

Dataset :

<http://archive.ics.uci.edu/dataset/2/adult>

Question: Do data analysis using Pandas and answer following questions?

1. How many men and women (sex feature) are represented in this dataset?
2. What is the average age (age feature) of women?
3. What is the proportion of German citizens (native-country feature)?
- 4-5. What are mean value and standard deviation of the age of those who receive more than 50K per year (salary feature) and those who receive less than 50K per year?
 1. Is it true that people who receive more than 50k have at least high school education? (education - Bachelors, Prof-school, Assoc-acdm, Assoc-voc, Masters or Doctorate feature)

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In [ ]: import pandas as pd
import numpy as np

# Load the dataset into a DataFrame
df = pd.read_csv("desktop/python/adult/adult.csv")

# Count the number of men and women
gender_counts = df['sex'].value_counts()
print("Number of men:", gender_counts['Male'])
print("Number of women:", gender_counts['Female'])

# Calculate the average age of women
average_age_women = df.loc[df['sex'] == 'Female', 'age'].mean()
print("Average age of women:", average_age_women)

# Calculate the proportion of German citizens
german_citizens_proportion = df.loc[df['native-country'] == 'Germany'].shape[0] / df.shape[0]
print("Proportion of German citizens:", german_citizens_proportion)

# Calculate the mean and standard deviation of age for different salary groups
mean_age_high_income = df.loc[df['salary'] == '>50K', 'age'].mean()
std_age_high_income = df.loc[df['salary'] == '>50K', 'age'].std()
mean_age_low_income = df.loc[df['salary'] == '<=50K', 'age'].mean()
std_age_low_income = df.loc[df['salary'] == '<=50K', 'age'].std()

print("Mean age for high-income individuals:", mean_age_high_income)
print("Standard deviation of age for high-income individuals:", std_age_high_income)
print("Mean age for low-income individuals:", mean_age_low_income)
print("Standard deviation of age for low-income individuals:", std_age_low_income)

# Check if individuals with high income have at least a high school education
high_income_education_check = df.loc[df['salary'] == '>50K', 'education'].isin(['Bachelors', 'Prof-school', 'Assoc-acdm', 'Assoc-voc', 'Masters', 'D'])
print("Do high-income individuals have at least a high school education?", high_income_education_check)
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