

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:

```
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")  
}  
  
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:

```
# 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:

```