**Caesar Decrypt**

**Background**

Encryption algorithms are a set of instructions to turn a plaintext (i.e. ordinary message) into an unreadable text (i.e. ciphertext). Decryption algorithms are a set of instructions that turn the ciphertext back into the original plain text (sometimes it is a step-by-step reversal of an encryption algorithm but not always). One of the simplest and oldest encryption algorithms is the caesar cipher. It works by taking a key (i.e a piece of information that is used to determine the algorithm's output), a plaintext, and a shift number. If a character in the plaintext is in the key, the character is shifted (right for positive shift number and left for negative shift number) along the key. For example, if the plaintext was “HI” and the key was the alphabet and the shift number was 2, then “H” and “I” would move 2 characters to the right to “JK”. You will be tasked with implementing the decryption algorithm for the caesar cipher.

**Problem**

During a mission, agent Ryan is assigned to **decrypt** messages that his team has retrieved from the enemy. According to the information, he knows that there is a fixed (string) **key** to decrypt the message from the enemy and the number (int) **shift** to show that how the original character shifts along the key to a new character to generate a new encrypted string.

**Example:**

Key: “abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789”

plaintext: “Fb40i4 2edj8dk4 je fh02j824 fhef4h ie280b 38ij0d28d6,y h40bbo b8a4 20hheji”

shift: -10

Ciphertext: “Please continue to practice proper social distancing,I really like carrots.”

plaintext:“Your limitation is only your imagination”

shift: 0

Ciphertext: “Your limitation is only your imagination”

**Constraints**

Consider the valid input will be a (string) message where its length is more than or equal to 0. In order to **decrypt** the message, a **negative** shift will make the character shift to the **right** and the **positive** shift will make the character shift to the **left**.

Note: All the punctuation and spacing will remain the same

**Testing**

A Python unit test can be found alongside the caesarDecrypt.py file. After filling in the method definition inside caesarDecrypt.py, run the test. To run the test, either run the unit tests in an IDE or in the command line, cd into the directory with the file and type <test\_caesarDecrypt.py>.