AI-POWERED NUTRITION ANALYZER FOR FITNESS ENTHUSIATS

Assignment 1 **Team ID**

PNT2022TMID29934

Team Leader

1.Tamilvizhi.S

Team Members

2.Priyadharshini.M

3.Pavithra.S

4.Sindhuja.M.N

CODE


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{
 "nbformat": 4,
 "nbformat_minor": 0,
 "metadata": {
  "colab": {
   "provenance": [],
   "collapsed_sections": []
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  "kernelspec": {
   "name": "python3",
   "display_name": "Python 3"
```

```
  },
  "language_info": {
    "name": "python"
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  {
    "cell_type": "markdown",
    "source": [
      "# Basic Python"
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    "metadata": {
      "id": "McSxJAwcOdZ1"
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    "cell_type": "markdown",
    "source": [
      "## 1. Split this string"
    ],
    "metadata": {
      "id": "CU48hgo4Owz5"
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  {
```

```
  "cell_type": "code",
  "source": [
    "s = \"Hi there Sam!\""
  ],
  "metadata": {
    "id": "s07c7JK7Oqt-"
  },
  "execution_count": 3,
  "outputs": []
},
{
  "cell_type": "code",
  "source": [
    "print(s.split())"
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  "metadata": {
    "id": "6mGVa3SQYLkb",
    "outputId": "d5a4ef0b-60eb-46f6-bf89-eb68864929e1",
    "colab": {
      "base_uri": "https://localhost:8080/"
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  "execution_count": 4,
  "outputs": [
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```

```
     "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"
  }
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 {
  "cell_type": "code",
  "source": [
    "planet = \"Earth\"\n",
    "diameter = 12742"
  ],
```

```
  "metadata": {
    "id": "_ZHoml3kPqic"
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  "execution_count": 5,
  "outputs": []
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{
  "cell_type": "code",
  "source": [
    "print(\"The diameter of {0} is {1} kilometers\".format(planet,diameter))"
  ],
  "metadata": {
    "id": "HyRyJv6CYPb4",
    "outputId": "8f7f679f-2312-411e-fd88-e8fbd45276f0",
    "colab": {
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  },
  "execution_count": 6,
  "outputs": [
    {
      "output_type": "stream",
      "name": "stdout",
      "text": [
        "The diameter of Earth is 12742 kilometers\n"
```

```
     ]
    }
  ]
 },
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  "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": "fcVwbCc1QrQI"
  },
  "execution_count": 7,
  "outputs": []
 },
 {
```

```
"cell_type": "code",
"source": [
  "d['k1'][3]['tricky'][3]['target'][3]"
],
"metadata": {
  "id": "MvbkMZpXYRaw",
  "outputId": "93791b58-920c-4ee7-e615-f88dea56a1cc",
  "colab": {
    "base_uri": "https://localhost:8080/",
    "height": 36
  }
},
"execution_count": 8,
"outputs": [
  {
    "output_type": "execute_result",
    "data": {
      "text/plain": [
        "'hello'"
      ],
      "application/vnd.google.colaboratory.intrinsic+json": {
        "type": "string"
      }
    },
    "metadata": {},
```

```
      "execution_count": 8
    }
  ]
},
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  "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": 17,
  "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": [
  "print(np.zeros(10))"
 ],
 "metadata": {
  "id": "NHrirmgCYXvU",
  "colab": {
   "base_uri": "https://localhost:8080/"
  },
  "outputId": "c1bfcb47-a742-478c-feb8-9871ba3f8578"
 },
 "execution_count": 18,
 "outputs": [
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   "output_type": "stream",
```

```
     "name": "stdout",
     "text": [
       "[0. 0. 0. 0. 0. 0. 0. 0. 0. 0.]\n"
     ]
    }
  ]
 },
 {
  "cell_type": "code",
  "source": [
   "print(np.ones(10)*5)"
  ],
  "metadata": {
   "id": "e4005lsTYXxx",
   "colab": {
    "base_uri": "https://localhost:8080/"
   },
   "outputId": "98abce9e-8cf0-4322-ae9a-e237e7fa58f3"
  },
  "execution_count": 22,
  "outputs": [
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    "output_type": "stream",
    "name": "stdout",
    "text": [
```

```
        "[5. 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": [
     "print(np.arange(20,36,2))"
    ],
    "metadata": {
     "id": "oAI2tbU2Yag-",
     "colab": {
      "base_uri": "https://localhost:8080/"
     },
     "outputId": "54142ef6-518d-4e66-d45c-496910eced89"
```

```
  },
  "execution_count": 23,
  "outputs": [
   {
    "output_type": "stream",
    "name": "stdout",
    "text": [
     "[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": [
   "print(np.arange(0,9).reshape(3,3))"
```

```
 ],
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  "id": "tOlEVH7BYceE",
  "colab": {
   "base_uri": "https://localhost:8080/"
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  "outputId": "b2515927-7df9-4882-936e-16a2507a903f"
 },
 "execution_count": 24,
 "outputs": [
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   "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",
    "np.concatenate((a,b),axis=0)"
   ],
   "metadata": {
    "colab": {
     "base_uri": "https://localhost:8080/"
    },
    "id": "YjJyumlnbt1O",
    "outputId": "291a3218-5de8-4cf7-c092-9ada601a3c67"
   },
   "execution_count": 40,
   "outputs": [
    {
     "output_type": "execute_result",
     "data": {
```

```
      "text/plain": [
        "array([1, 2, 3, 4, 5, 6])"
      ]
     },
     "metadata": {},
     "execution_count": 40
    }
  ]
 },
 {
  "cell_type": "markdown",
  "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": 31,
  "outputs": []
 },
 {
  "cell_type": "code",
  "source": [
   "print(pd.DataFrame())"
  ],
  "metadata": {
   "id": "xNpI_XXoYhs0",
   "colab": {
    "base_uri": "https://localhost:8080/"
   },
   "outputId": "d86c0d4b-331a-47c9-f07f-63c9656b31ea"
  },
```

```
  "execution_count": 33,
  "outputs": [
   {
    "output_type": "stream",
    "name": "stdout",
    "text": [
     "Empty DataFrame\n",
     "Columns: []\n",
     "Index: []\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": [
```

```
  "p=pd.date_range(start='1-1-2023',end='10-2-2023')\n",
  "for val in p:\n",
  "  print(val);"
 ],
 "metadata": {
  "id": "dgyC0JhVYl4F",
  "colab": {
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  },
  "outputId": "a2a2c8cd-b348-4765-c90e-3fadb2b23ed7"
 },
 "execution_count": 35,
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    "2023-01-03 00:00:00\n",
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    "2023-01-05 00:00:00\n",
    "2023-01-06 00:00:00\n",
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"2023-09-05 00:00:00\n",

"2023-09-06 00:00:00\n",

"2023-09-07 00:00:00\n",

"2023-09-08 00:00:00\n",

"2023-09-09 00:00:00\n",

"2023-09-10 00:00:00\n",

"2023-09-11 00:00:00\n",

"2023-09-12 00:00:00\n",

"2023-09-13 00:00:00\n",

"2023-09-14 00:00:00\n",

"2023-09-15 00:00:00\n",

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        "2023-09-17 00:00:00\n",
        "2023-09-18 00:00:00\n",
        "2023-09-19 00:00:00\n",
        "2023-09-20 00:00:00\n",
        "2023-09-21 00:00:00\n",
        "2023-09-22 00:00:00\n",
        "2023-09-23 00:00:00\n",
        "2023-09-24 00:00:00\n",
        "2023-09-25 00:00:00\n",
        "2023-09-26 00:00:00\n",
        "2023-09-27 00:00:00\n",
        "2023-09-28 00:00:00\n",
        "2023-09-29 00:00:00\n",
        "2023-09-30 00:00:00\n",
        "2023-10-01 00:00:00\n",
        "2023-10-02 00:00:00\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": {
    "id": "_XMC8aEt0llB"
   },
   "execution_count": 36,
   "outputs": []
  },
  {
   "cell_type": "code",
   "source": [
    "df=pd.DataFrame(lists)\n",
    "df"
```

```
],
"metadata": {
  "id": "knH76sDKYsVX",
  "colab": {
    "base_uri": "https://localhost:8080/",
    "height": 143
  },
  "outputId": "5b990d6b-e3e2-473f-d3c0-e6d08249819a"
},
"execution_count": 37,
"outputs": [
  {
    "output_type": "execute_result",
    "data": {
      "text/plain": [
        "   0   1   2\n",
        "0  1  aaa  22\n",
        "1  2  bbb  25\n",
        "2  3  ccc  24"
      ],
      "text/html": [
        "\n",
        "  <div id=\"df-7995861e-6d0e-46e4-a112-d269a0aafeaf\">\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>aaa</td>\n",
"    <td>22</td>\n",
"  </tr>\n",
"  <tr>\n",
"    <th>1</th>\n",
"    <td>2</td>\n",
"    <td>bbb</td>\n",
"    <td>25</td>\n",
"  </tr>\n",
"  <tr>\n",
"    <th>2</th>\n",
"    <td>3</td>\n",
"    <td>ccc</td>\n",
"    <td>24</td>\n",
"  </tr>\n",
" </tbody>\n",
"</table>\n",
"</div>\n",
"    <button class=\"colab-df-convert\" onclick=\"convertToInteractive('df-7995861e-6d0e-46e4-a112-d269a0aafeaf')\"\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-7995861e-6d0e-46e4-a112-d269a0aafeaf 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-7995861e-6d0e-46e4-a112-
d269a0aafeaf');\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": 37
       }
     ]
    }
  ]
}
```