

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
countdown <- 10

while (countdown > 0) {
  cat("T-minus", countdown, "\n")
  Sys.sleep(1) # Sleep for 1 second
  countdown <- countdown - 1
}
```

```
## T-minus 10
## T-minus 9
## T-minus 8
## T-minus 7
## T-minus 6
## T-minus 5
## T-minus 4
## T-minus 3
## T-minus 2
## T-minus 1
```

```
cat("Blastoff!\n")
```

```
## 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
# Get user input
word <- "hello"

# Initialize an index variable to the length of the word
index <- nchar(word)

# Initialize an empty string to store the reversed word
reversed_word <- ""

# Use a while loop to reverse the word
while (index > 0) {
  # Extract a single character from the word using substr
  char <- substr(word, index, index)

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

  # Decrement the index
  index <- index - 1
}

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

```

```
## Reversed word: olleh
```