

# KSR College Of Engineering , Tiruchengode

## Department of Information Technology

NALAIYA THIRAN

AI ASSESMENT- 2

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        "import pandas as pd\n",

        "import matplotlib.pyplot as plt\n",

        "import seaborn as sns\n",

        "from sklearn.preprocessing import LabelEncoder\n",

        "from sklearn.preprocessing import MinMaxScaler\n",

        "from sklearn.model_selection import train_test_split\n",

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        "3      4  15701354 Boni        699  France Female  39  \\n",
        "4      5  15737888 Mitchell     850  Spain Female  43  \\n",
        "\\n",
        " Tenure Balance NumOfProducts HasCrCard IsActiveMember \\n",
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.94-.94 2.06-.94 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 2.05 0 2.83l4 21.41c.39.39.95.59 1.41.59.51 0 1.02-.2  
1.41-.59l7.78-7.78 2.81-2.81c.8-.78 2.07 0 2.86zM5.41 20L4 18.59l7.72-7.72 1.47 1.35L5.41  
20z\"/>\n",  
  
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"     const dataTable =\n",

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    await google.colab.kernel.invokeFunction('convertToInteractive',\n",
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    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",
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          "9997    9998   15584532    Liu      709    France  Female   36  \n",
          "9998    9999   15682355  Sabbatini    772    Germany  Male   42  \n",
          "9999   10000   15628319   Walker    792    France  Female   28  \n",
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```

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"9999    4 130142.79         1     1         0 \n",
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"9999    38190.78    0 "
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```

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"    style=\"display:none;\">>\n",
"  \n",
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```

```
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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-
.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",
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" </button>\n",
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"    fill: #174EA6;\n",
"  }\n",
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"    background-color: #3B4455;\n",
"    fill: #D2E3FC;\n",
"  }\n",
"\n",
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"    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-5129e6d2-7c74-420b-94a9-d489f3843d6d 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-5129e6d2-7c74-420b-94a9-d489f3843d6d');\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",

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Geography  Gender  Age  \\\n",
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```



```

"1      2  15647311  Hill      608  Spain Female  41  \n",
"2      3  15619304  Onio       502  France Female  42  \n",
"3      4  15701354  Boni       699  France Female  39  \n",
"4      5  15737888  Mitchell   850  Spain Female  43  \n",
"...    ...    ...    ...    ...    ...    ...    \n",
"9995   9996  15606229  Obijiaku   771  France  Male  39  \n",
"9996   9997  15569892  Johnstone  516  France  Male  35  \n",
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"9998   9999  15682355  Sabbatini  772  Germany  Male  42  \n",
"9999  10000  15628319  Walker    792  France Female  28  \n",
"\n",
"  Tenure  Balance NumOfProducts HasCrCard IsActiveMember \\n",
"0      2    0.00      1      1      1  \n",
"1      1 83807.86      1      0      1  \n",
"2      8 159660.80      3      1      0  \n",
"3      1    0.00      2      0      0  \n",
"4      2 125510.82      1      1      1  \n",
"...    ...    ...    ...    ...    ...  \n",
"9995    5    0.00      2      1      0  \n",
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"9998    3  75075.31      2      1      0  \n",
"9999    4 130142.79      1      1      0  \n",
"\n",
"  EstimatedSalary Exited \n",

```

```

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"1      112542.58    0 \n",
"2      113931.57    1 \n",
"3       93826.63    0 \n",
"4       79084.10    0 \n",
"...      ...    ... \n",
"9995     96270.64    0 \n",
"9996    101699.77    0 \n",
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```

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"df.Geography.value_counts()"

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},

"metadata": {

"needs\_background": "light"

}

}

]

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  "metadata": {
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  },
  "execution_count": 38,
  "outputs": []
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{
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  "source": [
    "X=df.iloc[:, :-1].values\n",
    "y=df.iloc[:, -1].values"
  ],
  "metadata": {
    "id": "AriNq6-mDJAh"
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  "execution_count": 39,
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{

```

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  "X.shape"
],
"metadata": {
  "colab": {
    "base_uri": "https://localhost:8080/"
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  "id": "vV0VpIM2DLp0",
  "outputId": "41a2ce57-22b7-475b-e8cc-94ec21107b5b"
},
"execution_count": 40,
"outputs": [
  {
    "output_type": "execute_result",
    "data": {
      "text/plain": [
        "(10000, 10)"
      ]
    },
    "metadata": {},
    "execution_count": 40
  }
],
}
```

```

{
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  "source": [
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    "le=LabelEncoder()\n",
    "X[:,2]=le.fit_transform(X[:,2])"
  ],
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  "outputs": []
},
{
  "cell_type": "code",
  "source": [
    "print(X)"
  ],
  "metadata": {
    "colab": {
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    },
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    "outputId": "0c303dfb-46ed-49e8-f1d5-f2a8f9527b2f"
  },

```

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"outputs": [
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    "output_type": "stream",
    "name": "stdout",
    "text": [
      "[[619 0 0 ... 1 1 101348.88]\n",
      " [608 1 0 ... 0 1 112542.58]\n",
      " [502 0 0 ... 1 0 113931.57]\n",
      "... \n",
      " [709 0 0 ... 0 1 42085.58]\n",
      " [772 2 1 ... 1 0 92888.52]\n",
      " [792 0 0 ... 1 0 38190.78]]\n"
    ]
  }
],
{
  "cell_type": "code",
  "source": [
    "scalerx = MinMaxScaler()"
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  "metadata": {
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}
```

```
"execution_count": 43,
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},
{
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  ],
  "metadata": {
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  },
  "execution_count": 44,
  "outputs": []
},
{
  "cell_type": "code",
  "source": [
    "X_train, X_test, y_train, y_test = train_test_split(X,y,test_size=0.2, random_state=0)"
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  "metadata": {
    "id": "csjvdK6hDZnl"
  },
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  "outputs": []
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```
{
  "cell_type": "code",
  "source": [
    "stdscaler = StandardScaler()\n",
    "X_train = stdscaler.fit_transform(X_train)\n",
    "X_test = stdscaler.transform(X_test)"
  ],
  "metadata": {
    "id": "tX0KoFW9DbeV"
  },
  "execution_count": 46,
  "outputs": []
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]
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