

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 <- 10

while (countdown >= 1) {
  cat(countdown, "\n")
  Sys.sleep(1) # Pause for 1 second
  countdown <- countdown - 1
}
```

```
## 10
## 9
## 8
## 7
## 6
## 5
## 4
## 3
## 2
## 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:

```

# Get user input
word <- readline(prompt = "Enter a word: ")

## Enter a word:

# Initialize variables
length_word <- nchar(word)
reverse_word <- ""
index <- length_word

# Use a while loop to reverse the word
while (index > 0) {
  reverse_word <- paste(reverse_word, substr(word, index, index), sep = "")
  index <- index - 1
}

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

## Reversed word:

```