Challenge-6

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Questions

Question-1: Countdown Blastoff (While Loop)

Create a program that simulates a rocket launch countdown using a while loop. Start from 10 and countdown to “Blastoff!” with a one-second delay between each countdown number. Print a message when the rocket launches.

Hint: You may want to use `cat` command to print the countdown and `Sys.sleep` for incorporating the delay

Output preview: Here is how the countdown could look like **Solutions:**

```
# Enter code here
# Function to simulate rocket launch countdown
countdown_to_blastoff <- function() {
  countdown <- 10

  while (countdown > 0) {
    cat(countdown, "... ", sep = "")
    Sys.sleep(1)  # Delay for 1 second
    countdown <- countdown - 1
  }

  cat("Blastoff!\n")
}

# Call the function to start the countdown
countdown_to_blastoff()
```

```
## 10... 9... 8... 7... 6... 5... 4... 3... 2... 1... Blastoff!
```

Question-2: Word Reverser (for Loop)

Develop a program that takes a user-entered word and uses a while loop to print the word’s characters in reverse order. For example, if the user enters “hello,” the program should print “olleh.”

Hint: You may want to use `substr` command to access each character of the input word, and `paste` command to join the reversed letters one at a time

Solutions:

```
# Enter code here
# Function to reverse and print a user-entered word
reverse_and_print_word <- function() {
  # Prompt the user to enter a word
  word <- readline(prompt = "Enter a word: ")

  reversed_word <- ""  # Initialize an empty string to store the reversed word
  word_length <- nchar(word)  # Get the length of the input word
  i <- word_length  # Initialize i to the length of the word

  while (i > 0) {
    # Use substr to extract the i-th character from the word
    letter <- substr(word, i, i)

    # Concatenate the letter to the reversed_word
    reversed_word <- paste(reversed_word, letter, sep = "")

    i <- i - 1  # Decrement i to move to the previous character
  }

  cat("Reversed word: ", reversed_word, "\n")
}

# Call the function to reverse and print the user-entered word
reverse_and_print_word()
```

```
## Enter a word:
## Reversed word:
```