

# MUTHYAMMAL ENGINEERING COLLEGE

**Computer Science and Engineering**

**IBM NALAIYA THIRAN**

**Domain name : Artificial Intelligence**

Title : REAL-TIME COMMUNICATION SYSTEM POWERED BY AI FOR SPECIALLY ABLED

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      "data": {
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        ],
        "application/vnd.google.colaboratory.intrinsic+json": {
          "type": "string"
        }
      },
      "metadata": {},
      "execution_count": 2
    }
  ],
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    "## 2. Use .format() to print the following string. \n",
    "\n",
    "### Output should be: The diameter of Earth is 12742 kilometers."
  ],
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  "source": [
    "planet = \"Earth\"\n",
    "diameter = 12742"
  ],
  "metadata": {
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  },
  "execution_count": 3,
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    "cell_type": "code",
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        "print(\"The diameter of {} is {}
kilometer\".format(planet,diameter\n",
        "
    ) ) "
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            "text": [
                "The diameter of Earth is 12742 kilometer\n"
            ]
        }
    ]
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        "### 3. In this nest dictionary grab the word \"hello\""
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        "id": "KE74ZEwkRExZ"
    }
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    "source": [
        "d =
{'k1': [1,2,3,{'tricky': ['oh', 'man', 'inception', {'target': [1,2,3, 'hello']}
] ] ] }"
    ],
    "metadata": {
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    "source": [
        "d['k1'][3]['tricky'][3]['target'][3]"
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        "data": {
            "text/plain": [
                "'hello'"
            ],
            "application/vnd.google.colaboratory.intrinsic+json": {
                "type": "string"
            }
        },
        "metadata": {},
        "execution_count": 9
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        "# Numpy"
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        "import numpy as np"
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        "### 4.1 Create an array of 10 zeros? \n",
        "### 4.2 Create an array of 10 fives?"
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        "a=np.zeros(10)\n",

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    {
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      "data": {
        "text/plain": [
          "array([0., 0., 0., 0., 0., 0., 0., 0., 0., 0.])"
        ]
      },
      "metadata": {},
      "execution_count": 12
    }
  ]
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    "b=np.ones(10)*5\\n",
    "b"
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      "data": {
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      "metadata": {},
      "execution_count": 13
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    "## 5. Create an array of all the even integers from 20 to 35"
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    "cell_type": "code",
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      "s=np.arange(20,50,2)\n",
      "s"
    ],
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      "colab": {
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    "execution_count": 15,
    "outputs": [
      {
        "output_type": "execute_result",
        "data": {
          "text/plain": [
            "array([20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44,
46, 48])"
          ]
        },
        "metadata": {},
        "execution_count": 15
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      "## 6. Create a 3x3 matrix with values ranging from 0 to 8"
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      "b=np.arange(0,9).reshape(3,3)\n",
      "b"
    ],
    "metadata": {
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"outputs": [
  {
    "output_type": "execute_result",
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      "text/plain": [
        "array([[0, 1, 2],\n",
        "       [3, 4, 5],\n",
        "       [6, 7, 8]])"
      ]
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    "metadata": {},
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    "## 7. Concatenate a and b \n",
    "## a = np.array([1, 2, 3]), b = np.array([4, 5, 6])"
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  "metadata": {
    "id": "hQ0dnhAQuU_p"
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    "a=np.array([1,2,3])\n",
    "b=np.array([4,5,6])\n",
    "np.concatenate((a,b))"
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        "text/plain": [
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        ]
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      "metadata": {},
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      "# Pandas"
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    "metadata": {
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      "import pandas as pd\n"
    ],
    "metadata": {
      "id": "T5OxJRZ8uvR7"
    }
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  "execution_count": 22,
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    "cell_type": "code",
    "source": [
      "d =
{ \"names\": [\"aaa\", \"bbb\", \"ccc\", ], \"age\": [21, 22, 20] } \n",
      "df = pd.DataFrame(d) \n",
      "df"
    ],
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      "data": {
        "text/plain": [
          "   names  age\n0    aaa   21\n1    bbb   22\n2    ccc   20"
        ],
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```



```

"\n",
"  <div id=\"df-b5679877-3840-42e3-9a1b-a99a23e039fd\">\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>names</th>\n",
"          <th>age</th>\n",
"        </tr>\n",
"      </thead>\n",
"      <tbody>\n",
"        <tr>\n",
"          <th>0</th>\n",
"          <td>aaa</td>\n",
"          <td>21</td>\n",
"        </tr>\n",
"        <tr>\n",
"          <th>1</th>\n",
"          <td>bbb</td>\n",
"          <td>22</td>\n",
"        </tr>\n",
"        <tr>\n",
"          <th>2</th>\n",
"          <td>ccc</td>\n",
"          <td>20</td>\n",
"        </tr>\n",
"      </tbody>\n",
"    </table>\n",
"  </div>\n",
"    <button class=\"colab-df-convert\"
onclick=\"convertToInteractive('df-b5679877-3840-42e3-
9a1ba99a23e039fd')\">\n",
"      title=\"Convert this dataframe to an
interactive table.\">\n",
"      style=\"display:none;\">\n",
"    </button>\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 5.44l1.94 2.06.94-2.06 2.06-.94-
2.06.94-.94-2.06-.94 2.06-2.06.94zm-11 1L8.5 8.5l1.94-2.06 2.06-.94-2.06-
.94L8.5 2.5l-1.94 2.06-2.06.94zm10 10l1.94 2.06.94-2.06-.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.39.39.959 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",
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"        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-b5679877-3840-42e3-
9a1b-a99a23e039fd button.colab-df-convert');\n",

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        "        buttonEl.style.display =\n",
        "        google.colab.kernel.accessAllowed ? 'block' :
'none';\n",
        "\n",
        "        async function convertToInteractive(key) {\n",
"        const element = document.querySelector('#dfb5679877-3840-
42e3-9a1b-a99a23e039fd');\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",

```

[illegible]

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        "          [3, 'ccc', 24]]"
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  }
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