

KSR College Of Engineering , Tiruchengode

Department of Information Technology

NALAIYA THIRAN

AI ASSESMENT- 1

```
{
  "nbformat": 4,
  "nbformat_minor": 0,
  "metadata": {
    "colab": {
      "provenance": [],
      "collapsed_sections": []
    },
    "kernelspec": {
      "name": "python3",
      "display_name": "Python 3"
    },
    "language_info": {
      "name": "python"
    }
  },
  "cells": [
    {
      "cell_type": "markdown",
      "source": [
```

```
"# Basic Python"

],

"metadata": {

  "id": "McSxJAwcOdZ1"

}

},

{

  "cell_type": "markdown",

  "source": [

    "## 1. Split this string"

  ],

  "metadata": {

    "id": "CU48hgo4Owz5"

  }

},

{

  "cell_type": "code",

  "source": [

    "s = \"Hi there Sam!\""

  ],

  "metadata": {

    "id": "s07c7JK7Oqt-"

  },

  "execution_count": null,

  "outputs": []

}
```

```
},
{
  "cell_type": "code",
  "source": [
    "s=\"Hi there Sam!\\n",
    "n=s.split()\\n",
    "print(n)"
  ],
  "metadata": {
    "id": "6mGVa3SQYLkb",
    "colab": {
      "base_uri": "https://localhost:8080/"
    },
    "outputId": "a403afd6-a247-477a-e05f-80412f730e3b"
  },
  "execution_count": 1,
  "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": null,
  "outputs": []
},
{
```

```
"cell_type": "code",
"source": [
    "planet = \"Earth\\n\"",
    "diameter = 12742\\n",
    "print('The diameter of {} is {} kilometers.'.format(planet,diameter))"
],
"metadata": {
    "id": "HyRyJv6CYPb4",
    "colab": {
        "base_uri": "https://localhost:8080/"
    },
    "outputId": "bf3300bf-835e-46d0-8aeb-533546541680"
},
"execution_count": 42,
"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']}]}]}\n",

    "d['k1'][3]['tricky'][3]['target'][3]"

  ],

  "metadata": {

    "id": "fcVwbCc1QrQI",

    "colab": {

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

      "height": 36

    },

    "outputId": "7977e67a-fbca-42e6-fb66-c2b7e8735606"

  },

  "execution_count": 8,

  "outputs": [

    {
```

```
"output_type": "execute_result",
"data": {
  "text/plain": [
    "'hello'"
  ],
  "application/vnd.google.colaboratory.intrinsic+json": {
    "type": "string"
  }
},
"metadata": {},
"execution_count": 8
}
]
},
{
  "cell_type": "code",
  "source": [],
  "metadata": {
    "id": "MvbkMZpXYRaw"
  },
  "execution_count": null,
  "outputs": []
},
{
  "cell_type": "markdown",
```

```
"source": [  
  "# Numpy"  
],  
"metadata": {  
  "id": "bw0vVp-9ddjv"  
}  
},  
{  
  "cell_type": "code",  
  "source": [  
    "import numpy as np"  
  ],  
  "metadata": {  
    "id": "LLiE_TYrhA1O"  
  },  
  "execution_count": 11,  
  "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 zeroes\")\n",
    "print (array)"
  ],
  "metadata": {
    "colab": {
      "base_uri": "https://localhost:8080/"
    },
    "id": "EJPHzk7JQFH1",
    "outputId": "fea3d2b9-831d-4f8a-c492-f9ab8eff7adf"
  },
  "execution_count": 13,
  "outputs": [
    {
      "output_type": "stream",
      "name": "stdout",
      "text": [
        "An array of 10 zeroes\n",
        "[0. 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",
    "print (array)"
  ],
  "metadata": {
    "id": "NHrirmgCYXvU",
    "colab": {
      "base_uri": "https://localhost:8080/"
    },
    "outputId": "e6804047-6842-4da1-d597-b8f19c1d1097"
  },
  "execution_count": 14,
  "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": "code",  
  "source": [],  
  "metadata": {  
    "id": "e4005IsTYXxx"  
  },  
  "execution_count": null,  
  "outputs": []  
},  
{  
  "cell_type": "markdown",  
  "source": [  
    "## 5. Create an array of all the even integers from 20 to 35"  
  ],  
  "metadata": {  
    "id": "gZHHdUBvrMX4"  
  }  
},  
{  
  "cell_type": "code",
```

```
"source": [  
  "a = np.arange(20,35,2)\n",  
  "print(a)"  
],  
"metadata": {  
  "id": "oAI2tbU2Yag-",  
  "colab": {  
    "base_uri": "https://localhost:8080/"  
  },  
  "outputId": "52596eb1-cbf0-415d-fc5b-896611ec7bb6"  
},  
"execution_count": 18,  
"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": [
```

```
    "x=np.arange(0,9).reshape(3,3)\n",
```

```
    "print(x)"
```

```
  ],
```

```
  "metadata": {
```

```
    "id": "tOIEVH7BYceE",
```

```
    "colab": {
```

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

```
    },
```

```
    "outputId": "2f352e74-8aca-4dc4-eeef-c467f021d593"
```

```
  },
```

```
  "execution_count": 19,
```

```
  "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",
        "print(a)\n",
        "print(b)"
    ],

```

```
"metadata": {
  "id": "rAPSw97aYfEO",
  "colab": {
    "base_uri": "https://localhost:8080/"
  },
  "outputId": "7504fd39-a8da-449b-9dd4-4204895b0c75"
},
"execution_count": 20,
"outputs": [
  {
    "output_type": "stream",
    "name": "stdout",
    "text": [
      "[1 2 3]\n",
      "[4 5 6]\n"
    ]
  }
],
{
  "cell_type": "markdown",
  "source": [
    "# Pandas"
  ],
  "metadata": {
```

```
    "id": "dIPEY9DRwZga"
  }
},
{
  "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",
    "data=[['Pavan',10],['Vamsi',20],['Sai',30]]\n",
    "a=pd.DataFrame(data,columns=['Name','Age'])\n",
    "print(a)\n"
  ],
  "metadata": {
    "id": "T5OxJRZ8uvR7",
    "colab": {
      "base_uri": "https://localhost:8080/"
    }
  },
}
```



```
"outputId": "0f3606ea-d682-4d7d-c3be-03deb39461e9"
},
"execution_count": 22,
"outputs": [
  {
    "output_type": "stream",
    "name": "stdout",
    "text": [
      "  Name Age\n",
      "0 Pavan 10\n",
      "1 Vamsi 20\n",
      "2 Sai 30\n"
    ]
  }
],
},
{
  "cell_type": "code",
  "source": [],
  "metadata": {
    "id": "xNpl_XXoYhs0"
  },
  "execution_count": null,
  "outputs": []
},
```

```

{
  "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": [
    "from datetime import date,timedelta\n",
    "sdate =date(2023,1,1) #start date\n",
    "edate=date(2023,2,11) #end date\n",
    "[sdate+timedelta(days=x)for x in range((edate-sdate).days)]\n"
  ],
  "metadata": {
    "id": "dgyC0JhVYl4F",
    "colab": {
      "base_uri": "https://localhost:8080/"
    },
    "outputId": "6b973081-6a96-4647-c039-913e37783836"
  },
  "execution_count": 46,

```

```
"outputs": [  
  {  
    "output_type": "execute_result",  
    "data": {  
      "text/plain": [  
        "[datetime.date(2023, 1, 1),\n",  
        " datetime.date(2023, 1, 2),\n",  
        " datetime.date(2023, 1, 3),\n",  
        " datetime.date(2023, 1, 4),\n",  
        " datetime.date(2023, 1, 5),\n",  
        " datetime.date(2023, 1, 6),\n",  
        " datetime.date(2023, 1, 7),\n",  
        " datetime.date(2023, 1, 8),\n",  
        " datetime.date(2023, 1, 9),\n",  
        " datetime.date(2023, 1, 10),\n",  
        " datetime.date(2023, 1, 11),\n",  
        " datetime.date(2023, 1, 12),\n",  
        " datetime.date(2023, 1, 13),\n",  
        " datetime.date(2023, 1, 14),\n",  
        " datetime.date(2023, 1, 15),\n",  
        " datetime.date(2023, 1, 16),\n",  
        " datetime.date(2023, 1, 17),\n",  
        " datetime.date(2023, 1, 18),\n",  
        " datetime.date(2023, 1, 19),\n",  
        " datetime.date(2023, 1, 20),\n",  
        ]
```

```
" datetime.date(2023, 1, 21),\n" datetime.date(2023, 1, 22),\n" datetime.date(2023, 1, 23),\n" datetime.date(2023, 1, 24),\n" datetime.date(2023, 1, 25),\n" datetime.date(2023, 1, 26),\n" datetime.date(2023, 1, 27),\n" datetime.date(2023, 1, 28),\n" datetime.date(2023, 1, 29),\n" datetime.date(2023, 1, 30),\n" datetime.date(2023, 1, 31),\n" datetime.date(2023, 2, 1),\n" datetime.date(2023, 2, 2),\n" datetime.date(2023, 2, 3),\n" datetime.date(2023, 2, 4),\n" datetime.date(2023, 2, 5),\n" datetime.date(2023, 2, 6),\n" datetime.date(2023, 2, 7),\n" datetime.date(2023, 2, 8),\n" datetime.date(2023, 2, 9),\n" datetime.date(2023, 2, 10)]\n\n},\n\n"metadata": {},\n\n"execution_count": 46
```

```

    }
  ]
},
{
  "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": "_XMC8aEt0lIB"
  },
  "execution_count": null,

```

```
"outputs": []

},

{
  "cell_type": "code",
  "source": [
    "lists=[[1,'aaa',22],[2,'bbb',25],[3,'ccc',24]]\n",
    "df=pd.DataFrame(lists,columns=['Number','FName','Age'])\n",
    "print(df)"
  ],
  "metadata": {
    "id": "knH76sDKYsVX",
    "colab": {
      "base_uri": "https://localhost:8080/"
    },
    "outputId": "be437461-680e-4f4c-ada9-c11a5e347060"
  },
  "execution_count": 32,
  "outputs": [
    {
      "output_type": "stream",
      "name": "stdout",
      "text": [
        "  Number FName Age\n",
        "0      1  aaa  22\n",
        "1      2  bbb  25\n",
```

```
        "2    3  ccc  24\n"  
    ]  
}  
]  
}  
]  
}
```