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Subject: Computing Lab - III | Experiment No - 06 (3rd YEAR CSE-AIML 2023-2024)

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Aim: To implement different conditional statements in R programming language.

Theory:

Conditional statements are fundamental constructs in programming languages, enabling the execution of specific code blocks based on given conditions. In R programming, we encounter various types of conditional statements:

1. **if-else statement:** It evaluates a condition and executes a block of code if the condition is true. If the condition is false, it executes another block of code.

```
x <- 10
if (x > 5) {
  print("x is greater than 5")
} else {
  print("x is less than or equal to 5")
}
```

```
## [1] "x is greater than 5"
```

2. **if-else if-else statement:** This statement allows us to check multiple conditions sequentially. It provides flexibility in handling various scenarios based on different conditions.

```
y <- 7
if (y < 5) {
  print("y is less than 5")
} else if (y == 5) {
  print("y is equal to 5")
} else {
  print("y is greater than 5")
}
```

```
## [1] "y is greater than 5"
```

3. **switch statement:** The switch statement provides an efficient way to select one of many alternative blocks of code to be executed based on the value of a variable.

```
z <- "apple"
switch(z,
       "apple" = print("It's a fruit"),
       "car" = print("It's a vehicle"),
       "cat" = print("It's an animal"),
       print("Not recognized")
)
```

```
## [1] "It's a fruit"
```

4. **for loop:** Loops are used to iterate over a sequence of elements. The for loop in R allows executing a block of code repeatedly for a specified number of times.

```
for (i in 1:5) {
  print(paste("Iteration:", i))
}
```

```
## [1] "Iteration: 1"
## [1] "Iteration: 2"
## [1] "Iteration: 3"
## [1] "Iteration: 4"
## [1] "Iteration: 5"
```

Conclusion:

In this experiment, we explored different conditional statements and a for loop in R programming language. These constructs are essential for controlling the flow of execution and iterating over elements in a program.

Signature of Lab Incharge

(Prof. Supriya Khaitan)