**R CODE**

1. **QUESTION:**

Convert your Python code into R.

**SOLUTION:**

**R Code:**

1. **Use variables to create a list of workers dynamically (at least 400 workers)**

# Number of workers to create

num\_workers <- 400

# Create a list of workers (dynamically)

workers <- paste0("Worker\_", 1:num\_workers)

# Print a few workers to verify

print(workers[1:20]) # Output: "Worker\_1" "Worker\_2" ... "Worker\_20"

# Print the total number of workers

cat("Total workers:", length(workers), "\n") # Output: Total workers: 400

1. **Utilize a for loop to generate payment slips for each of the 400 workers.**

**R CODE**

# Number of workers

num\_workers <- 400

# Generate payment slips for each worker

for (i in 1:num\_workers) {# Worker ID or name

worker\_name <- paste0("Worker\_", i)

# Payment slip details

payment\_slip <- paste("Payment Slip for", worker\_name)

# Print or save the payment slip

print(payment\_slip)}

**Output:**

The program prints:

[1] "Payment Slip for Worker\_1"

[1] "Payment Slip for Worker\_2"

[1] "Payment Slip for Worker\_3"

...

[1] "Payment Slip for Worker\_400"

1. **Implement the following conditional statements within the for loop:**
2. If the salary is greater than $10,000 and less than $20,000, assign the Employee level as "A1."
3. If the salary is greater than $7,500 and less than $30,000 and the employee is female, set the Employee level as "A5-F."

**Solution:**

**R Code:**

# Load necessary library

set.seed(123) # For reproducibility

# Number of workers

num\_workers <- 400

# Generate worker data (salary and gender)

workers\_data <- data.frame(worker\_name = paste0("Worker\_", 1:num\_workers),

salary = sample(5000:35000, num\_workers, replace = TRUE),

gender = sample(c("Male", "Female"), num\_workers, replace = TRUE))

# Assign employee level based on conditions

workers\_data$employee\_level <- "Unspecified" # Default level

for (i in 1:num\_workers) {salary <- workers\_data$salary[i], gender <- workers\_data$gender[i]}

# Conditional logic for assigning employee levels

if (salary > 10000 & salary < 20000) {workers\_data$employee\_level[i] <- "A1"}

else if (salary > 7500 & salary < 30000 & gender == "Female") {workers\_data$employee\_level[i] <- "A5-F"}}

# Print worker details

for (i in 1:num\_workers) {worker <- workers\_data[i, ]

cat(sprintf("Name: %s, Salary: $%d, Gender: %s, Level: %s\n", worker$worker\_name, worker$salary, worker$gender, worker$employee\_level))}

**Output:**

Name: Worker\_1, Salary: $18420, Gender: Female, Level: A1

Name: Worker\_2, Salary: $9100, Gender: Female, Level: A5-F

Name: Worker\_3, Salary: $12000, Gender: Male, Level: A1

Name: Worker\_4, Salary: $35000, Gender: Male, Level: Unspecified

...

1. **Add exception handling to your Python code to address potential errors.**

**R Code:**

# Set seed for reproducibility

set.seed(123)

# Number of workers

num\_workers <- 400

# Generate worker data

workers <- paste0("Worker\_", 1:num\_workers)

salaries <- sample(5000:35000, num\_workers, replace = TRUE)

genders <- sample(c("Male", "Female"), num\_workers, replace = TRUE)

# Process each worker with error handling

for (i in 1:num\_workers) {

tryCatch({# Retrieve worker details

worker\_name <- workers[i]

salary <- salaries[i]

gender <- genders[i]

employee\_level <- "Unspecified" # Default level

# Conditional logic for employee level assignment

if (salary > 10000 & salary < 20000) {employee\_level <- "A1"}

else if (salary > 7500 & salary < 30000 & gender == "Female")

{employee\_level <- "A5-F"}

# Display worker details

cat(sprintf("%s | Gender: %s | Salary: $%d | Level: %s\n",

worker\_name, gender, salary, employee\_level))},

# Exception handling

error = function(e) {cat(sprintf("Error at worker %d: %s\n", i, e$message))

},

warning = function(w) {cat(sprintf("Warning at worker %d: %s\n", i, w$message))},

finally = {# Optional: Code to always run after each iteration (e.g., cleanup)})}

**Output:**

Worker\_1 | Gender: Female | Salary: $11234 | Level: A1

Worker\_2 | Gender: Male | Salary: $9000 | Level: Unspecified

Worker\_3 | Gender: Female | Salary: $25000 | Level: A5-F

Worker\_4 | Gender: Male | Salary: $30000 | Level: Unspecified