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 "2 41 F
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 "3 36 F
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href=https://colab.research.google.com/notebooks/data_table.ipynb>data table notebook</a>'\n",
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01b[0m\u001b[0;34m,\u001b[0m\u001b[0;34m]T4U\_measured'\u001b[0m\u001b[0;34m,\u001b[0]]])
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\u001b[0;34m)\u001b[0m\u001b[0;34m\u001b[0m\u001b[0;34m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u
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;34m,\u001b[0m\u001b[0;34m\u001b[0m\u001b[0;34m\u001b[0m\u001b[0]]]]]
                                         \\n\u001b[0;32m--> 311\u001b[0;31m
310\u001b[0m
\u001b[0;32mreturn\u001b[0m]
1b[0m\u001b[0;34m,\u001b[0m
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\u001b[0;32mreturn\u001b[0m]
\u001b[0mwrapper\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b]]]]
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[1;32m 4956\u001b[0m
                                                                                                                                                                  \"\"\n\u001b[0;32m->4957\u001b[0;31m]
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super().drop(\n\u001b[0m\u001b[1;32m 4958\u001b[0m
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                                     "\u001b[0;32m/usr/local/lib/python3.9/dist-packages/pandas/core/generic.py\u001b[0m in
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\u001b[0;32mif\u001b[0m
1b[0m\u001b[0m\n",
                                    "\u001b[0;32m/usr/local/lib/python3.9/dist-packages/pandas/core/generic.py\u001b[0m in
\u001b[0;36m_drop_axis\u001b[0;34m(self, labels, axis, level, errors, consolidate,
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\u001b[0;32m/usr/local/lib/python3.9/dist-packages/pandas/core/generic.py\u001b[0m in \u001b[0;36m\_drop\_axis\u001b[0;34m(self, labels, axis, level, errors, consolidate, only\_slice)\u001b[0m\n\u001b[0m\n\u001b[0m]\u001b[0m \u001b[0mmew\_axis\u001b[0m \u001b[0m \u001b[0m\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m\u001b[0m]\u001b[0m

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packages/pandas/core/indexes/base.py\u001b[0m in \u001b[0;36mdrop\u001b[0;34m(self, labels,
errors)\u001b[0m\n\u001b[1;32m 6659\u001b[0m
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n\u001b[1;32m 6663\u001b[0m
                                                                                                                                                                                                                                                                                                                                                           \u001b[0;32mreturn\u001b[0m
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       11
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       11
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href=https://colab.research.google.com/notebooks/data_table.ipynb>data table notebook</a>'\n",
               + ' to learn more about interactive tables.';\n",
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           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.guerySelector('#df-c46cd4ea-e54f-4340-b4fe-11ee95ed1cc1 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-c46cd4ea-e54f-4340-b4fe-
11ee95ed1cc1');\n",
              const dataTable =\n",
```

```
await google.colab.kernel.invokeFunction('convertToInteractive',\n",
       11
                                      [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",
       11
              dataTable['output_type'] = 'display_data';\n",
       11
              await google.colab.output.renderOutput(dataTable, element);\n",
       11
              const docLink = document.createElement('div');\n",
       11
              docLink.innerHTML = docLinkHtml;\n",
       11
              element.appendChild(docLink);\n",
       11
             }\n",
            </script>\n",
       " </div>\n",
       " </div>\n",
      ]
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     "metadata": {},
     "execution count": 23
    }
   ]
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   "source": [
    "v"
   ],
```

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},
"execution_count": 24,
"outputs": [
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  "data": {
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    "1
         840801014\n",
    "2
         840801042\n",
    "3
         840803046\n",
    "4
         840803047\n",
         ... \n",
    "9167 870119022\n",
    "9168 870119023\n",
    "9169 870119025\n",
    "9170 870119027\n",
    "9171 870119035\n",
   "Name: patient_id, Length: 9172, dtype: int64"
  ]
  },
  "metadata": {},
  "execution_count": 24
}
]
```

```
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{
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 "source": [
  "x['sex'].unique()"
 ],
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 },
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   "data": {
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    ]
   },
   "metadata": {},
   "execution_count": 26
  }
 ]
},
 "cell_type": "code",
 "source": [
  "x['sex'].replace(np.nan,'F',inplace=True)"
```

```
],
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    },
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    "outputId": "67cbe674-84cd-497e-d6a4-ed6f1bd405a0"
   },
   "execution_count": 27,
   "outputs": [
    {
     "output_type": "stream",
     "name": "stderr",
     "text": [
      "<ipython-input-27-720c3f96a604>:1: SettingWithCopyWarning: \n",
      "A value is trying to be set on a copy of a slice from a DataFrame\n",
      "\n",
      "See the caveats in the documentation: https://pandas.pydata.org/pandas-
docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy\n",
      " x['sex'].replace(np.nan,'F',inplace=True)\n"
     ]
    }
   ]
   "cell_type": "code",
   "source": [
    "x['sex'].value_counts()"
   ],
   "metadata": {
    "colab": {
```

```
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 },
 "execution_count": 28,
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   "data": {
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     "M 2792\n",
     "Name: sex, dtype: int64"
    ]
   },
   "metadata": {},
   "execution_count": 28
  }
]
},
{
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 "source": [
  " #Converting the data type\n",
  "\n",
  "x['age']=x['age'].astype('float')\n",
  "x['TSH']=x['TSH'].astype('float')\n",
  x['T3']=x['T3'].astype('float')\n",
  "x['TT4']=x['TT4'].astype('float')\n",
  "x['T4U']=x['T4U'].astype('float')\n",
```

```
"x['FTI']=x['FTI'].astype('float') \n",
  "x['TBG']=x['TBG'].astype('float')"
 ],
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 },
 "execution_count": 54,
 "outputs": []
},
{
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 "source": [
  "x.info()"
 ],
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  },
  "id": "mf7ras27-OEL",
  "outputId": "cdb309dd-9344-4857-d8e5-a6aee67e4cda"
 },
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   "name": "stdout",
   "text": [
    "<class 'pandas.core.frame.DataFrame'>\n",
    "RangeIndex: 9172 entries, 0 to 9171\n",
    "Data columns (total 30 columns):\n",
    "# Column
                        Non-Null Count Dtype \n",
```

```
"--- \n",
```

- "0 age 9172 non-null float64\n",
- "1 sex 9172 non-null object \n",
- "2 on\_thyroxine 9172 non-null object \n",
- "3 query\_on\_thyroxine 9172 non-null object \n",
- "4 on\_antithyroid\_meds 9172 non-null object \n",
- "5 sick 9172 non-null object \n",
- "6 pregnant 9172 non-null object \n",
- "7 thyroid\_surgery 9172 non-null object \n",
- "8 I131\_treatment 9172 non-null object \n",
- "9 query\_hypothyroid 9172 non-null object \n",
- "10 query\_hyperthyroid 9172 non-null object \n",
- " 11 lithium 9172 non-null object \n",
- " 12 goitre 9172 non-null object \n",
- " 13 tumor 9172 non-null object \n",
- " 14 hypopituitary 9172 non-null object \n",
- "15 psych 9172 non-null object \n",
- " 16 TSH\_measured 9172 non-null object \n",
- " 17 TSH 8330 non-null float64\n",
- " 18 T3\_measured 9172 non-null object \n",
- " 19 T3 6568 non-null float64\n",
- " 20 TT4\_measured 9172 non-null object \n",
- " 21 TT4 8730 non-null float64\n",
- " 22 T4U\_measured 9172 non-null object \n",
- " 23 T4U 8363 non-null float64\n",
- " 24 FTI\_measured 9172 non-null object \n",
- " 25 FTI 8370 non-null float64\n",
- " 26 TBG\_measured 9172 non-null object \n",
- " 27 TBG 349 non-null float64\n",
- "28 referral\_source 9172 non-null object \n",
- " 29 target 9172 non-null object \n",

```
"dtypes: float64(7), object(23)\n",
    "memory usage: 2.1+ MB\n"
   ]
  }
]
},
{
 "cell_type": "code",
 "source": [
  "#Encoding the categorical data \n",
  "#Encoding the independent (output)\n",
  "from sklearn.preprocessing import OrdinalEncoder,LabelEncoder\n",
  "#Categorical data\n",
  "\n",
  "\n",
  "Ordinal_Encoder=OrdinalEncoder(dtype='int64')\n",
  "x.iloc[:,1:16]=Ordinal_Encoder.fit_transform(x.iloc[:,1:16])\n",
  "#Ordinal_Encoder.fit_transform(x[['sex']])"
],
 "metadata": {
  "colab": {
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  },
  "id": "XUOBAjht-SUE",
  "outputId": "530a8d0b-8534-461a-a125-46b9adee7092"
},
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 "outputs": [
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   "name": "stderr",
```

```
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      "A value is trying to be set on a copy of a slice from a DataFrame.\n",
      "Try using .loc[row_indexer,col_indexer] = value instead\n",
      "\n",
      "See the caveats in the documentation: https://pandas.pydata.org/pandas-
docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy\n",
      " x.iloc[:,1:16]=Ordinal_Encoder.fit_transform(x.iloc[:,1:16])\n"
     ]
    }
   ]
  },
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    "x"
   ],
   "metadata": {
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     "height": 487
    },
    "id": "glkcFy-WApuJ",
    "outputId": "b167eff7-5436-45af-f33f-7d5ac1a6f04f"
   },
   "execution_count": 32,
   "outputs": [
    {
     "output_type": "execute_result",
     "data": {
      "text/plain": [
```

```
age sex on_thyroxine query_on_thyroxine on_antithyroid_meds sick \\\n",
"9171 31.0 1
                   0
                             0
                                        0 0 \n",
"9170 47.0 0
                   0
                             0
                                        0 0 \n",
"9169 69.0 1
                   0
                             0
                                        0 0 \n",
"9168 22.0 1
                   0
                             0
                                        0 0 \n",
"9167 56.0 1
                   0
                             0
                                        0 0 \n",
"... ... ...
                                 ... \n",
            ...
                       ...
"5 60.0 0
                 0
                           0
                                      0 0 \n",
"4 32.0 0
                 0
                           0
                                      0 0 \n",
"3 36.0 0
                 0
                           0
                                      0 0 \n",
"2 41.0 0
                 0
                           0
                                      0 0 \n",
"1 29.0 0
                 0
                           0
                                      0 0 \n",
"\n",
" pregnant thyroid_surgery I131_treatment query_hypothyroid ... \\\n",
"9171
         0
                  0
                          0
                                    1 ... \n",
                                    0 ... \n",
"9170
         0
                  0
                          0
                                    0 ... \n",
"9169
         0
                  0
                          0
"9168
         0
                  0
                          0
                                    0 ... \n",
"9167
         0
                  0
                          0
                                    0 ... \n",
"...
                               ... \n",
                      ...
"5
       0
                0
                        0
                                  0 ... \n",
"4
       0
                0
                        0
                                  0 ... \n",
"3
       0
                0
                        0
                                  0 ... \n",
"2
                                  0 ... \n",
       0
                0
                        0
"1
                                  0 ... \n",
       0
                0
                        0
"\n",
    TT4 T4U_measured T4U FTI_measured FTI TBG_measured TBG \\\n",
"9171 66.0
                t 1.02
                            t 65.0
                                       f NaN \n",
"9170 75.0
                t 0.85
                            t 88.0
                                       f NaN \n",
"9169 113.0
                t 1.27
                            t 89.0
                                        f NaN \n",
"9168 91.0
                t 0.92
                            t 99.0
                                       f NaN \n",
```

```
"9167 64.0
                 t 0.83 t 77.0
                                    f NaN \n",
                     ... ... ... \n",
            ... ...
 "5
      NaN
                f NaN
                            f NaN
                                        t 26.0 \n",
 "4
      NaN
                f NaN
                            f NaN
                                        t 36.0 \n",
 "3
      NaN
                f NaN
                            f NaN
                                        t 26.0 \n",
 "2
                                        t 11.0 \n",
      NaN
                f NaN
                            f NaN
 "1 128.0
                                        f NaN \n",
                f NaN
                            f NaN
 "\n",
 " referral_source target patient_id \n",
 "9171
           other - 870119035 \n",
 "9170
           other - 870119027 \n",
 "9169
            SVI I 870119025 \n",
 "9168
            SVI
                 - 870119023 \n",
 "9167
            SVI
                 - 870119022 \n",
 "...
          ... ... \n",
 "5
          other - 840803048 \n",
 "4
          other
                S 840803047 \n",
 "3
          other
                - 840803046 \n",
 "2
          other
                - 840801042 \n",
 "1
          other
                - 840801014 \n",
 "\n",
 "[9171 rows x 31 columns]"
],
"text/html": [
 "\n",
 " <div id=\"df-33ff743d-3f97-406b-8b19-f143325fb952\">\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 thody tr th \{\n'',
  vertical-align: top;\n",
" }\n",
"\n",
" .dataframe thead th {\n",
  text-align: right;\n",
" }\n",
"</style>\n",
"\n",
" <thead>\n",
" \n",
  \n",
  <th>age\n",
  <th>sex\n",
  <th>on_thyroxine\n",
  query_on_thyroxine\n",
  on_antithyroid_meds\n",
  <th>sick\n",
  pregnant\n",
  thyroid_surgery\n",
  131_treatment
,",
  query_hypothyroid\n",
  \...\n",
  TT4\n",
  <th>T4U_measured\n",
  <th>T4U\n",
  FTI_measured\n",
  <th>FTI\n",
  TBG_measured\n",
```

```
" <th>TBG</th>\n",
```

- " <th>referral\_source\n",
- " target\n",
- " patient\_id\n",
- " \n",
- " </thead> $\n$ ",
- "  $\n"$ ,
- " \n",
- " 9171\n",
- " 31.0\n",
- " 1\n",
- " 0\n",
- " 1\n",
- " ...\n",
- " 66.0\n",
- " t\n",
- " 1.02\n",
- " t\n",
- " 65.0\n",
- " f\n",
- " NaN\n",
- " <td>other\n",
- " -\n",
- " 870119035\n",
- " \n",

```
" \n",
```

- " 9170\n",
- " 47.0\n",
- " 0\n",
- " ...\n",
- " 75.0\n",
- "  $t\n",$
- " 0.85\n",
- "  $t\n",$
- " 88.0\n",
- "  $f\n",$
- " NaN\n",
- " <td>other\n",
- "  $-\n",$
- " 870119027\n",
- " \n",
- " \n",
- " 9169\n",
- " 69.0\n",
- " 1\n",
- " 0\n",
- " 0\n",
- " 0\n",

```
" 0\n",
```

- " 0\n",
- " 0\n",
- " 0\n",
- " 0\n",
- " ...\n",
- " 113.0\n",
- " t\n",
- " 1.27\n",
- "  $t\n",$
- " 89.0\n",
- "  $f\n",$
- " NaN\n",
- "  $SVI\n"$ ,
- "  $I\n",$
- " 870119025\n",
- " \n",
- " \n",
- " 9168\n",
- " 22.0\n",
- " 1\n",
- " 0\n",
- " ...\n",
- " 91.0\n",

```
" t\n",
```

- " 0.92\n",
- " t\n",
- " 99.0\n",
- " f\n",
- " <td>NaN\n",
- "  $SVI\n"$ ,
- " -\n",
- " 870119023\n",
- " \n",
- " \n",
- " 9167\n",
- " 56.0\n",
- " 1\n",
- " 0\n",
- "  $0 \n$ ",
- " 0\n",
- " 0\n",
- " ...\n",
- " 64.0\n",
- " t\n",
- " 0.83\n",
- " t\n",
- " 77.0\n",
- " f\n",
- " NaN\n",
- "  $SVI\n"$ ,

- " -\n",
- " 870119022\n",
- " \n",
- " \n",
- " >...\n",
- " ...\n",
- "  $...\n",$
- " ...\n",
- "  $...\n",$
- " ...\n",
- " ...\n",
- " ...\n",
- " \n",
- " \n",
- " 5\n",
- " 60.0\n",
- " 0\n",

```
" 0\n",
```

- " 0\n",
- " ...\n",
- " NaN\n",
- "  $f\n",$
- "  $NaN\n"$ ,
- " f\n",
- " NaN\n",
- " t\n",
- "  $26.0 \n$ ",
- " <td>other\n",
- " -\n",
- " 840803048\n",
- " \n",
- " \n",
- " 4\n",
- " 32.0\n",
- " 0\n",

- " 0\n",
- " ...\n",
- " NaN\n",
- " f n",
- " NaN\n",
- " f\n",
- " NaN\n",
- " t\n",
- " 36.0\n",
- " <td>other\n",
- " S\n",
- " 840803047\n",
- " \n",
- " \n",
- " 3\n",
- " 36.0\n",
- " 0\n",
- " ...\n",
- " NaN\n",
- " f\n",
- " NaN\n",
- " f\n",
- " NaN\n",

```
" t\n",
```

- " 26.0\n",
- " other\n",
- " -\n",
- " 840803046\n",
- " \n",
- " \n",
- " 2\n",
- " 41.0\n",
- " 0\n",
- " ...\n",
- " NaN\n",
- "  $f \n$ ",
- " NaN\n",
- " f\n",
- " NaN\n",
- " t\n",
- " 11.0\n",
- " <td>other\n",
- " -\n",
- " 840801042\n",
- " \n",
- " \n",

```
1\n",
       29.0\n",
       0\n",
       0\n",
       0\n",
       0\n",
       0\n",
       0\n",
       0\n",
       0\n",
       0\n",
       \n",
       128.0\n",
       f\n",
       NaN\n",
       f\n",
       NaN\n",
       f\n",
       NaN\n",
       other\n",
       -\n",
       840801014\n",
    " \n",
    " \n",
    "\n",
    "9171 rows × 31 columns\n",
    "</div>\n",
       <button class=\"colab-df-convert\" onclick=\"convertToInteractive('df-33ff743d-3f97-
406b-8b19-f143325fb952')\"\n",
    11
          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-.94-2.06-.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-.59|7.78-7.78 2.81-2.81c.8-.78.8-2.07 0-2.86zM5.41 20L4 18.59|7.72-7.72 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: Opx 1px 2px rgba(60, 64, 67, 0.3), Opx 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.guerySelector('#df-33ff743d-3f97-406b-8b19-f143325fb952 button.colab-
df-convert');\n",
             buttonEl.style.display =\n",
              google.colab.kernel.accessAllowed?'block': 'none';\n",
       "\n",
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              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",
       "
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       11
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       11
              await google.colab.output.renderOutput(dataTable, element);\n",
       11
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       11
              docLink.innerHTML = docLinkHtml;\n",
       11
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             }\n",
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    "4 32.0 0
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    on_antithyroid_meds\n",
    <th>sick\n",
    pregnant\n",
    thyroid_surgery\n",
```

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```

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- " FTI\_measured\n",
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- " target\n",
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- " \n",
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 $SVI\n",$ 

9168\n",

22.0\n",

 $1\n",$ 

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870119025\n",

||n",

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" \n",

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89.0\n",

113.0\n",

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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
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.2 1.41-.59|7.78-7.78 2.81-2.81c.8-.78.8-2.07 0-2.86zM5.41 20L4 18.59|7.72-7.72 1.47 1.35L5.41
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367ccf05167f');\n",
       "
              const dataTable =\n",
       11
               await google.colab.kernel.invokeFunction('convertToInteractive',\n",
       11
                                      [key], {});\n",
       п
              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",
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              await google.colab.output.renderOutput(dataTable, element);\n",
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          ... \n",
     "9167 870119022\n",
     "9168 870119023\n",
     "9169 870119025\n",
     "9170 870119027\n",
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```

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     29 F
               f
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    41 F
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                         f
                                   f f \n",
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                      f NaN
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"...
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            t 64.0
                        t 0.83
                                    t 77.0
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 "9168
                        t 0.92
                                    t 99.0
                                                f \n",
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                        t 1.27
                                    t 89.0
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                        t 0.85
                                    t 88.0
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            t 66.0
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                        t 1.02
                                    t 65.0
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               other
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       t\n",
       65.0\n",
       f\n",
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       other\n",
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4c49-aaa3-fc5fbbd594c8')\"\n",
    11
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          style=\"display:none;\">\n",
        \n",
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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-.59|7.78-7.78 2.81-2.81c.8-.78.8-2.07 0-2.86zM5.41 20L4 18.59|7.72-7.72 1.47 1.35L5.41
20z\"/>\n",
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0.15);\n",
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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-8c57d2b9-dda1-4c49-aaa3-
fc5fbbd594c8');\n",
              const dataTable =\n",
               await google.colab.kernel.invokeFunction('convertToInteractive',\n",
                                      [key], {});\n",
              if (!dataTable) return;\n",
```

```
"\n",
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               '<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",
       11
              dataTable['output_type'] = 'display_data';\n",
       11
              await google.colab.output.renderOutput(dataTable, element);\n",
       11
              const docLink = document.createElement('div');\n",
       11
              docLink.innerHTML = docLinkHtml;\n",
       11
              element.appendChild(docLink);\n",
       11
            }\n",
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  "y_train.value_counts()"
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  },
  "id": "kwZLoVDmC7Kf",
  "outputId": "f6e79f37-66ba-4862-e62a-8c4f1ae2abd7"
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     "851018026 1\n",
```

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  "x_test_bal,y_test_bal=os.fit_resample(x_test,y_test)"
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"\u001b[0;31mValueError\u001b[0m]

Traceback (most recent call last)",

"\u001b[0;32m<ipython-input-60-483abc55c779>\u001b[0m in \u001b[0;36m<cell line:
2>\u001b[0;34m()\u001b[0m\n\u001b[1;32m 1\u001b[0m \u001b[0m \u001b[0m \u001b[0m]
\u001b[0;34m=\u001b[0m]
\u001b[0mSMOTE\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u0
```

 $\label{lem:continuou} $$ \u001b[0;32m/usr/local/lib/python3.9/dist-packages/imblearn/base.py\\ \u001b[0m in \\ \u001b[0;36mfit_resample\\ \u001b[0;34m(self, X, y)\\ \u001b[0m\\ \u001b[1;32m 201\\ \u001b[0m \u001b[0m]] $$$ 

 $\label{lem:u001b} $$ \u001b[0m\u001b[0;34m(\u001b[0m\u001b[0;34m)\u001b[0m\u001b[0$ 

 $\u001b[0;32mdef\u001b[0m]$ 

 $\label{lem:control_c$ 

 $\label{lem:continuou} $$ \u001b[0;32m/usr/local/lib/python3.9/dist-packages/imblearn/base.py\u001b[0m in \u001b[0;36mfit_resample\u001b[0;34m(self, X, y)\u001b[0m\n\u001b[1;32m 80\u001b[0m \u001b[0m\$ 

```
m\u001b[0m\n\u001b[0;32m---> 82\u001b[0;31m]]
\u001b[0mbinarize_y\u001b[0m \u001b[0;34m=\u001b[0m]]]
\u001b[0mself\u001b[0m\u001b[0;34m.\u001b[0m\u001b[0m check X y\u001b[0m\u001b[0;34m
(\u001b[0m\u001b[0mX\u001b[0m\u001b[0;34m,\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u00
\u001b[0my\u001b[0m\u001b[0;34m)\u001b[0m\u001b[0;34m\u001b[0;34m\u001b[0
m\u001b[0m\n\u001b[0m\u001b[1;32m 83\u001b[0m
\u001b[0;34m\u001b[0m\u001b[0m\n\u001b[1;32m 84\u001b[0m
                                                                                                                                               self.sampling_strategy_ =
check_sampling_strategy(\n",
            "\u001b[0;32m/usr/local/lib/python3.9/dist-packages/imblearn/base.py\u001b[0m in
\u001b[0;36m check X y\u001b[0;34m(self, X, y, accept sparse)\u001b[0m\n\u001b[1;32m
                                          \u001b[0maccept_sparse\u001b[0m \u001b[0;34m=\u001b[0m
\u001b[0;34m\u001b[0m\u001b[0;34m]\u001b[0;34m\u001b[0;34m\u001b[0;34m]\u001b[0;34m]\u001b[0;34m\u001b[0;34m]\u001b[0;34m]\u001b[0;34m\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m]\u001b[0;34m
u001b[0m\u001b[0m\n\u001b[1;32m 155\u001b[0m
\u001b[0my\u001b[0m\u001b[0;34m,\u001b[0m\u001b[0mbinarize_y\u001b[0mbinarize_y]]] = 0.001b[0my\u001b[0m]] = 0.001b[0m]
\u001b[0;34m=\u001b[0m
\u001b[0mcheck target type\u001b[0m\u001b[0;34m(\u001b[0m\u001b[0my\u001b[0m\u001b[0
;34m,\u001b[0m
u001b[0;34m] \\ u001b[0m\\u001b[0;34m\\u001b[0;34m\\u001b[0;34m\\u001b[0;34m\\u001b[0;34m\\u001b[0;34m\\u]]
32m--> 156\u001b[0;31m
                                                          \u001b[0mX\u001b[0m\u001b[0;34m,\u001b[0m
\u001b[0my\u001b[0m \u001b[0;34m=\u001b[0m
\u001b[0mself\u001b[0m\u001b[0;34m.\u001b[0m\u001b[0m validate data\u001b[0m\u001b[0;3
4m(\u001b[0m\u001b[0mX\u001b[0m\u001b[0;34m,\u001b[0m
\u001b[0my\u001b[0m\u001b[0;34m,\u001b[0m
\u001b[0mreset\u001b[0m\u001b[0;34m=\u001b[0m\u001b[0;32mTrue\u001b[0m\u001b[0;34m],\u001b[0m\u001b[0m\u001b[0m\u001b[0m]]]]]
u001b[0m
m\u001b[1;32m 157\u001b[0m
                                                                         \u001b[0;32mreturn\u001b[0m
\u001b[0mbinarize y\u001b[0m\u001b[0;34m\u001b[0m\u001b[0;34m\u001b[0;34m\u001b[0m\u001b[0m\u]]]])
001b[1;32m 158\u001b[0m\u001b[0;34m\u001b[0m\u001b[0m\n",
            "\u001b[0;32m/usr/local/lib/python3.9/dist-packages/sklearn/base.py\u001b[0m in
\u001b[0;36m_validate_data\u001b[0;34m(self, X, y, reset, validate_separately,
**check_params)\u001b[0m\n\u001b[1;32m 582\u001b[0m
                                                                                                                                          \u001b[0my\u001b[0m
\u001b[0;34m=\u001b[0m
u001b[0m
\u001b[0minput\_name\u001b[0m\u001b[0;34m=\u001b[0m\u001b[0;34m\"y\"\u001b[0m\u001b[0m\u001b[0]]]])
0;34m,\u001b[0m
\u001b[0;34m**\u001b[0m\u001b[0mcheck_y_params\u001b[0m\u001b[0;34m)\u001b[0m\u001b
[0;34m\u001b[0m\u001b[0;34m\u001b[0m\u001b[0m\n\u001b[1;32m 583\u001b[0m\u001b[0m\u001b[1;32m 583\u001b[0m\u001b[0m\u001b[1]]]]]]]]
1b[0m\u001b[0m\n\u001b[0;32m--> 584\u001b[0;31m
```

\u001b[0my\u001b[0m\u001b[0;34m)\u001b[0m\u001b[0;34m\u001b[0;34m\u001b[0

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\u001b[0mX\u001b[0m\u001b[0;34m,\u001b[0m \u001b[0my\u001b[0m \u001b[0;34m=\u001b[0m \u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[0
```

 $\label{lem:continuou} $$ \u001b[0;34m**\u001b[0m\u001b[$ 

\u001b[0mX\u001b[0m\u001b[0;34m,\u001b[0m

 $\label{libpython3.9/dist-packages/sklearn/utils/validation.py\\ u001b[0;32m/usr/local/lib/python3.9/dist-packages/sklearn/utils/validation.py\\ u001b[0;36mcheck_X_y\\ u001b[0;34m(X, y, accept_sparse, accept_large_sparse, dtype, order, copy, force_all_finite, ensure_2d, allow_nd, multi_output, ensure_min_samples, ensure_min_features, y_numeric, estimator)\\ u001b[0m\\ n\\ u001b[1;32m 1105\\ u001b[0m \\ u001b[0m\\ u001b[0m] u001b[0m\\ u001b[0m] u001b[0m\\ u001b[0m] u001b[0m\\ u001b[0m] u001b[0m\\ u001b[0m] u001b[0m\\ u001b[0m] u001b[0m] u001b[0m\\ u001b[0m] u001b[0$ 

 $\label{lem:condition} $$ ''u001b[0;32m/usr/local/lib/python3.9/dist-packages/sklearn/utils/validation.py\\u001b[0min\\u001b[0;36mcheck_array\\u001b[0;34m(array, accept_sparse, accept_large_sparse, dtype, order, copy, force_all_finite, ensure_2d, allow_nd, ensure_min_samples, ensure_min_features, estimator, input_name)\\u001b[0m\\n\\u001b[1;32m 877\\u001b[0m \\u001b[0;34m=\\u001b[0m])\\$ 

 $\u001b[0mdtype\u001b[0m\u001b[0;34m,\u001b[0m\u001b[0m\u001b]]]]$ 

 $\label{lem:condition} $$ \u001b[0m\u001b[0;34m=\u001b[0m\u001b[0;32mFalse\u001b[0m\u001b[0;34m)\u001b[0m\u001b[0;34m\u001b[0m\u$ 

```
"\u001b[0;32m/usr/local/lib/python3.9/dist-packages/sklearn/utils/_array_api.py\u001b[0m
in \u001b[0;36m asarray with order\u001b[0;34m(array, dtype, order, copy,
xp)\u001b[0m\n\u001b[1;32m 183\u001b[0m \u001b[0;32mif\u001b[0m \u001b[0;32mif\u001b[0m \u001b[0m \u001b
\u001b[0mxp\u001b[0m\u001b[0;34m.\u001b[0m\u001b[0m__name__\u001b[0m
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4m,\u001b[0m
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2065\u001b[0m\u001b[0m\u001b[0m\u001b[0m\u001b[1;32m 2066\u001b[0m def
 __array_wrap__(\n",
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]

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1>\u001b[0;34m()\u001b[0m\n\u001b[0;32m----> 1\u001b[0;31m\u001b[0;32mfrom\u001b[0m]]]
```

 $\u001b[0;32mimport\u001b[0m]$ 

 $\label{lem:control_c$ 

 $\label{lem:control_c$ 

 $\begin{tabular}{ll} $$ \u001b[0mx_test_bal\\u001b[0m\\u0$ 

 $"\u001b[0;31m] mportError\u001b[0m: cannot import name 'StandardScalar' from 'sklearn.preprocessing' (/usr/local/lib/python3.9/dist-packages/sklearn/preprocessing/__init__.py)",$ 

```
"\",
\"\u001b[0;31m-----\\u001b[0;32m\\nNOTE: If your import is failing due to a missing package, you can\\nmanually install dependencies using either !pip or !apt.\\n\nTo view examples of installing some common dependencies, click the\\n\"Open Examples\" button below.\\n\u001b[0;31m-----\\u001b[0m\\n"]
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\u001b[0mx test bal\u001b[0m\u001b[0;34m=\u001b[0m\u001b[0mpd\u001b[0m\u001b[0;34m]]])
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0 m \\ u 0 0 1 b [0;34m] \\ u 0 0 1 b [0m \\ u 
lumns \\ \ u001b[0m\\ \ u001b[0;34m\\ \ u001b[0;34m\\ \ u001b[0;34m\\ \ u001b[0;34m\\ \ u001b[0;34m\\ \ u001b[0;34m] \ u001b[0;34m] \\ \ u001b[0;34m
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\u001b[0msklearn\u001b[0m\u001b[0m\u001b[0m\u001b]0m\u001b]]
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01b[0m\u001b[0;34m,\u001b[0m\u001b[0m]\u001b[0m\u001b[0m\u001b[0;34m,\u001b[0m\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b[0m]\u001b
b[0m\u001b[0;34m\u001b[0m\u001b[0;34m\u001b[0m\u001b[0m\n\u001b[0m",
                      "\u001b[0;31mNameError\u001b[0m: name 'rtf' is not defined"
                  ]
              }
          ]
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} ] }