HW 1 Python

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from ast import Pow

from cmath import sqrt

#library for the standard deviation

import numpy

# student class containing all grades and the name

class Student:

    def \_\_init\_\_(self, name, grades):

        self.name = name

        self.math= grades["math"]

        self.physics = grades["physics"]

        self.chemistry= grades["chemistry"]

        self.psycho = grades["psycho"]

        self.history = grades["history"]

    # print function

    def prints(self):

        print(f'{self.name} had a grade of {self.science\_Grade()} in his science courses and {self.social\_grade()} in his social science courses. His overall average was {self.avg()} with a standard deviation of {self.deviation()}')

# avg of science grades

    def science\_Grade(self):

        return ((self.math + self.physics + self.chemistry)/ 3)

    # avg of social grades

    def social\_grade(self):

        return ((self.physics + self.history )/ 2)

# overall avg

    def avg(self):

        return ((self.science\_Grade()+self.social\_grade())/ 2)

    #deviation function using extern library

    def deviation(self):

        x1 = self.math

        x2 = self.physics

        x3 =  self.chemistry

        x4 = self.psycho

        x5 = self.history

        return float(numpy.std([x1, x2, x3, x4, x5]))

    def points(self):

        math = physics = 6

        psycho = 5

        history = chemistry = 3

        avg = (math + physics + psycho + history + chemistry)/ 5

        message =f' {self.name} had an average of {self.science\_Grade()} in his science courses and {self.social\_grade()} in his social science courses. His weighted average was {avg}.'

        print(message)

def temperature(celc):

    return (9/5 \* celc + 32)

def main():

    #part 1:

    grades = {"math": 89, "physics": 88, "chemistry": 90, "psycho": 80, "history": 80}

    student\_a = Student("Jack Stein", grades)

    student\_a.prints()

    #part 2:

    print("Enter student name: ")

    name = input()

    print("Enter grades by math, physics, chemistry, psychology and history: ")

    math = int(input())

    physics = int(input())

    chemi = int(input())

    psycho = int(input())

    hist = int(input())

    grades = {"math": math, "physics": physics, "chemistry": chemi, "psycho": psycho, "history": hist}

    student\_b = Student(name, grades)

    student\_b.prints()

    #part 3

    student\_a.points()

    #part 4

    print("Enter a temperature in Celcius: ")

    temp = int(input())

    print(f'{temp} degrees Centigrade is equivalent to {temperature(temp)} degrees Fahrenheit.')

if \_\_name\_\_ == "\_\_main\_\_":

    main()