# Weapons of Math Destruction Reading Discussion

**Q1** *Cathy O'Neil, Chapter 3: "Arms Race: Going to College"*

Q1.1 O'Neil critiques the college ranking system for turning higher education into a competitive market rather than a learning environment. How did college rankings influence your or your peers' decisions about where to apply or attend? Do you believe this influence was positive or negative?

Q1.2 O'Neil suggests that ranking systems can exacerbate inequalities. From your experience, how accessible is higher education for people from different socioeconomic backgrounds? How might ranking systems contribute to these challenges?

Q1.3 In pairs, use one laptop to access the following two data-fied views of UC Berkeley:

- *U.S. News* College Rankings page: https://tinyurl.com/data6-wmd-usnews
- U.S. Department of Education College Scorecard page: https://tinyurl.com/data6-wmd-doe

Compare the numeric data shared on the first few pages of each webpage. How do you think these number shape a visitor's view of the "educational excellence" of this university?

(Question 1 continued...)

# Python Basics: Names, Operations, Debugging

## Q2 *Order of Operations (PEMDAS)*

Evaluate each of the following arithmetic expressions. If an expression results in an error, write '**ERROR**' and explain why. Note the built-in function **abs**, which takes in a number and returns the absolute value of that number.

```
1  (5 + 7) * min(3, 4) # Q2.1
2  abs(max(5, 2) - min (7, 10) # Q2.2
3  max(abs(5 - 12 // 2), min(3, 4), 2 ** 3) # Q2.3
```

Q2.1 What does line one result in?

Q2.2 What does line two result in?

Q2.3 What does line three result in?

## Q3 *Energy Levels of Starship Pilots (Optional)*

Lisa, a starship fleet commander, is monitoring the energy levels of different pilots' starships. Each pilot starts with a certain energy level, represented by a number. Throughout the mission, the pilots' energy levels change based on various maneuvers and situations they encounter. However, Lisa's own starship energy level keeps changing as she mimics or adapts to the energy levels of other pilots. Lisa is now confused and needs help to figure out the final energy levels of each pilot.

Below is the sequence of events. Determine the final energy levels for Lisa and her fellow pilots (Earn, Faith, and Richard) at the end:

```
1   richard = 100
2   faith = 120
3   earn = 150
4   lisa = 200
5
6   lisa = 180
7   richard = lisa
8
9   faith = 110
10  earn = faith
11
12  lisa = 130
13  richard = faith
14
15  faith = 90
16  lisa = faith
17  faith = lisa
```

Q3.1 Add comments to:

```
1   richard = lisa
2   earn = faith
```



Q3.2 What are the final energy levels?

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## Q4  *Brewing up Some Code! (Optional)*

Elizabeth Fang, a well-renowned vampire, loves to brew magical potions in her free time. Her favorite potions are the Love Potion, which makes anyone who drinks it fall instantly in love with her, and the Invisibility Elixir, which grants her invisibility for 20 minutes at a time. Elizabeth is trying to calculate the total brewing time required for these potions over a week, assuming she needs to brew them daily.
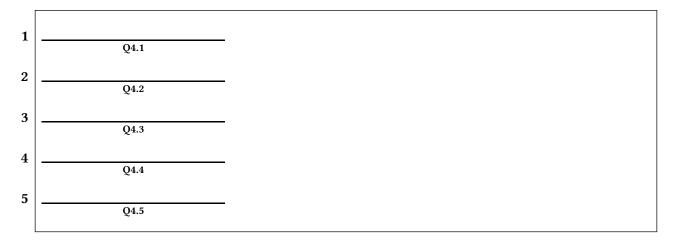
| Potion Type | Number of Potions Needed Daily | Average Brewing Time per Potion (minutes) |
|---|---|---|
| Love Potion | 20 | 3.5 |
| Invisibility Elixir | 15 | 4.8 |

Table 1: Number of Potions and Average Brewing Time per Day per Potion

Elizabeth attempts to compute the **absolute value** of the difference between the total number of minutes spent brewing Love Potions and Invisibility Elixirs over a week (7 days). Unfortunately, she makes some errors in her initial code. Can you help her identify and correct these errors? Ensure that the corrected code outputs (shows the result) as a single, **positive** number.

**HINT**: You use the built-in function **abs** which takes in a number and returns the absolute value of that number.

```
1  data6 = 20(3.5)
2  brewing_time_invisibility = 15(4.8)
3  daily_difference = ((data6 - brewing_time_elixir)
4  weekly_difference = daily_difference * 7
5  total_time_difference = weekly_difference * 52
```

```
1  _____          Q4.1

2  _____          Q4.2

3  _____          Q4.3

4  _____          Q4.4

5  _____          Q4.5
```