Home Work 2

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1 Create Four Lists

```
[ ]: labs = [100,50,0,100,50,100,100,100,50,0,1]
homework = [110,90,80,110,70,0,120]
exams = [90,100,80,100]
participation = 100
```

2 Compute Category Grades

```
[ ]: labAvg = sum(labs[::])/len(labs)
hwAvg = sum(homework[::])/len(homework)
examAvg = sum(exams[::])/len(exams)
```

3 Compute Total Grade

```
[ ]: weights = {'Labs': 5/100, 'Participation': 5/100, 'Homeworks': 40/100,
'Exams': 50/100}
labGrade = labAvg * weights['Labs']
hwGrade = hwAvg * weights['Homeworks']
examGrade = examAvg * weights['Exams']
participationGrade = participation * weights['Participation']
gradeBook = [hwGrade, labGrade, participationGrade, examGrade]
total = sum(gradeBook[::])
```

4 Determine The Letter Grade

```
[ ]: gradeTable = {
(93, 100): 'A',
(90, 92): 'A-',
(85, 89): 'B+',
(80, 84): 'B',
(75, 79): 'B-',
(72, 74): 'C+',
```

```
(68, 71): 'C',
(60, 67): 'C-',
(50, 59): 'D',
(0, 49): 'F'
}

l = list(gradeTable.keys())
filter = [l[0][0] <= total <= l[0][1],
l[1][0] <= total <= l[1][1],
l[2][0] <= total <= l[2][1],
l[3][0] <= total <= l[3][1],
l[4][0] <= total <= l[4][1],
l[5][0] <= total <= l[5][1],
l[6][0] <= total <= l[6][1],
l[7][0] <= total <= l[7][1],
l[8][0] <= total <= l[8][1],
l[9][0] <= total <= l[9][1]]

letterGrade = gradeTable[l[filter.index(True)]]
```

5 Print Grade Report

[ ]:
```
print('GRADE REPORT')
print('-' * 75)
print(f'Homework Grades: {homework} = {sum(homework[::])}/{len(homework)} =␣
 ↪{hwAvg:.1f}')
print(f'Lab Grades: {labs} = {sum(labs[::])}/{len(labs)} = {labAvg:.1f}')
print(f'Participation Grade: {participation}')
print(f'Exam Grades: {exams} = {sum(exams[::])}/{len(exams)} = {examAvg:.1f}')
print('-' * 75)
print(f'{"Homeworks":<15}', f': {hwAvg:>5.1f} x {weights["Homeworks"]:.2f}')
print(f'{"Labs":<15}', f': {labAvg:>5.1f} x {weights["Labs"]:.2f}')
print(f'{"Participation":<15}', f': {participation:>5.1f} x␣
 ↪{weights["Participation"]:.2f}')
print(f'{"Exams ":<15}', f': {examAvg:>5.1f} x {weights["Exams"]:.2f}')
print('-' * 30)
print(f'{"TOTAL":<15}', f': {total:>5.1f}')
print('-' * 30)
print(f'{"GRADE":<15}', f': {letterGrade:>5}')
```

```
GRADE REPORT
---------------------------------------------------------------------------
Homework Grades: [110, 90, 80, 110, 70, 0, 120] = 580/7 = 82.9
Lab Grades: [100, 50, 0, 100, 50, 100, 100, 100, 50, 0, 1] = 651/11 = 59.2
Participation Grade: 100
Exam Grades: [90, 100, 80, 100] = 370/4 = 92.5
---------------------------------------------------------------------------
```

```
Homeworks       :  82.9 x 0.40
Labs            :  59.2 x 0.05
Participation   : 100.0 x 0.05
Exams           :  92.5 x 0.50
------------------------------
TOTAL           :  87.4
------------------------------
GRADE           :    B+
```

6 BONUS

[ ]:
```
exams.append(0)
homework.append(0)
```

[ ]:
```
labAvg = sum(labs[::])/len(labs)
hwAvg = sum(homework[::])/len(homework)
examAvg = sum(exams[::])/len(exams)

weights = {'Labs': 5/100, 'Participation': 5/100, 'Homeworks': 40/100,
'Exams': 50/100}
labGrade = labAvg * weights['Labs']
hwGrade = hwAvg * weights['Homeworks']
examGrade = examAvg * weights['Exams']
participationGrade = participation * weights['Participation']
gradeBook = [hwGrade, labGrade, participationGrade, examGrade]
total = sum(gradeBook[::])

l = list(gradeTable.keys())
filter = [l[0][0] <= total <= l[0][1],
l[1][0] <= total <= l[1][1],
l[2][0] <= total <= l[2][1],
l[3][0] <= total <= l[3][1],
l[4][0] <= total <= l[4][1],
l[5][0] <= total <= l[5][1],
l[6][0] <= total <= l[6][1],
l[7][0] <= total <= l[7][1],
l[8][0] <= total <= l[8][1],
l[9][0] <= total <= l[9][1]]

letterGrade = gradeTable[l[filter.index(True)]]
letterGrade

print('GRADE REPORT')
print('-' * 75)
print(f'Homework Grades: {homework} = {sum(homework[::])}/{len(homework)} =␣
 ↪{hwAvg:.1f}')
print(f'Lab Grades: {labs} = {sum(labs[::])}/{len(labs)} = {labAvg:.1f}')
```

```
print(f'Participation Grade: {participation}')
print(f'Exam Grades: {exams} = {sum(exams[::])}/{len(exams)} = {examAvg:.1f}')
print('-' * 75)
print(f'{"Homeworks":<15}', f': {hwAvg:>5.1f} x {weights["Homeworks"]:.2f}')
print(f'{"Labs":<15}', f': {labAvg:>5.1f} x {weights["Labs"]:.2f}')
print(f'{"Participation":<15}', f': {participation:>5.1f} x␣
  ↪{weights["Participation"]:.2f}')
print(f'{"Exam ":<15}', f': {examAvg:>5.1f} x {weights["Exams"]:.2f}')
print('-' * 30)
print(f'{"TOTAL":<15}', f': {total:>5.1f}')
print('-' * 30)
print(f'{"GRADE":<15}', f': {letterGrade:>5}')
```

```
GRADE REPORT
---------------------------------------------------------------------------
Homework Grades: [110, 90, 80, 110, 70, 0, 120, 0] = 580/8 = 72.5
Lab Grades: [100, 50, 0, 100, 50, 100, 100, 100, 50, 0, 1] = 651/11 = 59.2
Participation Grade: 100
Exam Grades: [90, 100, 80, 100, 0] = 370/5 = 74.0
---------------------------------------------------------------------------
Homeworks       :  72.5 x 0.40
Labs            :  59.2 x 0.05
Participation   : 100.0 x 0.05
Exam            :  74.0 x 0.50
------------------------------
TOTAL           :  74.0
------------------------------
GRADE           :    C+
```