

## **Pandas - Confusion Matrix**

```

import pandas as pd
import numpy as np

df = pd.DataFrame([[38.0, 2.0, 18.0, 22.0, 21, np.nan],[19, 439, 6, 452,
226,232]]),
                index=pd.Index(['Tumour (Positive)', 'Non-Tumour
(Negative)'], name='Actual Label:'),
                columns=pd.MultiIndex.from_product(['Decision Tree',
'Regression', 'Random'],['Tumour', 'Non-Tumour']), names=['Model:',
'Predicted:'])

s = df.style.format('{:.0f}').hide(['Random', 'Tumour'), ('Random', 'Non-
Tumour')], axis="columns")

cell_hover = { # for row hover use <tr> instead of <td>
    'selector': 'td:hover',
    'props': [('background-color', '#ffffb3')]
}
index_names = {
    'selector': '.index_name',
    # darkgray
    'props': 'font-style: italic; color: #a9a9a9; font-weight:normal;'
}
headers = {
    'selector': 'th:not(.index_name)',
    'props': 'background-color: #000066; color: white;'
}
s.set_table_styles([cell_hover, index_names, headers])

s.set_table_styles([ # create internal CSS classes
    {'selector': '.true', 'props': 'background-color: #e6ffe6;'},
    {'selector': '.false', 'props': 'background-color: #ffe6e6;'},
], overwrite=False)
cell_color = pd.DataFrame([['true ', 'false ', 'true ', 'false '],
    ['false ', 'true ', 'false ', 'true ']],
    index=df.index,
    columns=df.columns[:4])
s.set_td_classes(cell_color)
s.set_table_styles([ # create internal CSS classes
    {'selector': '.border-red', 'props': 'border: 2px dashed red;'},
    {'selector': '.border-green', 'props': 'border: 2px dashed green;'},
], overwrite=False)
cell_border = pd.DataFrame([['border-green ', ' ', ' ', 'border-red '],
    [' ', ' ', ' ', ' ']],
    index=df.index,
    columns=df.columns[:4])
s.set_td_classes(cell_color + cell_border)

```

| <i>Model:</i>         | Decision Tree     |            | Regression |            |
|-----------------------|-------------------|------------|------------|------------|
|                       | <i>Predicted:</i> |            |            |            |
|                       | Tumour            | Non-Tumour | Tumour     | Non-Tumour |
| <i>Actual Label:</i>  |                   |            |            |            |
| Tumour (Positive)     | 38                | 2          | 18         | 22         |
| Non-Tumour (Negative) | 19                | 439        | 6          | 452        |