APPLIED ARTIFICIAL INTELLIGENCE

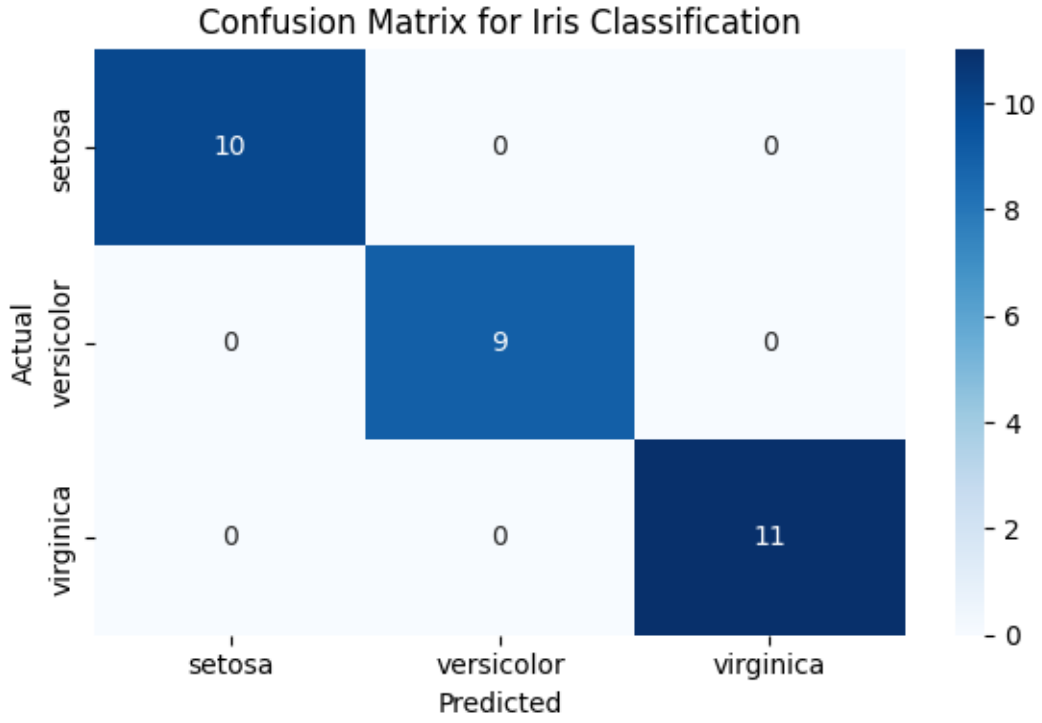
EXPERIMENT – 06

```
import matplotlib.pyplot as plt
import seaborn as sns
from sklearn.datasets import load_iris
from sklearn.model_selection import train_test_split
from sklearn.neighbors import KNeighborsClassifier
from sklearn.metrics import confusion_matrix

# Load dataset
iris = load_iris()
X_train, X_test, y_train, y_test = train_test_split(
    iris.data, iris.target, test_size=0.2, random_state=42)

# Train KNN model
model = KNeighborsClassifier(n_neighbors=3)
model.fit(X_train, y_train)
y_pred = model.predict(X_test)

# Generate confusion matrix
cm = confusion_matrix(y_test, y_pred)
labels = iris.target_names  # ['setosa', 'versicolor', 'virginica']

# Plot heatmap
plt.figure(figsize=(6, 4))
sns.heatmap(cm, annot=True, fmt='d', cmap='Blues',
            xticklabels=labels, yticklabels=labels)
plt.title('Confusion Matrix for Iris Classification')
plt.xlabel('Predicted')
plt.ylabel('Actual')
plt.tight_layout()
plt.show()
```

MOHAMMED MAHROUF
24MSIC106

APPLIED ARTIFICIAL INTELLIGENCE

output:



MOHAMMED MAHROUF
24MSIC106