# Task3.r

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```r
#Create employee List
employee1<-list(EmployeeID=101,Name="Sam George",Salary=10000,Departments=c("Sales","Marketin
g","Development"))
employee2<-list(EmployeeID=102,Name="Tina Mathew",Salary=12000,Departments=c("Sales","HR","De
sign"))
employee3<-list(EmployeeID=103,Name="Ram kumar",Salary=11000,Departments=c("HR","Marketin
g","Design"))

employees<-list(employee1,employee2,employee3)


#Annual salary
annual_salary<-as.integer(employee1$Salary) * 12
annual_salary
```

```
## [1] 120000
```

```r
#change Employee NAme to New Name
employee1$Name<-"Charlie Brown"
employee1$Name
```

```
## [1] "Charlie Brown"
```

```r
#add a new department
employee1$Departments <- c(employee1$Departments, "IT")
employee1$Departments
```

```
## [1] "Sales"       "Marketing"   "Development" "IT"
```

```r
#create Organisation List
organization <- list(
  Name = "XYZ Corporation",
  Employees = list(employee1, employee2, employee3)
  # Add details of at least three employees
)

#display Content of entire nested list
print(organization)
```

```
## $Name
## [1] "XYZ Corporation"
##
## $Employees
## $Employees[[1]]
## $Employees[[1]]$EmployeeID
## [1] 101
##
## $Employees[[1]]$Name
## [1] "Charlie Brown"
##
## $Employees[[1]]$Salary
## [1] 10000
##
## $Employees[[1]]$Departments
## [1] "Sales"       "Marketing"   "Development" "IT"
##
##
## $Employees[[2]]
## $Employees[[2]]$EmployeeID
## [1] 102
##
## $Employees[[2]]$Name
## [1] "Tina Mathew"
##
## $Employees[[2]]$Salary
## [1] 12000
##
## $Employees[[2]]$Departments
## [1] "Sales"  "HR"      "Design"
##
##
## $Employees[[3]]
## $Employees[[3]]$EmployeeID
## [1] 103
##
## $Employees[[3]]$Name
## [1] "Ram kumar"
##
## $Employees[[3]]$Salary
## [1] 11000
##
## $Employees[[3]]$Departments
## [1] "HR"          "Marketing" "Design"
```

```
#Access and print the annual salary of the second employee in the organization.
second_employee_salary <- organization$Employees[[2]]$Salary * 12
second_employee_salary
```

```
## [1] 144000
```

```
#print organisation name
print(organization$Name)
```

```
## [1] "XYZ Corporation"
```

```r
#Create a department_employees list
department_employees <- list()

# Group employees by department
for (employee in employees) {
  for (department in employee$Departments) {
    if (department %in% names(department_employees)) {
      department_employees[[department]] <- c(department_employees[[department]], employee)
    } else {
      department_employees[[department]] <- list(employee)
    }
  }
}

# Display the structure and content of the lists
print("Employee 1 Structure:")
```

```
## [1] "Employee 1 Structure:"
```

```r
print(str(employee1))
```

```
## List of 4
##  $ EmployeeID : num 101
##  $ Name       : chr "Charlie Brown"
##  $ Salary     : num 10000
##  $ Departments: chr [1:4] "Sales" "Marketing" "Development" "IT"
## NULL
```

```r
print("Organization List:")
```

```
## [1] "Organization List:"
```

```r
print(str(organization))
```

```
## List of 2
##  $ Name     : chr "XYZ Corporation"
##  $ Employees:List of 3
##   ..$ :List of 4
##   .. ..$ EmployeeID : num 101
##   .. ..$ Name       : chr "Charlie Brown"
##   .. ..$ Salary     : num 10000
##   .. ..$ Departments: chr [1:4] "Sales" "Marketing" "Development" "IT"
##   ..$ :List of 4
##   .. ..$ EmployeeID : num 102
##   .. ..$ Name       : chr "Tina Mathew"
##   .. ..$ Salary     : num 12000
##   .. ..$ Departments: chr [1:3] "Sales" "HR" "Design"
##   ..$ :List of 4
##   .. ..$ EmployeeID : num 103
##   .. ..$ Name       : chr "Ram kumar"
##   .. ..$ Salary     : num 11000
##   .. ..$ Departments: chr [1:3] "HR" "Marketing" "Design"
## NULL
```

```
print("Department Employees List:")
```

```
## [1] "Department Employees List:"
```

```
print(department_employees)
```

```
## $Sales
## $Sales[[1]]
## $Sales[[1]]$EmployeeID
## [1] 101
##
## $Sales[[1]]$Name
## [1] "Sam George"
##
## $Sales[[1]]$Salary
## [1] 10000
##
## $Sales[[1]]$Departments
## [1] "Sales"        "Marketing"    "Development"
##
##
## $Sales$EmployeeID
## [1] 102
##
## $Sales$Name
## [1] "Tina Mathew"
##
## $Sales$Salary
## [1] 12000
##
## $Sales$Departments
## [1] "Sales"  "HR"       "Design"
##
##
## $Marketing
## $Marketing[[1]]
## $Marketing[[1]]$EmployeeID
## [1] 101
##
## $Marketing[[1]]$Name
## [1] "Sam George"
##
## $Marketing[[1]]$Salary
## [1] 10000
##
## $Marketing[[1]]$Departments
## [1] "Sales"        "Marketing"    "Development"
##
##
## $Marketing$EmployeeID
## [1] 103
##
## $Marketing$Name
## [1] "Ram kumar"
##
## $Marketing$Salary
## [1] 11000
##
## $Marketing$Departments
## [1] "HR"        "Marketing" "Design"
##
```

```
## 
## $Development
## $Development[[1]]
## $Development[[1]]$EmployeeID
## [1] 101
## 
## $Development[[1]]$Name
## [1] "Sam George"
## 
## $Development[[1]]$Salary
## [1] 10000
## 
## $Development[[1]]$Departments
## [1] "Sales"       "Marketing"   "Development"
## 
## 
## 
## $HR
## $HR[[1]]
## $HR[[1]]$EmployeeID
## [1] 102
## 
## $HR[[1]]$Name
## [1] "Tina Mathew"
## 
## $HR[[1]]$Salary
## [1] 12000
## 
## $HR[[1]]$Departments
## [1] "Sales"  "HR"      "Design"
## 
## 
## $HR$EmployeeID
## [1] 103
## 
## $HR$Name
## [1] "Ram kumar"
## 
## $HR$Salary
## [1] 11000
## 
## $HR$Departments
## [1] "HR"         "Marketing" "Design"
## 
## 
## $Design
## $Design[[1]]
## $Design[[1]]$EmployeeID
## [1] 102
## 
## $Design[[1]]$Name
## [1] "Tina Mathew"
## 
## $Design[[1]]$Salary
## [1] 12000
## 
```

```
## $Design[[1]]$Departments
## [1] "Sales"  "HR"      "Design"
##
##
## $Design$EmployeeID
## [1] 103
##
## $Design$Name
## [1] "Ram kumar"
##
## $Design$Salary
## [1] 11000
##
## $Design$Departments
## [1] "HR"         "Marketing" "Design"
```

## $Design[[1]]$Departments
## [1] "Sales"  "HR"      "Design"
##
##
## $Design$EmployeeID
## [1] 103
##
## $Design$Name
## [1] "Ram kumar"
##
## $Design$Salary
## [1] 11000
##
## $Design$Departments
## [1] "HR"         "Marketing" "Design"