

Reflecting on Knowledge and Learning: Revisiting Plato's Meno through Game Programming with Python

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In Plato's Meno, one of the main questions raised was, "How do we know what we know, and how do we know what we need to do more work in order to know what we know?" Reflecting on my Year One experience in the course, I found that the exploration of these philosophical questions which were unknown to me, resonated deeply with the learning process in programming. In this paper, I will explore my experiences with learning Python programming, identify moments of growth and difficulty and some moments which were informed by Meno.

Learning through the Course: Game Programming with Python

Before joining the course, I already had some familiarity with Python programming. I had learned the basics of syntax, variables and others through self-study. However, I quickly realized that understanding the basic concepts was not enough to effectively create games. In Meno, Socrates suggests that true knowledge comes from more than just being told or memorizing information; it comes from engaging with and applying ideas. I found that knowing the syntax for loops, for example, was not enough to develop a game—it was essential to understand how and when to use those loops in more complex, real-world contexts, such as game mechanics or event-driven programming. This realization came through when I worked on my guessing game, as I struggled to see how they applied to build a game with meaningful interaction. This course pushed me beyond my previous understanding, showing me that Python's syntax was only the beginning. In Meno, Socrates guides Meno to realize that knowledge is not merely the result of memorization or passive learning but comes through active reflection and engagement with the material. Similarly, my prior knowledge of

Python was not enough to develop games; I had to actively engage with new ideas and apply them in practical ways.

Struggles and Milestones: Growing Pains and Learning through Application.

As I progressed through the course, I experienced several moments of "growing pains," where my understanding was stretched, and I had to work through challenges to fully grasp new concepts. One of the most significant growing pains occurred when I encountered the task of incorporating loops and conditional statements to enhance the random number guessing game. At first, it was difficult for me to grasp how to structure the game logic in a way that allowed the game to prompt the user for multiple guesses, check whether the guess was correct, and provide appropriate feedback after each attempt. In *Meno*, Socrates argues that learning is an active process that involves reflection and application of knowledge. Similarly, I found that I learned the most when I took the time to reflect on my approach and test the code. Also, debugging the code when errors occur out of nowhere was the most frustrating time while coding. On the contrary, while debugging, only then I properly understand what exactly was happening in my code and what I was missing there. This experience mirrored the process described in *Meno*, where Socrates encourages Meno to engage with his own learning and reflect on how knowledge comes from active effort, not passive instruction.

Markers of New Learning: Recognizing Growth

In both *Meno* and my experience with Python, recognizing when I had truly learned something was a pivotal moment. In *Meno*, Socrates leads Meno to understand that knowledge is not simply a matter of memorizing facts but involves recognizing the truth through active engagement with ideas. Similarly, I realized I had learned something new when I was able to apply the concepts of loops, conditionals, and random number generation to build a functional game which worked as intended- accepting input, checking guesses and giving feedback. And this was when I recognized that I had internalized these basic programming concepts. This was the time when I knew I could not only follow instructions but also think critically about how to apply the knowledge I had gained. This was like the philosophical insight from the *Meno*: "True learning

involves the ability to apply knowledge to new situations and recognize the utility of concepts in practice”.

Looking Forward: What Lies Ahead in Game Programming

While I have gained a strong foundation in Python programming, I recognize that there is still much to learn as this course was just the tip of the iceberg. In Meno, Socrates suggests that learning is an ongoing process, and this is reflected in my own experience. I understand that game programming is a vast field, and while I have made progress, there is always more to explore and learn. Also there are also many other fields related with python that I could go on in future. Each new challenge or project presents an opportunity to deepen my knowledge, and I am excited to continue developing my programming skills. As I look ahead, I know that there will always be more to learn, whether it's about more advanced Python concepts, game design strategies, creative aspects of developing interactive games or even other field not related to game programming.

References

Plato. (1994). Meno (G.M.A. Grube, Trans.). In Complete Works (J.M. Cooper, Ed.). Hackett Publishing.