

Conditional Statements in R Language

Complete Notes with Practice Codes (Roman Urdu)

1 Introduction

Conditional statements R language me decision making ke liye use hotay hain. In statements ke zariye program decide karta hai ke kaunsa code execute hoga aur kaunsa nahi.

2 If Statement

Definition

`if` statement tab use hota hai jab sirf ek condition check karni ho. Agar condition TRUE ho to code execute hota hai, warna kuch bhi nahi hota.

Syntax

```
if (condition) {  
    # code  
}
```

Practice Codes (10)

```
x <- 10  
if (x > 5) { print("Greater than 5") }  
  
age <- 20  
if (age >= 18) { print("Eligible") }  
  
marks <- 45  
if (marks >= 50) { print("Pass") }  
  
temp <- 35  
if (temp > 30) { print("Hot Weather") }
```

```

salary <- 60000
if (salary > 50000) { print("High Salary") }

num <- -5
if (num < 0) { print("Negative") }

speed <- 80
if (speed > 60) { print("Overspeeding") }

balance <- 0
if (balance == 0) { print("Zero Balance") }

items <- 15
if (items > 10) { print("Bulk Order") }

score <- 90
if (score == 100) { print("Perfect Score") }

```

3 If Else Statement

Definition

`if else` tab use hota hai jab do possible decisions hon. Agar condition TRUE ho to `if`, warna `else` execute hota hai.

Syntax

```

if (condition) {
    # true block
} else {
    # false block
}

```

Practice Codes (10)

```

age <- 16
if (age >= 18) { print("Adult") } else { print("Minor") }

marks <- 40
if (marks >= 50) { print("Pass") } else { print("Fail") }

```

```

num <- 7
if (num %% 2 == 0) { print("Even") } else { print("Odd") }

temp <- 25
if (temp > 30) { print("Hot") } else { print("Normal") }

balance <- 500
if (balance > 0) { print("Available") } else { print("Empty") }

speed <- 45
if (speed > 60) { print("Fast") } else { print("Safe") }

salary <- 40000
if (salary >= 50000) { print("Taxable") } else { print("No Tax") }

x <- -3
if (x > 0) { print("Positive") } else { print("Negative") }

login <- TRUE
if (login) { print("Welcome") } else { print("Access Denied") }

stock <- 0
if (stock > 0) { print("In Stock") } else { print("Out of Stock") }

```

4 Else If Statement

Definition

`else if` tab use hota hai jab multiple conditions ko step by step check karna ho.

Syntax

```

if (condition1) {
} else if (condition2) {
} else {
}

```

Practice Codes (10)

```

marks <- 85
if (marks >= 80) { print("A") }
else if (marks >= 60) { print("B") }
else { print("Fail") }

temp <- 15
if (temp > 30) { print("Hot") }
else if (temp >= 20) { print("Warm") }
else { print("Cold") }

age <- 65
if (age < 18) { print("Child") }
else if (age < 60) { print("Adult") }
else { print("Senior") }

score <- 90
if (score == 100) { print("Perfect") }
else if (score >= 50) { print("Pass") }
else { print("Fail") }

time <- 14
if (time < 12) { print("Morning") }
else if (time < 18) { print("Afternoon") }
else { print("Evening") }

salary <- 30000
if (salary > 80000) { print("High") }
else if (salary > 40000) { print("Medium") }
else { print("Low") }

units <- 120
if (units > 200) { print("Heavy") }
else if (units > 100) { print("Normal") }
else { print("Low") }

rating <- 4
if (rating == 5) { print("Excellent") }
else if (rating >= 3) { print("Good") }
else { print("Poor") }

day <- 6
if (day == 7) { print("Sunday") }
else if (day == 6) { print("Saturday") }
else { print("Working Day") }

```

```
fuel <- 10
if (fuel == 0) { print("Empty") }
else if (fuel < 15) { print("Low") }
else { print("Enough") }
```

5 Nested If Else Statement

Definition

Nested if ka matlab hai if ke andar if. Inner condition sirf tab check hoti hai jab outer condition TRUE ho.

Golden Rule

Outer if FALSE ho to inner if execute nahi hota.

Practice Codes (10)

```
marks <- 70
if (marks >= 50) {
    if (marks >= 80) { print("A") } else { print("B") }
} else { print("Fail") }

attendance <- 80
marks <- 45
if (attendance >= 75) {
    if (marks >= 50) { print("Pass") } else { print("Fail Marks") }
} else { print("Fail Attendance") }

age <- 22
gender <- "M"
if (age >= 18) {
    if (gender == "M") { print("Adult Male") } else { print("Adult Female") }
}

balance <- 5000
pin <- TRUE
if (pin) {
    if (balance > 0) { print("Withdraw Allowed") } else { print("No Balance") }
```

```

}

speed <- 90
if (speed > 60) {
  if (speed > 100) { print("Heavy Fine") } else { print("Normal
    Fine") }
}

login <- TRUE
admin <- FALSE
if (login) {
  if (admin) { print("Admin Access") } else { print("User Access
    ") }
}

temp <- 35
if (temp > 30) {
  if (temp > 40) { print("Extreme Heat") } else { print("Hot") }
}

marks <- 55
if (marks >= 50) {
  if (marks >= 90) { print("Topper") } else { print("Average Pass
    ") }
}

experience <- 3
if (experience >= 1) {
  if (experience >= 5) { print("Senior") } else { print("Junior")
    }
}

fuel <- 20
engine <- TRUE
if (engine) {
  if (fuel > 0) { print("Car Running") } else { print("No Fuel")
    }
}

```

6 Conclusion

Conditional statements program ko intelligent banatay hain. Nested if complex decision making ke liye use hota hai jab ek condition dusri condition par depend kerti ho.