

In [ ]:

# Random Forest Classification

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In [212... import numpy as np
import matplotlib.pyplot as plt
import pandas as pd
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In [213... dataset = pd.read_csv(r"E:\Data Science & AI\Dataset files\Social_Network_Ads.csv")
X = dataset.iloc[:, [2, 3]].values
y = dataset.iloc[:, -1].values
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In [214... # Splitting The dataset into the Trainingset and TEST SET

from sklearn.model_selection import train_test_split
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size = 0.25, random_state=0)
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In [215... # Feature Scalling

from sklearn.preprocessing import StandardScaler
sc = StandardScaler()
X_train = sc.fit_transform(X_train)
X_test = sc.transform(X_test)
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In [216... # Training the Random Forest Classification model on the Training set

from sklearn.ensemble import RandomForestClassifier
classifier = RandomForestClassifier(n_estimators = 10, criterion = 'entropy', random_state=0)
classifier.fit(X_train, y_train)
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Out[216... ▼ RandomForestClassifier
RandomForestClassifier(criterion='entropy', n_estimators=10, random_state=0)
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In [217... # Predicting the Test set results

y_pred = classifier.predict(X_test)
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In [218... # Making the Confusion Matrix

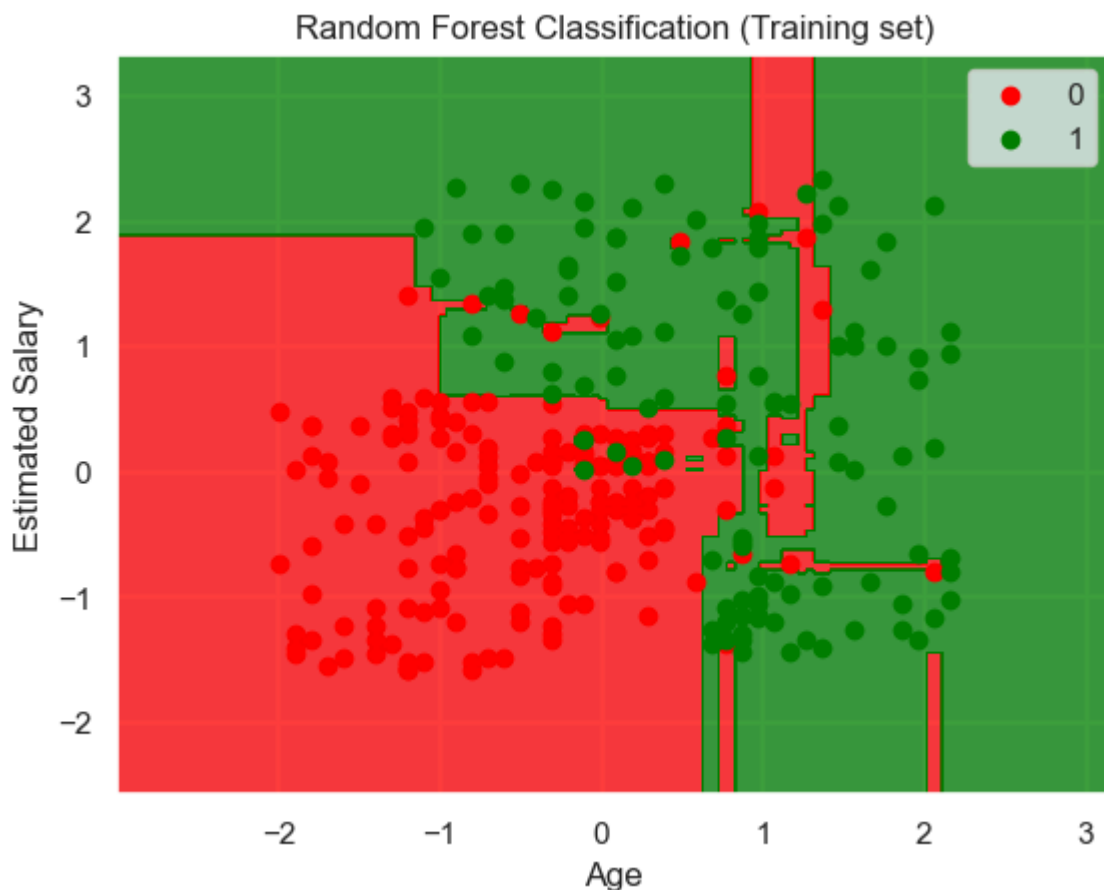
from sklearn.metrics import confusion_matrix
cm = confusion_matrix(y_test, y_pred)
print(cm)
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In [219... ## Visualising the Training set results

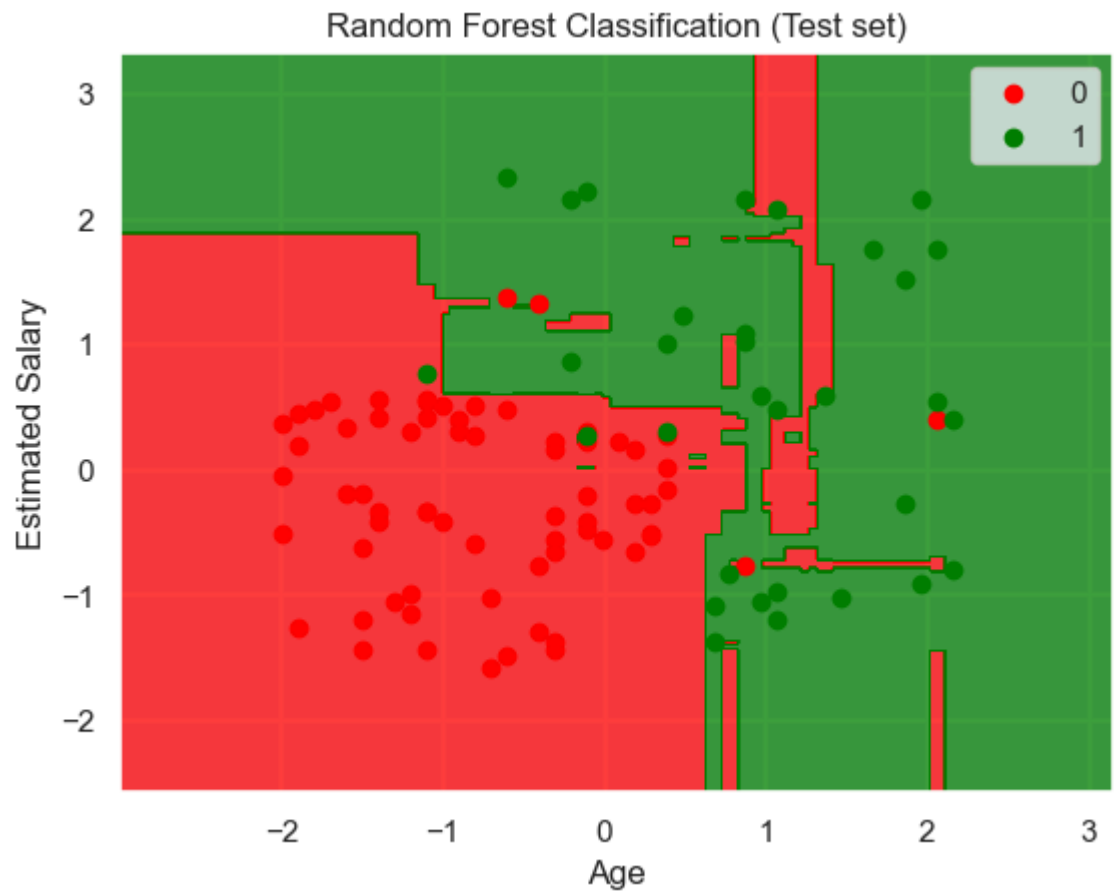
from matplotlib.colors import ListedColormap
X_set, y_set = X_train, y_train
X1, X2 = np.meshgrid(np.arange(start = X_set[:, 0].min() - 1, stop = X_set[:, 0].max() + 1, step = 0.5),
                     np.arange(start = X_set[:, 1].min() - 1, stop = X_set[:, 1].max() + 1, step = 0.5))
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plt.contourf(X1, X2, classifier.predict(np.array([X1.ravel(), X2.ravel()]).T).re
              alpha = 0.75, cmap = ListedColormap(('red', 'green')))
plt.xlim(X1.min(), X1.max())
plt.ylim(X2.min(), X2.max())
for i, j in enumerate(np.unique(y_set)):
    plt.scatter(X_set[y_set == j, 0], X_set[y_set == j, 1],
                c = ListedColormap(('red', 'green'))(i), label = j)
plt.title('Random Forest Classification (Training set)')
plt.xlabel('Age')
plt.ylabel('Estimated Salary')
plt.legend()
plt.show()
```



In [220... *## Visualising the Test set results*

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from matplotlib.colors import ListedColormap
X_set, y_set = X_test, y_test
X1, X2 = np.meshgrid(np.arange(start = X_set[:, 0].min() - 1, stop = X_set[:, 0].max() + 1, step = 0.5),
                     np.arange(start = X_set[:, 1].min() - 1, stop = X_set[:, 1].max() + 1, step = 0.5))
plt.contourf(X1, X2, classifier.predict(np.array([X1.ravel(), X2.ravel()]).T).re
              alpha = 0.75, cmap = ListedColormap(('red', 'green')))
plt.xlim(X1.min(), X1.max())
plt.ylim(X2.min(), X2.max())
for i, j in enumerate(np.unique(y_set)):
    plt.scatter(X_set[y_set == j, 0], X_set[y_set == j, 1],
                c = ListedColormap(('red', 'green'))(i), label = j)
plt.title('Random Forest Classification (Test set)')
plt.xlabel('Age')
plt.ylabel('Estimated Salary')
plt.legend()
plt.show()
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