Week 2 Module 4: Your Final Grade EXERCISES

Let's clear the global computing environment:

```
rm( list = ls() )
```

Exercise for Week 2 Module 4: Your Final Grade

Exercise 1: Your Final Grade

Part (a)

Bob is registered for graduate credit, and obtained these raw scores:

- He scored 52 total points on his problem sets.
- He scored a 72 on the midterm.
- He scored a 74 on the comprehensive course assessment.

Calculate Bob's final letter grade for the course.

Answer

Part (b)

Ashley is registered for undergraduate credit, but obtains the exact same scores as Bob does.

Calculate Ashley's final letter grade.

Answer

Solution to the Exercise

Exercise 1: Your Final Grade

Part (a)

Bob is registered for graduate credit, and obtained these raw scores:

- He scored 52 total points on his problem sets.
- He scored a 72 on the midterm.
- He scored a 74 on the comprehensive course assessment.

Calculate Bob's final letter grade for the course.

Answer

Let's define some variables to store Bob's raw scores:

```
problem.set.raw.score <- 52

midterm.exam.raw.score <- 72

comprehensive.assessment.raw.score <- 74
```

First, we'll standardize Bob's scores.

Bob's standardized score for the problem set points is:

```
problem.set.standardized.score <-
    problem.set.raw.score / 68 * 100

cat(
    "Standardized problem set score:",
    formatC(
        problem.set.standardized.score,
        format = "f",
        digits = 2
    )
)
```

```
## Standardized problem set score: 76.47
```

Bob's standardized score for the midterm exam is:

```
midterm.exam.standardized.score <-
    midterm.exam.raw.score / 80 * 100

cat(
    "Standardized midterm exam score:",
    formatC(
        midterm.exam.standardized.score,
        format = "f",
        digits = 2
    )
)
```

```
## Standardized midterm exam score: 90.00
```

Bob's standardized score for the comprehensive course assessment is:

```
comprehensive.assessment.standardized.score <-
    comprehensive.assessment.raw.score / 80 * 100

cat(
    "Standardized comprehensive.assessment score:",
```

```
    formatC(
        comprehensive.assessment.standardized.score,
        format = "f",
        digits = 2
    )
)
```

```
## Standardized comprehensive.assessment score: 92.50
```

Now we'll calculate Bob's preliminary score 1:

```
preliminary.score.1 <-
    (0.20 * problem.set.standardized.score) +
    (0.30 * midterm.exam.standardized.score) +
    (0.50 * comprehensive.assessment.standardized.score)

cat(
    "Preliminary score 1:",
    formatC(
        preliminary.score.1,
        format = "f",
        digits = 2
    )
)
```

```
## Preliminary score 1: 88.54
```

Now we'll calculate Bob's preliminary score 2:

```
preliminary.score.2 <-
    (0.35 * midterm.exam.standardized.score) +
    (0.65 * comprehensive.assessment.standardized.score)

cat(
    "Preliminary score 2:",
    formatC(
        preliminary.score.2,
        format = "f",
        digits = 2
    )
)
```

```
## Preliminary score 2: 91.62
```

Since the value of preliminary score 2 is greater than the value of preliminary score 1, I use the preliminary score 2 value as the graduate final course score.

```
graduate.final.course.score <-
    max( preliminary.score.1, preliminary.score.2 )

cat(
```

```
    "Final graduate course score for Bob:",
    formatC(
        graduate.final.course.score,
        format = "f",
        digits = 2
    )
)
```

```
## Final graduate course score for Bob: 91.62
```

Let's summarize Bob's scores:

	Value
Preliminary Score 1	88.54
Preliminary Score 2	91.62
:———————-	:—:
Final Graduate Course Score	91.62

When I look up the final graduate course score of 91.62 in the letter grade table, I find that this corresponds to a grade of "A-".

So Bob gets an "A-" for the course as his final grade.

Part (b)

Ashley is registered for undergraduate credit, but obtains the exact same scores as Bob does.

Calculate Ashley's final letter grade.

Answer

Since Ashley is registered for undergraduate credit, her pro-rated undergraduate final course score is:

```
undergraduate.final.course.score <-
    4/3 * graduate.final.course.score

cat(
    "Final course score for Ashley:",
    formatC(
        undergraduate.final.course.score,
        format = "f",
        digits = 2
    )
)
```

```
## Final course score for Ashley: 122.17
```

So in this case Ashley gets a final letter grade of "A".