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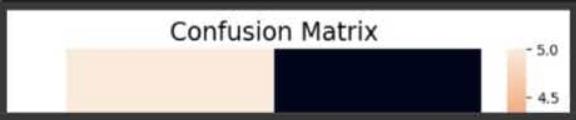
RAM Disk Gemini

```
import numpy as np
from sklearn.metrics import confusion_matrix
import seaborn as sns
import matplotlib.pyplot as plt

#Create the NumPy array for actual and predicted labels.
actual    = np.array(
  ['Dog','Dog','Dog','Not Dog','Dog','Not Dog','Dog','Dog','Not Dog','Not Dog'])
predicted = np.array(
  ['Dog','Not Dog','Dog','Not Dog','Dog','Dog','Dog','Dog','Not Dog','Not Dog'])

#compute the confusion matrix.
cm = confusion_matrix(actual,predicted)

#Plot the confusion matrix.
sns.heatmap(cm,
            annot=True,
            fmt='g',
            xticklabels=['Dog','Not Dog'],
            yticklabels=['Dog','Not Dog'])
plt.ylabel('Prediction',fontsize=13)
plt.xlabel('Actual',fontsize=13)
plt.title('Confusion Matrix',fontsize=17)
plt.show()
```



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2024-05-13

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RAM Disk Gemini

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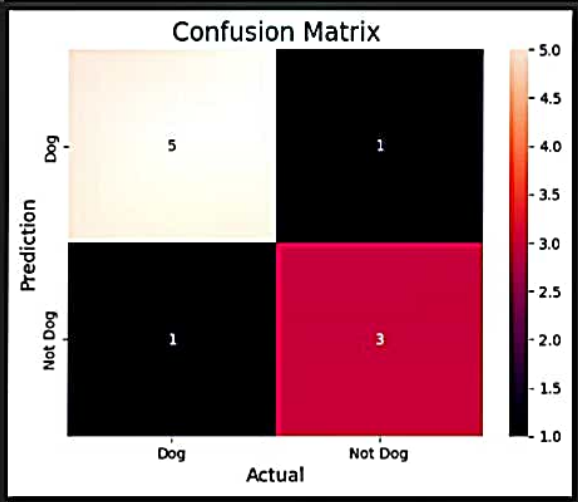
plt.title('Confusion Matrix',fontsize=17)
plt.show()
```



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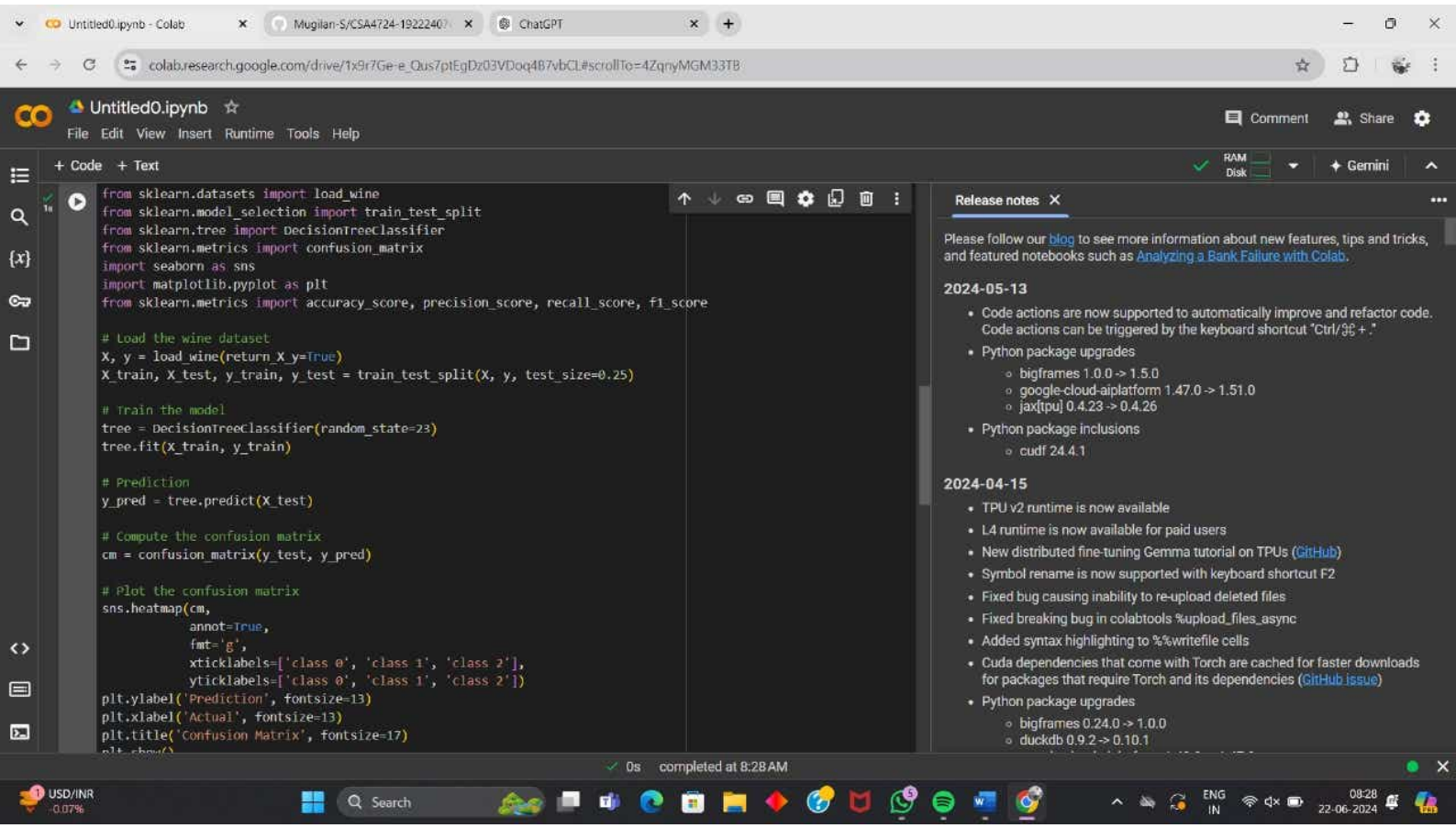
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from sklearn.datasets import load_wine
from sklearn.model_selection import train_test_split
from sklearn.tree import DecisionTreeClassifier
from sklearn.metrics import confusion_matrix
import seaborn as sns
import matplotlib.pyplot as plt
from sklearn.metrics import accuracy_score, precision_score, recall_score, f1_score
# Load the wine dataset
X, y = load_wine(return_X_y=True)
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.25)
# Train the model
tree = DecisionTreeClassifier(random_state=23)
tree.fit(X_train, y_train)
# Prediction
y_pred = tree.predict(X_test)
# Compute the confusion matrix
cm = confusion_matrix(y_test, y_pred)
# Plot the confusion matrix
sns.heatmap(cm,
annot=True,
fmt='g',
xticklabels=['class 0', 'class 1', 'class 2'],
yticklabels=['class 0', 'class 1', 'class 2'])
plt.ylabel('Prediction', fontsize=13)
plt.xlabel('Actual', fontsize=13)
plt.title('Confusion Matrix', fontsize=17)
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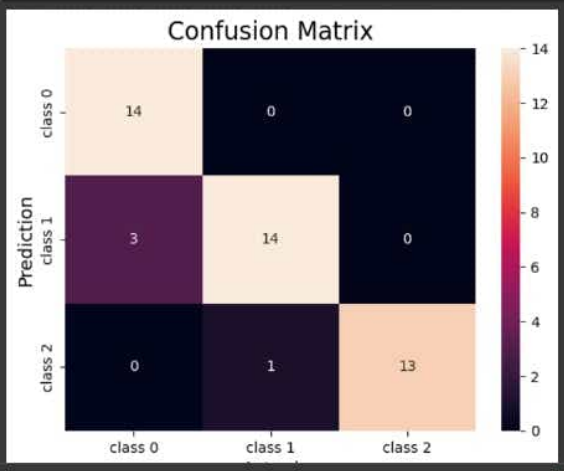
RAM Disk Gemini

```
print("Accuracy  :", accuracy)
precision = precision_score(y_test, y_pred, average='weighted')
print("Precision :", precision)
recall = recall_score(y_test, y_pred, average='weighted')
print("Recall    :", recall)
f1_score = f1_score(y_test, y_pred, average='weighted')
print("F1-score  :", f1_score)
```



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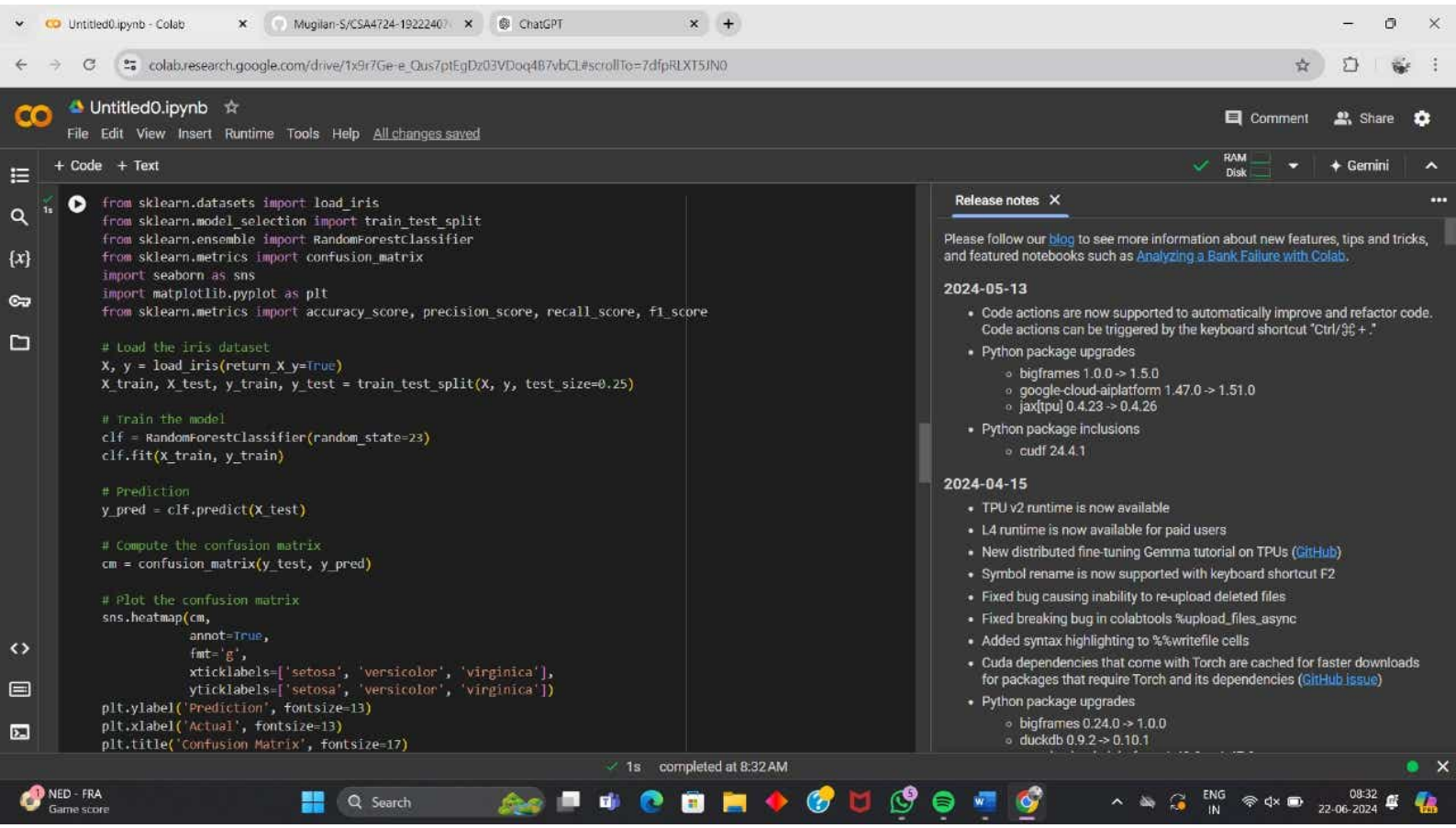
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from sklearn.datasets import load_iris
from sklearn.model_selection import train_test_split
from sklearn.ensemble import RandomForestClassifier
from sklearn.metrics import confusion_matrix
import seaborn as sns
import matplotlib.pyplot as plt
from sklearn.metrics import accuracy_score, precision_score, recall_score, f1_score
# Load the iris dataset
X, y = load_iris(return_X_y=True)
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.25)
# Train the model
clf = RandomForestClassifier(random_state=23)
clf.fit(X_train, y_train)
# Prediction
y_pred = clf.predict(X_test)
# Compute the confusion matrix
cm = confusion_matrix(y_test, y_pred)
# Plot the confusion matrix
sns.heatmap(cm,
annot=True,
fmt='g',
xticklabels=['setosa', 'versicolor', 'virginica'],
yticklabels=['setosa', 'versicolor', 'virginica'])
plt.ylabel('Prediction', fontsize=13)
plt.xlabel('Actual', fontsize=13)
plt.title('Confusion Matrix', fontsize=17)
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print("Accuracy  :", accuracy)
print("Precision :", precision)
print("Recall    :", recall)
print("F1-score  :", F1_score)
```

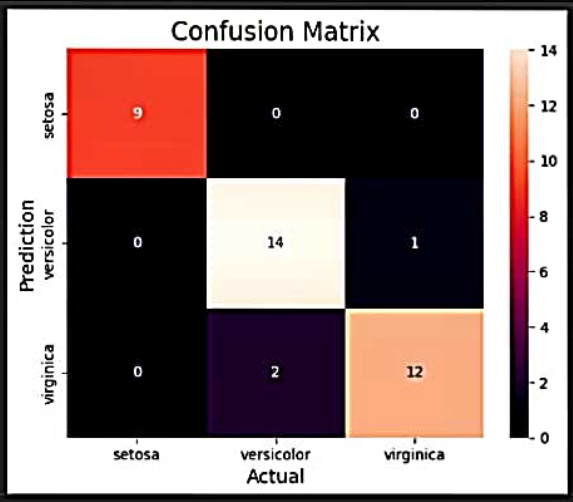

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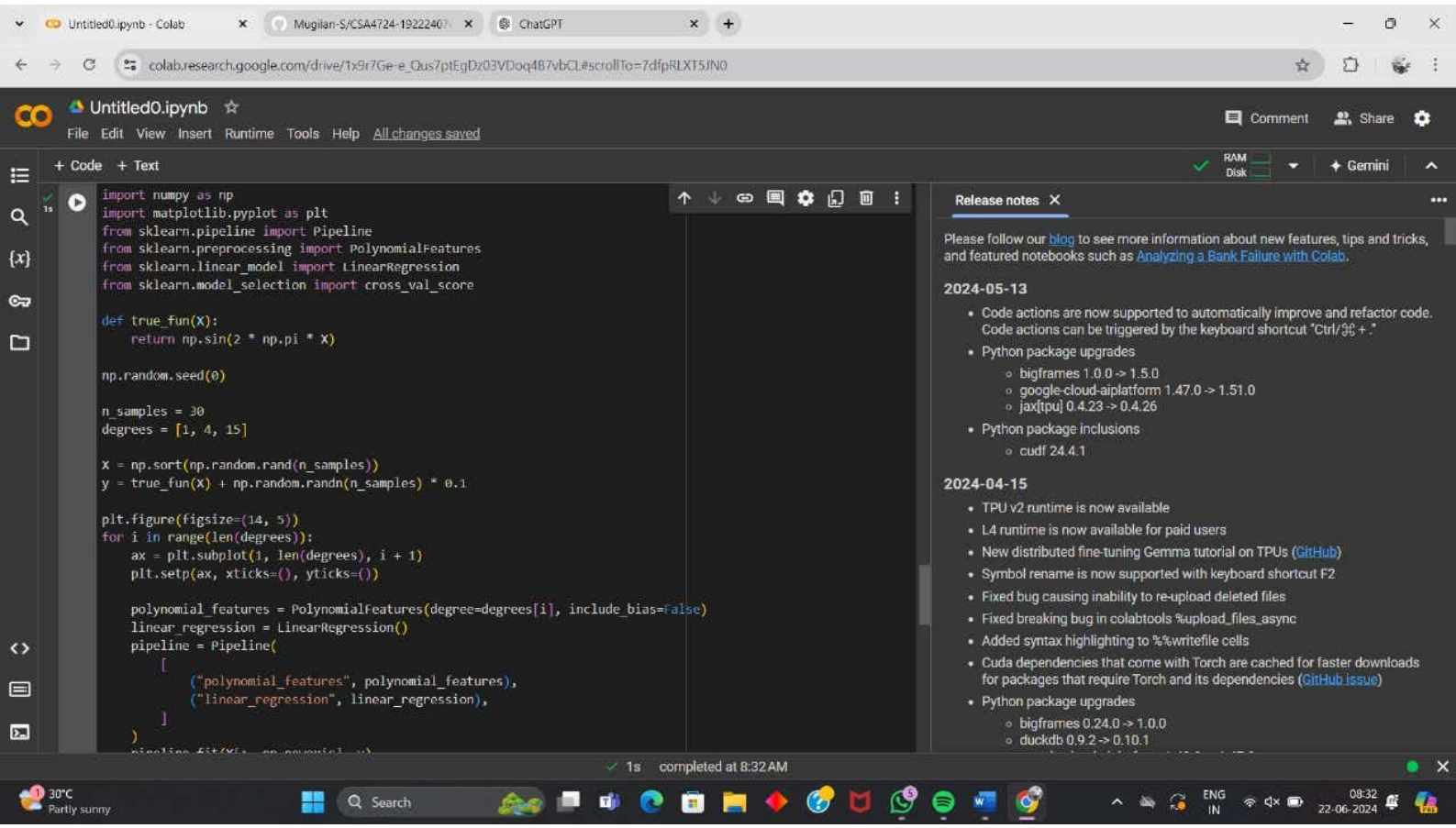
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import numpy as np
import matplotlib.pyplot as plt
from sklearn.pipeline import Pipeline
from sklearn.preprocessing import PolynomialFeatures
from sklearn.linear_model import LinearRegression
from sklearn.model_selection import cross_val_score
def true_fun(X):
return np.sin(2 * np.pi * X)
np.random.seed(0)
n_samples = 30
degrees = [1, 4, 15]
X = np.sort(np.random.rand(n_samples))
y = true_fun(X) + np.random.randn(n_samples) * 0.1
plt.figure(figsize=(14, 5))
for i in range(len(degrees)):
ax = plt.subplot(1, len(degrees), i + 1)
plt.setp(ax, xticks=(), yticks=())
polynomial_features = PolynomialFeatures(degree=degrees[i], include_bias=False)
linear_regression = LinearRegression()
pipeline = Pipeline(
[
("polynomial_features", polynomial_features),
("linear_regression", linear_regression),
]
)
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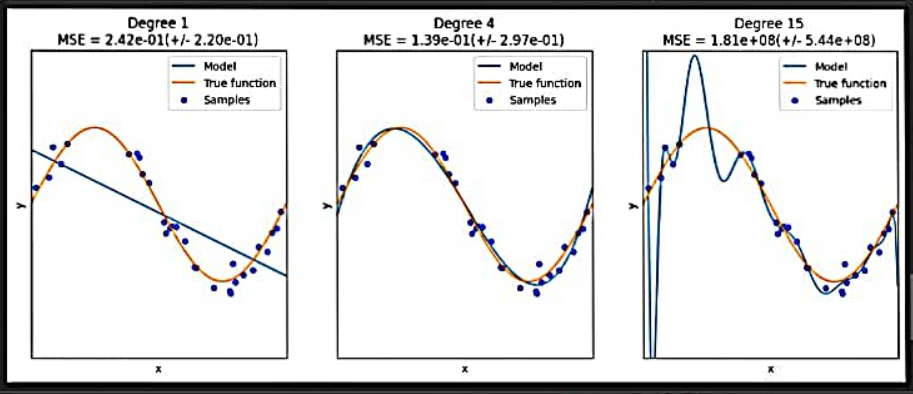
RAM Disk Gemini

```
    plt.ylabel("y")
    plt.xlim((0, 1))
    plt.ylim((-2, 2))
    plt.legend(loc="best")
    plt.title(
        "Degree {}\nMSE = {:.2e}(+/- {:.2e})".format(
            degrees[i], -scores.mean(), scores.std()
        )
    )
plt.show()
```



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