

Task 3.1P Process data from file

- ✓ You are given a student result data file (result_withoutTotal.csv). It has columns: ID: student id Ass1 ~ Ass4: assignment scores (out of 100); weight of ass1, ass2, ass3 and ass4 is 5%, 15%, 5%, and 15%, respectively. Exam: examination score (out of 120); weight is 60%.
- Print average of ass1, ass2, ass3, ass4 and exam column, respectively.
- Print min of ass1, ass2, ass3, ass4 and exam column, respectively.
- Print max of ass1, ass2, ass3, ass4 and exam column, respectively.
- Select the students with the highest ass1, ass2, ass3, ass4 and exam, respectively, and print their information (ID, Ass1, Ass2, ..., Exam)
- This Python script reads a CSV file of student results and performs various statistical analyses. It imports the Pandas library, reads the file, and selects columns ID, Ass1, Ass2, Ass3, Ass4, and Exam. It then calculates and prints the average, minimum, and maximum scores for each assignment and the exam. The script identifies the student(s) with the highest scores in each category by filtering the DataFrame based on the maximum values. It prints the complete information of these top-performing students. This analysis helps educators quickly understand overall trends and identify individual high achievers, aiding in performance assessment and decision-making.

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jupyter Task 3 IP (at desktop) (new window)
File Edit View Insert Cell Help Window Help
5 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

In [1]: import pandas as pd

# Just for the IP file, creating only the required columns
df = pd.read_csv('result_submission.csv', usecols=[20, 'Ass1', 'Ass2', 'Ass3', 'Ass4', 'Exam'])

# Print the range of ass1, ass2, ass3, ass4 and exam
print("Average Scores:")
print("Ass1:", df['Ass1'].min())
print("Ass2:", df['Ass2'].min())
print("Ass3:", df['Ass3'].min())
print("Ass4:", df['Ass4'].min())
print("Exam:", df['Exam'].min())

# Print the range of ass1, ass2, ass3, ass4 and exam
print("Maximum Scores:")
print("Ass1:", df['Ass1'].max())
print("Ass2:", df['Ass2'].max())
print("Ass3:", df['Ass3'].max())
print("Ass4:", df['Ass4'].max())
print("Exam:", df['Exam'].max())

# Print the range of ass1, ass2, ass3, ass4 and exam
print("Minimum Scores:")
print("Ass1:", df['Ass1'].min())
print("Ass2:", df['Ass2'].min())
print("Ass3:", df['Ass3'].min())
print("Ass4:", df['Ass4'].min())
print("Exam:", df['Exam'].min())

# Select students with the highest Ass1, Ass2, Ass3, Ass4 and Exam and print their information
highest_ass1 = df[df['Ass1'] == df['Ass1'].max()]
highest_ass2 = df[df['Ass2'] == df['Ass2'].max()]
highest_ass3 = df[df['Ass3'] == df['Ass3'].max()]
highest_ass4 = df[df['Ass4'] == df['Ass4'].max()]
highest_exam = df[df['Exam'] == df['Exam'].max()]

print("Student with highest Ass1:")
print(highest_ass1)

print("Student with highest Ass2:")
print(highest_ass2)

print("Student with highest Ass3:")
print(highest_ass3)

print("Student with highest Ass4:")
print(highest_ass4)

print("Student with highest Exam:")
print(highest_exam)

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Average Scores:
Ass1: 79.06241756241756
Ass2: 72.61070821976822
Ass3: 71.76373626375626
Ass4: 83.7854945054045
Exam: 57.24175824175834

Minimum Scores:
Ass1: 38.0
Ass2: 43.8
Ass3: 0.0
Ass4: 0.0
Exam: 0

Maximum Scores:
Ass1: 99.1
Ass2: 100.0
Ass3: 98.0
Ass4: 100.0
Exam: 106

Student with highest Ass1:
  ID  Ass1  Ass2  Ass3  Ass4  Exam
52  53  99.1  86.6  82.0  93.1    57

Student with highest Ass2:
  ID  Ass1  Ass2  Ass3  Ass4  Exam
10  11  96.6  100.0  98.0  97.3   102
49  50  93.6  100.0  97.0  100.0    90
83  84  93.6  100.0  96.0  100.0   106

Student with highest Ass3:
  ID  Ass1  Ass2  Ass3  Ass4  Exam
10  11  96.6  100.0  98.0  97.3   102
40  41  88.0  58.5  98.0  91.8    71

Student with highest Ass4:
  ID  Ass1  Ass2  Ass3  Ass4  Exam
33  34  94.4  97.5  80.0  100.0    90
34  35  92.7  76.8  84.0  100.0    55
49  50  93.6  100.0  97.0  100.0    90
83  84  93.6  100.0  96.0  100.0   106
87  88  96.0  97.0  85.0  100.0    76

Student with highest Exam:
  ID  Ass1  Ass2  Ass3  Ass4  Exam
83  84  93.6  100.0  96.0  100.0   106

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