BYU IDAHO CSE 111 | Programming with Functions ☾

01 Checkpoint: Review Python

Purpose

Review the concepts of user input, variables, arithmetic, and output to help you prepare for the new content in CSE 111.

Problem Statement

When you physically exercise to strengthen your heart, you should maintain your heart rate within a range for at least 20 minutes. To find that range, subtract your age from 220. This difference is your maximum heart rate per minute. Your heart simply will not beat faster than this maximum (220 − age). When exercising to strengthen your heart, you should keep your heart rate between 65% and 85% of your heart's maximum.

Assignment

Write a Python program named `heart_rate.py` that asks for a person's age and computes and outputs the slowest and fastest rates necessary to strengthen his heart. To start your program, copy and paste the following code into your program and use it as an outline as you write code. Note that in a Python program, a triple quoted string at the top of the file acts as a comment for the entire program.

```
"""
When you physically exercise to strengthen your heart, you
should maintain your heart rate within a range for at least 20
minutes. To find that range, subtract your age from 220. This
difference is your maximum heart rate per minute. Your heart
simply will not beat faster than this maximum (220 - age).
When exercising to strengthen your heart, you should keep your
heart rate between 65% and 85% of your heart's maximum.
"""
```

Helpful Documentation

The prepare content for this lesson explains how to write code to do the following:

- Get input from a user
- Convert user input from a string to a number
- Calculate results
- Display results to the user

Testing Procedure

Verify that your program works correctly by following each step in this testing procedure:

1. Run your program using the input shown in the sample run section below. Ensure that your program's output matches the sample run output.

2. Run your program using your age or the age of one of your parents. Use a calculator to ensure that the output is correct.

Sample Run

```
> python heart_rate.py
Please enter your age: 23
When you exercise to strengthen your heart, you should
keep your heart rate between 128 and 167 beats per minute.
```

Sample Solution

When your program is finished, view the sample solution [↓] for this assignment to compare your solution to that one. Before looking at the sample solution, you should work to complete this checkpoint program. However, if you have worked on it for at least an hour and are still having problems, feel free to use the sample solution to help you finish your program.

Submission

When complete, report your progress in the associated I-Learn quiz.

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