Challenge-6

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```
knitr::opts_chunk$set(echo = TRUE)
```

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

#{r, out.height= "20px",out.width= "200px",echo=TRUE} knitr::include_graphics("images/countdown.png")

```
#{r, out.height= "20px",out.width= "200px",echo=TRUE}
knitr::include_graphics("images/blastoff.png")
```

```
**Solutions:**
```

```
```r
countdown <- 10

cat("Rocket launch countdown starting...\n")

## Rocket launch countdown starting...
```

```
while (countdown >= 1) {
  cat(countdown, "...")
  Sys.sleep(1)
  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:

```
reverse_word <- function(word) {
  word <- as.character(substitute(word))
  reversed_word <- rev(unlist(strsplit(word, "")))
  reversed_word <- paste(reversed_word, collapse = "")
  cat("Reversed word:", reversed_word, "\n")
  return(reversed_word)
}
```