Challenge-6

Soh Li Ying

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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

Solutions:

```
countdown <- 10

# While loop to countdown
while (countdown >= 0) {
  if (countdown == 0) {
    cat("\nBlastoff!")
  } else {
    cat(countdown, "...")
  }
  # Sleep for one second
  Sys.sleep(1)
  # Iterate from the back
  countdown <- countdown - 1
}
```

```
## 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:

```
# Prompt user to input a word
user_input <- "butterly"

# Track position of character
```

```r
pos <- nchar(user_input)

# Initialise an empty string to store the reversed word
reversed_word <- character()

# While loop
while (pos >= 1) {
  # Accessing each character of the input word in current position
  char <- substr(user_input, pos, pos)
  # Append characters to reversed word
  reversed_word <- paste(reversed_word, char, sep = "")
  # Work backwards to the last letter
  pos <- pos - 1
}

# Print the reversed word
cat("Reversed word: ", reversed_word, "\n")
```

```
## Reversed word:  ylrettub
```