "ae675f51-a079-4f34-ef1f-310d94624c38" |
|  | }, |
|  | "outputs": [ |
|  | { |
|  | "output\_type": "stream", |
|  | "name": "stdout", |
|  | "text": [ |
|  | "['Hi', 'there', 'sam!']\n" |
|  | ] |
|  | } |
|  | ], |
|  | "source": [ |
|  | "txt=\"Hi there sam!\"\n", |
|  | "x=txt.split()\n", |
|  | "print(x)" |
|  | ] |
|  | }, |
|  | { |
|  | "cell\_type": "code", |
|  | "execution\_count": 3, |
|  | "metadata": { |
|  | "id": "RRGOKoai85j8", |
|  | "outputId": "cb127b16-9ed2-440b-efe9-90c36539e1b1", |
|  | "colab": { |
|  | "base\_uri": "https://localhost:8080/" |
|  | } |
|  | }, |
|  | "outputs": [ |
|  | { |
|  | "output\_type": "stream", |
|  | "name": "stdout", |
|  | "text": [ |
|  | "['Hi', 'there', 'dad!']\n" |
|  | ] |
|  | } |
|  | ], |
|  | "source": [ |
|  | "txt=\"Hi there dad!\"\n", |
|  | "y=txt.split()\n", |
|  | "print(y)" |
|  | ] |
|  | }, |
|  | { |
|  | "cell\_type": "markdown", |
|  | "metadata": { |
|  | "id": "\_bBNOu-785j9" |
|  | }, |
|  | "source": [ |
|  | "\*\* Given the variables:\*\*\n", |
|  | "\n", |
|  | " planet = \"Earth\"\n", |
|  | " diameter = 12742\n", |
|  | "\n", |
|  | "\*\* Use .format() to print the following string: \*\*\n", |
|  | "\n", |
|  | " The diameter of Earth is 12742 kilometers." |
|  | ] |
|  | }, |
|  | { |
|  | "cell\_type": "code", |
|  | "execution\_count": 7, |
|  | "metadata": { |
|  | "collapsed": true, |
|  | "id": "2TrzmDcS85j-", |
|  | "colab": { |
|  | "base\_uri": "https://localhost:8080/" |
|  | }, |
|  | "outputId": "e77b88e2-fbca-43a7-f7f9-b4e3125f41a4" |
|  | }, |
|  | "outputs": [ |
|  | { |
|  | "output\_type": "stream", |
|  | "name": "stdout", |
|  | "text": [ |
|  | "The diameter of earth is 12742.00 kilometers\n" |
|  | ] |
|  | } |
|  | ], |
|  | "source": [ |
|  | "txt=\"The diameter of earth is {diameter:.2f} kilometers\"\n", |
|  | "print(txt.format(diameter=12742))" |
|  | ] |
|  | }, |
|  | { |
|  | "cell\_type": "code", |
|  | "execution\_count": 8, |
|  | "metadata": { |
|  | "id": "s\_dQ7\_xc85j\_", |
|  | "outputId": "92c68753-add0-4808-df18-f10718acd91c", |
|  | "colab": { |
|  | "base\_uri": "https://localhost:8080/" |
|  | } |
|  | }, |
|  | "outputs": [ |
|  | { |
|  | "output\_type": "stream", |
|  | "name": "stdout", |
|  | "text": [ |
|  | "The diameter of earth is 12742.00 kilometers\n" |
|  | ] |
|  | } |
|  | ], |
|  | "source": [ |
|  | "txt=\"The diameter of earth is {diameter:.2f} kilometers\"\n", |
|  | "print(txt.format(diameter=12742))" |
|  | ] |
|  | }, |
|  | { |
|  | "cell\_type": "markdown", |
|  | "metadata": { |
|  | "id": "QAKtN7Hh85kB" |
|  | }, |
|  | "source": [ |
|  | "\*\* Given this nested list, use indexing to grab the word \"hello\" \*\*" |
|  | ] |
|  | }, |
|  | { |
|  | "cell\_type": "code", |
|  | "execution\_count": 35, |
|  | "metadata": { |
|  | "collapsed": true, |
|  | "id": "-7dzQDyK85kD" |
|  | }, |
|  | "outputs": [], |
|  | "source": [ |
|  | "lst = [1,2,[3,4],[5,[100,200,['hello']],23,11],1,7]" |
|  | ] |
|  | }, |
|  | { |
|  | "cell\_type": "code", |
|  | "execution\_count": 47, |
|  | "metadata": { |
|  | "id": "6m5C0sTW85kE", |
|  | "outputId": "0fdc1c75-2105-4fd9-edaa-eaf7b3702b76", |
|  | "colab": { |
|  | "base\_uri": "https://localhost:8080/", |
|  | "height": 36 |
|  | } |
|  | }, |
|  | "outputs": [ |
|  | { |
|  | "output\_type": "execute\_result", |
|  | "data": { |
|  | "text/plain": [ |
|  | "'hello'" |
|  | ], |
|  | "application/vnd.google.colaboratory.intrinsic+json": { |
|  | "type": "string" |
|  | } |
|  | }, |
|  | "metadata": {}, |
|  | "execution\_count": 47 |
|  | } |
|  | ], |
|  | "source": [ |
|  | "lst[3][1][2][0]" |
|  | ] |
|  | }, |
|  | { |
|  | "cell\_type": "markdown", |
|  | "metadata": { |
|  | "id": "9Ma7M4a185kF" |
|  | }, |
|  | "source": [ |
|  | "\*\* Given this nest dictionary grab the word \"hello\". Be prepared, this will be annoying/tricky \*\*" |
|  | ] |
|  | }, |
|  | { |
|  | "cell\_type": "code", |
|  | "execution\_count": 54, |
|  | "metadata": { |
|  | "id": "vrYAxSYN85kG" |
|  | }, |
|  | "outputs": [], |
|  | "source": [ |
|  | "d = {'k1':[1,2,3,{'tricky':['oh','man','inception',{'target':[1,2,3,'hello']}]}]}" |
|  | ] |
|  | }, |
|  | { |
|  | "cell\_type": "code", |
|  | "execution\_count": 53, |
|  | "metadata": { |
|  | "id": "FlILSdm485kH", |
|  | "outputId": "575c40f7-a039-4bfe-c8c1-212747826dcc", |
|  | "colab": { |
|  | "base\_uri": "https://localhost:8080/", |
|  | "height": 36 |
|  | } |
|  | }, |
|  | "outputs": [ |
|  | { |
|  | "output\_type": "execute\_result", |
|  | "data": { |
|  | "text/plain": [ |
|  | "'hello'" |
|  | ], |
|  | "application/vnd.google.colaboratory.intrinsic+json": { |
|  | "type": "string" |
|  | } |
|  | }, |
|  | "metadata": {}, |
|  | "execution\_count": 53 |
|  | } |
|  | ], |
|  | "source": [ |
|  | "d['k1'][3]['tricky'][3]['target'][3]" |
|  | ] |
|  | }, |
|  | { |
|  | "cell\_type": "markdown", |
|  | "metadata": { |
|  | "id": "FInV\_FKB85kI" |
|  | }, |
|  | "source": [ |
|  | "\*\* What is the main difference between a tuple and a list? \*\*" |
|  | ] |
|  | }, |
|  | { |
|  | "cell\_type": "code", |
|  | "execution\_count": 68, |
|  | "metadata": { |
|  | "collapsed": true, |
|  | "id": "\_VBWf00q85kJ", |
|  | "colab": { |
|  | "base\_uri": "https://localhost:8080/", |
|  | "height": 53 |
|  | }, |
|  | "outputId": "849ff4d2-66cd-411d-a38b-afa4d9974e61" |
|  | }, |
|  | "outputs": [ |
|  | { |
|  | "output\_type": "execute\_result", |
|  | "data": { |
|  | "text/plain": [ |
|  | "'\\n1.List is dynamic , Tuple is static characteristic.\\n2.List is mutable , Tuple is Immutable.\\n3.List consume more memory , Tuple comsumes Less memore compared to Tuple.\\n4.List Example: list[v,i,j,a,y] , Tuple Example: tuple(v,i,j,a,y) '" |
|  | ], |
|  | "application/vnd.google.colaboratory.intrinsic+json": { |
|  | "type": "string" |
|  | } |
|  | }, |
|  | "metadata": {}, |
|  | "execution\_count": 68 |
|  | } |
|  | ], |
|  | "source": [ |
|  | "1.List is dynamic , Tuple is static characteristic.\n", |
|  | "2.List is mutable , Tuple is Immutable.\n", |
|  | "3.List consume more memory , Tuple comsumes Less memore compared to Tuple.\n", |
|  | "4.List Example: list[v,i,j,a,y] , Tuple Example: tuple(v,i,j,a,y)" |
|  | ] |
|  | }, |
|  | { |
|  | |  | | --- | | "cell\_type": "markdown", | |  | "metadata": { | |  | "id": "zP-j0HZj85kK" | |  | }, | |  | "source": [ | |  | "\*\* Create a function that grabs the email website domain from a string in the form: \*\*\n", | |  | "\n", | |  | "> Indented block\n", | |  | "\n", | |  | "\n", | |  | "\n", | |  | " user@domain.com\n", | |  | " \n", | |  | "\*\*So for example, passing \"user@domain.com\" would return: domain.com\*\* \*italicized text\*" | |  | ] | |  | }, | |  | { | |  | "cell\_type": "code", | |  | "execution\_count": 57, | |  | "metadata": { | |  | "collapsed": true, | |  | "id": "unvEAwjk85kL" | |  | }, | |  | "outputs": [], | |  | "source": [ | |  | "def domainGet(email):\n", | |  | " return email.split('@')[-1]" | |  | ] | |  | }, | |  | { | |  | "cell\_type": "code", | |  | "execution\_count": 58, | |  | "metadata": { | |  | "id": "Gb9dspLC85kL", | |  | "outputId": "49b79ab8-972f-4d7b-9043-abb7c15c42bd", | |  | "colab": { | |  | "base\_uri": "https://localhost:8080/", | |  | "height": 36 | |  | } | |  | }, | |  | "outputs": [ | |  | { | |  | "output\_type": "execute\_result", | |  | "data": { | |  | "text/plain": [ | |  | "'domain.com'" | |  | ], | |  | "application/vnd.google.colaboratory.intrinsic+json": { | |  | "type": "string" | |  | } | |  | }, | |  | "metadata": {}, | |  | "execution\_count": 58 | |  | } | |  | ], | |  | "source": [ | |  | "domainGet('user@domain.com')" | |  | ] | |  | }, | |  | { | |  | "cell\_type": "markdown", | |  | "metadata": { | |  | "id": "gYydb-y085kM" | |  | }, | |  | "source": [ | |  | "\*\* Create a basic function that returns True if the word 'dog' is contained in the input string. Don't worry about edge cases like a punctuation being attached to the word dog, but do account for capitalization. \*\*" | |  | ] | |  | }, | |  | { | |  | "cell\_type": "code", | |  | "execution\_count": 59, | |  | "metadata": { | |  | "collapsed": true, | |  | "id": "Q4ldLGV785kM" | |  | }, | |  | "outputs": [], | |  | "source": [ | |  | "def findDog(st):\n", | |  | " return 'dog' in st.lower().split()" | |  | ] | |  | }, | |  | { | |  | "cell\_type": "code", | |  | "execution\_count": 60, | |  | "metadata": { | |  | "id": "EqH6b7yv85kN", | |  | "outputId": "586f13c3-f517-445c-e69d-6d71289b59f3", | |  | "colab": { | |  | "base\_uri": "https://localhost:8080/" | |  | } | |  | }, | |  | "outputs": [ | |  | { | |  | "output\_type": "execute\_result", | |  | "data": { | |  | "text/plain": [ | |  | "True" | |  | ] | |  | }, | |  | "metadata": {}, | |  | "execution\_count": 60 | |  | } | |  | ], | |  | "source": [ | |  | "findDog('Is there a dog here?')" | |  | ] | |  | }, | |  | { | |  | "cell\_type": "markdown", | |  | "metadata": { | |  | "id": "AyHQFALC85kO" | |  | }, | |  | "source": [ | |  | "\*\* Create a function that counts the number of times the word \"dog\" occurs in a string. Again ignore edge cases. \*\*" | |  | ] | |  | }, | |  | { | |  | "cell\_type": "code", | |  | "execution\_count": 61, | |  | "metadata": { | |  | "id": "6hdc169585kO" | |  | }, | |  | "outputs": [], | |  | "source": [ | |  | "def countDog(st):\n", | |  | " count = 0\n", | |  | " for word in st.lower().split():\n", | |  | " if word == 'dog':\n", | |  | " count += 1\n", | |  | " return count" | |  | ] | |  | }, | |  | { | |  | "cell\_type": "code", | |  | "execution\_count": 62, | |  | "metadata": { | |  | "id": "igzsvHb385kO", | |  | "outputId": "c6738daf-cbda-4cac-b950-d335d01302ad", | |  | "colab": { | |  | "base\_uri": "https://localhost:8080/" | |  | } | |  | }, | |  | "outputs": [ | |  | { | |  | "output\_type": "execute\_result", | |  | "data": { | |  | "text/plain": [ | |  | "2" | |  | ] | |  | }, | |  | "metadata": {}, | |  | "execution\_count": 62 | |  | } | |  | ], | |  | "source": [ | |  | "countDog('This dog runs faster than the other dog dude!')" | |  | ] | |  | }, | |  | { | |  | "cell\_type": "markdown", | |  | "metadata": { | |  | "id": "3n7jJt4k85kP" | |  | }, | |  | "source": [ | |  | "### Problem\n", | |  | "\*\*You are driving a little too fast, and a police officer stops you. Write a function\n", | |  | " to return one of 3 possible results: \"No ticket\", \"Small ticket\", or \"Big Ticket\". \n", | |  | " If your speed is 60 or less, the result is \"No Ticket\". If speed is between 61 \n", | |  | " and 80 inclusive, the result is \"Small Ticket\". If speed is 81 or more, the result is \"Big Ticket\". Unless it is your birthday (encoded as a boolean value in the parameters of the function) -- on your birthday, your speed can be 5 higher in all \n", | |  | " cases. \*\*" | |  | ] | |  | }, | |  | { | |  | "cell\_type": "code", | |  | "execution\_count": 63, | |  | "metadata": { | |  | "collapsed": true, | |  | "id": "nvXMkvWk85kQ" | |  | }, | |  | "outputs": [], | |  | "source": [ | |  | "def caught\_speeding(speed, is\_birthday):\n", | |  | " \n", | |  | " if is\_birthday:\n", | |  | " speeding = speed - 5\n", | |  | " else:\n", | |  | " speeding = speed\n", | |  | " \n", | |  | " if speeding > 80:\n", | |  | " return 'Big Ticket'\n", | |  | " elif speeding > 60:\n", | |  | " return 'Small Ticket'\n", | |  | " else:\n", | |  | " return 'No Ticket'" | |  | ] | |  | }, | |  | { | |  | "cell\_type": "code", | |  | "execution\_count": null, | |  | "metadata": { | |  | "id": "BU\_UZcyk85kS", | |  | "outputId": "699de8ef-a18c-436b-fdd9-60dc44979906" | |  | }, | |  | "outputs": [ | |  | { | |  | "data": { | |  | "text/plain": [ | |  | "'Big Ticket'" | |  | ] | |  | }, | |  | "execution\_count": 6, | |  | "metadata": { | |  | "tags": [] | |  | }, | |  | "output\_type": "execute\_result" | |  | } | |  | ], | |  | "source": [ | |  | "caught\_speeding(81,False)" | |  | ] | |  | }, | |  | { | |  | "cell\_type": "code", | |  | "execution\_count": 64, | |  | "metadata": { | |  | "id": "p1AGJ7DM85kR", | |  | "outputId": "06a9e18c-3d2b-48c5-967e-aada701f74e0", | |  | "colab": { | |  | "base\_uri": "https://localhost:8080/", | |  | "height": 36 | |  | } | |  | }, | |  | "outputs": [ | |  | { | |  | "output\_type": "execute\_result", | |  | "data": { | |  | "text/plain": [ | |  | "'Small Ticket'" | |  | ], | |  | "application/vnd.google.colaboratory.intrinsic+json": { | |  | "type": "string" | |  | } | |  | }, | |  | "metadata": {}, | |  | "execution\_count": 64 | |  | } | |  | ], | |  | "source": [ | |  | "caught\_speeding(81,True)" | |  | ] | |  | }, | |  | { | |  | "cell\_type": "markdown", | |  | "source": [ | |  | "Create an employee list with basic salary values(at least 5 values for 5 employees) and using a for loop retreive each employee salary and calculate total salary expenditure. " | |  | ], | |  | "metadata": { | |  | "id": "Tie4rC7\_kAOC" | |  | } | |  | }, | |  | { | |  | "cell\_type": "code", | |  | "source": [ | |  | "def employee\_details(name,emp\_id,ctc,designation,exp):\n", | |  | " print(\"\\n Name:-\",name)\n", | |  | " print(\"Emp\_ID:-\",emp\_id)\n", | |  | " print(\"CTC:-\",ctc)\n", | |  | " print(\"Designation:-\",designation)\n", | |  | " print(\"Exprience:-\",exp)\n", | |  | "employee\_details(\" Vijay\",421319104045,\"6.6LPA\",\"BE-CSE IV Year\",\"5 years\")\n", | |  | "employee\_details(\"Ajay\",421319104046,\"6.5LPA\",\"BE-CSE IV Year\",\"4 years\")\n", | |  | "employee\_details(\"Ajith\",421319104047,\"6.4LPA\",\"BE-CSE IV Year\",\"3 years\")\n", | |  | "employee\_details(\"Madhavan\",421319104048,\"6.3LPA\",\"BE-CSE IV Year\",\"2 years\")\n", | |  | "employee\_details(\"John\",421319104049,\"6.2LPA\",\"BE-CSE IV Year\",\"1 years\")\n", | |  | "Sal\_exp=[6.6+6.5+6.4+6.3+6.2]\n", | |  | "Salary=0\n", | |  | "for i in Sal\_exp:\n", | |  | " Salary=Salary+i\n", | |  | " print(\"\\n Total Salary Expenditure is:-\", Salary, \"LPA\")" | |  | ], | |  | "metadata": { | |  | "id": "R5-CdXSKjacN", | |  | "colab": { | |  | "base\_uri": "https://localhost:8080/" | |  | }, | |  | "outputId": "f140813a-fc90-4637-df6a-e098704bdcee" | |  | }, | |  | "execution\_count": 65, | |  | "outputs": [ | |  | { | |  | "output\_type": "stream", | |  | "name": "stdout", | |  | "text": [ | |  | "\n", | |  | " Name:- Vijay\n", | |  | "Emp\_ID:- 421319104045\n", | |  | "CTC:- 6.6LPA\n", | |  | "Designation:- BE-CSE IV Year\n", | |  | "Exprience:- 5 years\n", | |  | "\n", | |  | " Name:- Ajay\n", | |  | "Emp\_ID:- 421319104046\n", | |  | "CTC:- 6.5LPA\n", | |  | "Designation:- BE-CSE IV Year\n", | |  | "Exprience:- 4 years\n", | |  | "\n", | |  | " Name:- Ajith\n", | |  | "Emp\_ID:- 421319104047\n", | |  | "CTC:- 6.4LPA\n", | |  | "Designation:- BE-CSE IV Year\n", | |  | "Exprience:- 3 years\n", | |  | "\n", | |  | " Name:- Madhavan\n", | |  | "Emp\_ID:- 421319104048\n", | |  | "CTC:- 6.3LPA\n", | |  | "Designation:- BE-CSE IV Year\n", | |  | "Exprience:- 2 years\n", | |  | "\n", | |  | " Name:- John\n", | |  | "Emp\_ID:- 421319104049\n", | |  | "CTC:- 6.2LPA\n", | |  | "Designation:- BE-CSE IV Year\n", | |  | "Exprience:- 1 years\n", | |  | "\n", | |  | " Total Salary Expenditure is:- 32.0 LPA\n" | |  | ] | |  | } | |  | ] | |  | }, | |  | { | |  | "cell\_type": "markdown", | |  | "source": [ | |  | "Create two dictionaries in Python:\n", | |  | "\n", | |  | "First one to contain fields as Empid, Empname, Basicpay\n", | |  | "\n", | |  | "Second dictionary to contain fields as DeptName, DeptId.\n", | |  | "\n", | |  | "Combine both dictionaries. " | |  | ], | |  | "metadata": { | |  | "id": "-L1aiFqRkF5s" | |  | } | |  | }, | |  | { | |  | "cell\_type": "code", | |  | "source": [ | |  | "dict1={\"EmpID\":5,\"EmpName\":'Vijay',\"BasicPay\":'5.5CTC'}\n", | |  | "dict2={\"DeptName\":'CSE',\"DeptID\":104}\n", | |  | "print(dict1)\n", | |  | "print(dict2)" | |  | ], | |  | "metadata": { | |  | "id": "8ugVoEe0kOsk", | |  | "colab": { | |  | "base\_uri": "https://localhost:8080/" | |  | }, | |  | "outputId": "4a7f3ed6-4b02-44dd-9086-56afaf536df9" | |  | }, | |  | "execution\_count": 66, | |  | "outputs": [ | |  | { | |  | "output\_type": "stream", | |  | "name": "stdout", | |  | "text": [ | |  | "{'EmpID': 5, 'EmpName': 'Vijay', 'BasicPay': '5.5CTC'}\n", | |  | "{'DeptName': 'CSE', 'DeptID': 104}\n" | |  | ] | |  | } | |  | ] | |  | }, | |  | { | |  | "cell\_type": "code", | |  | "source": [ | |  | "def Merge(dict1, dict2):\n", | |  | " return(dict2.update(dict1))\n", | |  | "dict1={\"EmpID\":5,\"EmpName\":'Vijay',\"BasicPay\":'5.5CTC'}\n", | |  | "dict2={\"DeptName\":'CSE',\"DeptID\":104}\n", | |  | "print(Merge(dict1,dict2))\n", | |  | "print(dict2)" | |  | ], | |  | "metadata": { | |  | "colab": { | |  | "base\_uri": "https://localhost:8080/" | |  | }, | |  | "id": "9hURfBDJkaCZ", | |  | "outputId": "3ebdb317-ec7a-496e-fbf9-ee2b1dc346cd" | |  | }, | |  | "execution\_count": 67, | |  | "outputs": [ | |  | { | |  | "output\_type": "stream", | |  | "name": "stdout", | |  | "text": [ | |  | "None\n", | |  | "{'DeptName': 'CSE', 'DeptID': 104, 'EmpID': 5, 'EmpName': 'Vijay', 'BasicPay': '5.5CTC'}\n" | |  | ] | |  | } | |  | ] | |  | } | |  | ], | |  | "metadata": { | |  | "colab": { | |  | "provenance": [], | |  | "collapsed\_sections": [] | |  | }, | |  | "kernelspec": { | |  | "display\_name": "Python 3", | |  | "language": "python", | |  | "name": "python3" | |  | }, | |  | "language\_info": { | |  | "codemirror\_mode": { | |  | "name": "ipython", | |  | "version": 3 | |  | }, | |  | "file\_extension": ".py", | |  | "mimetype": "text/x-python", | |  | "name": "python", | |  | "nbconvert\_exporter": "python", | |  | "pygments\_lexer": "ipython3", | |  | "version": "3.8.5" | |  | } | |  | }, | |  | "nbformat": 4, | |  | "nbformat\_minor":  } | |