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STRATEGY IMPLEMENTATION

For my implementation of the Strategy design pattern, I decided that the following information should be provided to each Player, in order to cater to a wide variety of potential strategies:

- An array containing the scores of every Player in the game

- The number of points needed to win Bulldog – 104

- The total number of points earned, but not yet scored, this turn

- The number of times the die has been rolled this turn

- The value of the most recent die roll

Aside from a count of each player's score, the other pieces of information are necessary to the existing Player subclasses. I had begun writing a class to encapsulate this data, but when it came time to implement my work, I had hit a sort of road block. Getting to this point had taken me fewer than thirty minutes, and in hindsight, the difficulty was not nearly as great as it had seemed at first glance. Nevertheless, I was quick to prompt ChatGPT-4 for the answer, and it gave me one that corrected the mistake I made that had caused the road block in the first place. What was most strange to me, however, was the feeling of a hollow victory lingering even now. It has been a most pervasive thought throughout all of my study into the applications of AI tools in practical problems.

When I am facing a difficult programming problem in Systems Programming, a course focused primarily on C, I do not open an AI tool and prompt it to solve that problem. In fact, I find that I prefer to scour the Internet manually, browsing StackOverflow and similar forums, in my search for answers.

That way of doing things feels more like research, and it has helped me get a better understanding not only in C programming, but also in how computers represent memory, processes, code, and data using only binary bits. It is incredible just how much effort and work has gone into something many of us take for granted today. I don't get that same feeling when I solve problems in this class with AI tools. It feels like cheating to have the answer, or some form of it that can be worked easily, dropped in front of you before you have taken the time to understand the mechanisms that make the answer possible.

There does lie some amount of skill in prompting such AI tools into giving you that perfect answer, but, to me, the gratification of striking that balance still falls short of the joy of figuring something out on your own. Does one learn the definition of a word by simply looking it up in a dictionary? Or does one learn through repeated use of the word in its proper context, thereby reinforcing the knowledge that is merely pointed to within a dictionary? It is hard to find any kind of objectivity in the realm of philosophy, but if we stick to what is perceivable, I do not feel that I learn as much, as well, or as quickly using AI tools as I do on my own. This is not to say that learning on one's own is always straightforward or easy, but it is certainly all the more rewarding.

Considering all of this, I think to a book that I recently started reading: *Your Computer Is on Fire*, published by MIT Press in 2021. It is a collection of essays critiquing the state of modern computing, pointing to historical and present issues that such an explosive industry has thrust upon humanity. Within it, on age 43, Nathan Ensmenger offers the following quote.

New techniques and technologies do not emerge out of nothing to revolutionize work practices; they are designed explicitly to do so. Machines are designed by humans to accomplish human agendas, and as such it is essential to always ask why industrialization is happening, to what ends, and for what purposes.

It should be noted that this was published before the AI boom of 2022. When I look at all the AI tools available to us today under this lens, I cannot help but feel that part of it comes from some desire to streamline our lives. To get from point A to point B in the shortest amount of time, so that we may do more with our lives… while taking less time to enjoy what we have in the moment.

For as much as I respect the research and development of artificial intelligence for use in the sciences, to commercialize the technology for everyday use feels like a bastardization of the labor of computer scientists around the world. The surge of AI has sent shock waves far beyond the scope of this field alone, and the effects are becoming noticeable. In online spaces where creative expression is encouraged, AI tools are shamed, mocked, and reviled by artists of all kinds. I cannot blame them for feeling such a way, for the root of the problem lies not within the technology itself, but rather in their implementations by corporations and other organizations. Such applications call into question the nature of ethics, copyright law, the practice of art as a whole, and much, much more. Did anyone responsible for these commercial products ever stop to ask, "Just because we can… should we?" Or were they swayed by the prospect of making astronomical amounts of money by selling people the solution to a problem that was never there in the first place?

With those feelings in mind, I decided to finish the rest of this assignment by hand. By this point, all that was left to do was to refactor the various Player subclasses to utilize a strategy not for playing out their turn, but rather for rolling again on their turn. Most of these were one line changes, alongside a deletion of the existing play() methods in each subclass. The continue() strategies for each player are listed below:

- FifteenPlayer

```java
public boolean rollAgain(GameStatus status) {
    return (status.getTurnScore() < 15);
}
```

- FiverPlayer

```java
public boolean rollAgain(GameStatus status) {
    return (status.getTurnRolls() < 5);
}
```

- HumanPlayer

```java
public boolean rollAgain(GameStatus status) {
    return (JOptionPane.YES_OPTION == JOptionPane.showConfirmDialog(null,
                    String.format("You rolled a %d, for a score of %d after %d roll(s). Roll again?",
                            status.getRollValue(), status.getTurnScore(), status.getTurnRolls())
                    "",
                    JOptionPane.YES_NO_OPTION));
}
```

- LuckyPlayer

```java
public boolean rollAgain(GameStatus status) {
    return ((status.getTurnScore() % 7) != 0);
}
```

- RandomPlayer

```java
public boolean rollAgain(GameStatus status) {
    return (coin.roll() == COIN_SIDES);
}
```

- SevenPlayer

```java
public boolean rollAgain(GameStatus status) {
    return (status.getTurnScore() < 7);
}
```

- WimpPlayer

```java
public boolean rollAgain(GameStatus status) {
    return false;
}
```

CONCLUSION

Only time will tell what the future holds for AI, but it is clear that it has its merits and shortcomings. Outside of the studies pertaining to this course, I have little to no desire to include such tools into my daily life. But I believe that it is important to remain aware of the technology's growth, its history, and what elements of it are being sold to the public as a service. I hope to see more discussion and (civil) debate surrounding the applications and use of AI tools within the home, the workplace, and the laboratory. It is the people, not corporations, who hold the collective power to decide how much we want to integrate these technologies into our societies. But we should also consider not just how such integration may impact our society, but how the needs of computing can affect peoples and communities far beyond the borders of the United States. As much as the president may try to push the nation towards an economy of isolationism, computer technologies depend on materials from all around the world. A discussion on how those materials are acquired is beyond the breadth of this essay, but in order for humanity to progress, it is imperative that we continue learning how to peacefully coexist with one another.

Works Cited

Ensmenger, Nathan. "The Cloud is a Factory." *Your Computer Is on Fire*, edited by Thomas S.

Mullaney, et al., MIT Press, 2021, pp. 29-49.