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 a one-second delay
delay <- function(seconds) {
  Sys.sleep(seconds)
}

# Initialize the countdown value
countdown <- 10

# Start the countdown
while (countdown > 0) {
  cat(countdown, "...")
  countdown <- countdown - 1
  delay(1)
}
```

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

```
# Print the "Blastoff!" message when the countdown reaches 0
cat("Blastoff!\n")
```

```
## Blastoff!
```

```
# Print the rocket launch message
cat("Rocket has launched!\n")
```

```
## Rocket has launched!
```

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 a string
reverse_string <- function(input_string) {
  reversed <- ""
  i <- nchar(input_string)
  while (i > 0) {
    reversed <- paste(reversed, substr(input_string, i, i), sep = "")
    i <- i - 1
  }
  return(reversed)
}

# Prompt the user for input
user_input <- readline("Enter a word: ")
```

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

```
# Call the reverse_string function and print the reversed word
reversed_word <- reverse_string(user_input)
cat("Reversed word:", reversed_word, "\n")
```

```
## Reversed word:
```