

**Department of Computer Science and Engineering**

**29th Batch**

**Lab Report 7**

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| Course title | : Artificial Intelligence Lab |
| Course Code | : CSE - 414 |

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| **Submitted By** | | **Submitted To** | |
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* **Question: Making Predictions Using Iris Dataset**
* **Solution(Code & Output):**

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| import pandas as pd  import numpy as np  import matplotlib.pyplot as plt  import seaborn as sns  df = pd.read\_csv('iris.csv')  df.head()  df.describe()  df.info()  df.columns  sns.scatterplot(data=df, x = 'SepalLengthCm', y = 'SepalWidthCm', hue='Species') |  |

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| from sklearn.preprocessing import LabelEncoder,StandardScaler  x = df.drop("Species", axis = 1)  y = df["Species"]  x  y  le = LabelEncoder()  y\_encoded = le.fit\_transform(y)  y\_encoded |  |
| from sklearn.model\_selection import train\_test\_split  from sklearn.metrics import classification\_report, confusion\_matrix  X\_train, X\_test, y\_train, y\_test = train\_test\_split(x,y\_encoded, test\_size= 0.2, random\_state=42)  X\_train  X\_train.shape  X\_test.shape  X\_test  scaler = StandardScaler()  X\_train\_scaled = scaler.fit\_transform(X\_train)  X\_train\_scaled  X\_test\_scaled = scaler.transform(X\_test)  X\_test\_scaled |  |

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| from sklearn.neighbors import KNeighborsClassifier  model=KNeighborsClassifier(n\_neighbors=3)  model.fit(X\_train\_scaled, y\_train)  pred = model.predict(X\_test\_scaled)  pred  y\_test  cmatri = confusion\_matrix(p,y\_test)  cmatri |  |

* **Conclusion:**

In this lab, I learned how to use Python to train a model and make predictions. I used pandas for data, seaborn and matplotlib for graphs, and scikit-learn for machine learning. It was helped me understand how prediction works with real data. I feel more confident now about building simple ML projects.