Reflection on Solving "The Descent" Puzzle Using Python

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Literate Programming – Fall 2024

For the assignment, I chose to work on "The Descent" puzzle on CodinGame, using Python as my programming language. The objective of the puzzle was to determine which of eight mountains had the greatest height and output the index of that mountain to avoid a ship collision.

Pre-coding Reflection: Before writing any code, I started by carefully reading the problem statement to fully understand the requirements. Given the nature of the problem, I decided not to engage in any physical sketching or drawing. Instead, I mentally mapped out the necessary steps: I would need to iterate through the list of mountain heights, track the maximum height encountered, and then output the index of the mountain with the maximum height. This quick mental algorithm provided me with a clear and straightforward approach to the problem, which allowed me to proceed directly to coding.

Code Implementation: Here's the Python code that I used to solve the problem:

```
python
Copy code
import sys
import math

# game loop
while True:
    max_height = -1
    max_index = 0
    for i in range(8):
        mountain_h = int(input())  # represents the height of one mountain.
        if mountain_h > max_height:
            max_height = mountain_h
            max_index = i

    print(max_index)  # The index of the mountain to fire on.
```

This code iterates through the eight mountains, compares their heights, and determines the index of the highest mountain to fire upon. The logic is simple and effective for solving the problem.

Post-coding Reflection: After coding and testing the solution, I reflected on the approach I took. The problem was relatively simple, and my decision to jump directly into coding after a brief mental outline proved effective. The straightforward nature of the task didn't require extensive pre-coding planning, and I found that my problem-solving process was smooth because of the simplicity of the logic involved. However, I recognize that for more complex problems, taking the time to sketch or write pseudocode would be beneficial in ensuring a more structured and thorough approach. Overall, the pre-coding mental preparation and the subsequent coding process worked well together, leading to a correct and efficient solution.