Assignment 4: Objects

Questions

1. What are `id()` and `type()`?

Answer

2. Given the code `print("Hello,\tI\'m Mana.\nI want to be a \"demon slayer\".")` What does it print?

Answer

3. Consider the following program:

```
s = chr(85) + 2*chr(73) + chr(65) + chr(32)
n = ord("~") - ord("x")

new_s = n * s
print(f"The new sentence is {new_s}")
```

What is its output?

Answer

4. Given `s = "Minecraft"`, what is the value and type of `ord(s[1])`?

Answer

Task 1: Formating Output

Professor John want to estimate the Euler's number using limit definition:

$$e = \lim_{n \to \infty} \left(1 + \frac{1}{n}\right)^n$$

As n approches infinity, he assigns $n = 5 \times 10^3$ and wants to print its value formatted with 3 total digits before the decimal point and 5 digits after the decimal point, padded accordingly. What is the value that he print?

Answer

Task 2: Lists and Tuples

Task 2.1: Lists

Consider the following program:

```
num_list = [1, 2, "Tanjiro", 4, 5]

x = num_list[0] + num_list[-1]
y = num_list[1] + num_list[-2]
num_list[2] = x - y

print(f"x - y = {num_list[2]}")
```

What is the program output?

Answer

Task 2.2: Tuples

Consider the following program:

```
num_list = (1, 2, "Nezuko", 4, 5)

x = num_list[0] + num_list[-1]
y = num_list[1] + num_list[-2]
num_list[2] = x - y

print(f"x - y = {num_list[2]}")
```

What is the program output? Discuss the result.

Answer

Task 2.3: List and Tuple Applications

Why are tuples important, even though they are immutable? Additionally, when should we use a tuple instead of a list?

Answer