Practical 3):

import pandas as pd

import numpy as np

from sklearn.preprocessing import LabelEncoder

import seaborn as sns

import matplotlib.pyplot as plt

from sklearn.preprocessing import StandardScaler

df=sns.load\_dataset('iris')

print("First 5 rows of the dataset: ")

print(df.head())

# Task 1: Summary Statistics for a Dataset (Sepal Length grouped by Species)

grouped\_stats = df.groupby('species').agg(

mean\_sepal\_length=('sepal\_length', 'mean'),

median\_sepal\_length=('sepal\_length', 'median'),

min\_sepal\_length=('sepal\_length', 'min'),

max\_sepal\_length=('sepal\_length', 'max'),

std\_sepal\_length=('sepal\_length', 'std')

)

print("\nSummary Statistics for Sepal Length Grouped by Species:")

print(grouped\_stats)

# Create a list of Sepal Length values for each species

grouped\_list = df.groupby('species')['sepal\_length'].apply(list)

print("\nList of Sepal Lengths for Each Species:")

print(grouped\_list)

# Task 2: Display Statistical Details for the Iris Dataset

# Calculate descriptive statistics for each species

species\_stats = {}

for species in df['species'].unique():

species\_data = df[df['species'] == species]

print(f"\nStatistical Details for {species.capitalize()}:")

print(species\_data.describe())