Lecture 33: 2D Structures

Adapted from slides by Marty Stepp and Stuart Reges
2d Structure Review

• Given the following structure:

   grades = {'Ali':[10, 16, 20, 13, 3, 17],
             'Ken':[9, 16, 8, 19, 20, 20],
             'Daniel':[8, 10, 20, 20, 20, 20]}

• How can I access Ken's grade on project 3?
• How can I find out how many students are in my class / grades?
• How can I find out how many projects a student has done?
Exercise

• What does the following code produce?

def main():
    grades = {'Ali': [10, 16, 20, 13, 3, 17],
              'Ken': [9, 16, 8, 19, 20, 20],
              'Daniel': [8, 10, 20, 20, 20, 20]}
    print(mystery(grades, 2))

def mystery(grades, i):
    total = 0
    for student in grades:
        total += grades[student][i]
    return total / len(grades)
Exercise

• Write a function to calculate the average grade of all students on all assignments.
  • How can we get access to each grade?
  • How can we know how many grades we need to sum?
Exercise

• Write a function that returns a list where each element in the list is the average score for that particular assignment number.
Exercise

• Write a function that returns the project number that the student scored highest on.
  • Use the list sort function