

## TABLES

### Numbers of Tables: 5

#### Clients

CLIENT
<u>Client-code</u>
Address
Country
Phone
Company-phone
Company-name

#### Projects

PROJECT
<u>ProjectID</u>
ClientCode
ProjectDesc
ProjectName
EstimatedBill
StartDate
EndDate

#### Time Cards

TIME CARD
<u>TimeCardID</u>
EmployeeID
ProjectID
DateWorked
BilledHours
BillingRate
WorkCodeID
WorkDesc
ExpenseID
ExpenseDesc
ExpenseDate
ExpenseAmount

#### Payments

Payment
<u>PaymentID</u>
ProjectID
Client-Code
PaymentModeName
PaymentDate
PaymentModeID
PaymentAmount
Creditcard Number
CardHoldersName
CardExpiryDate

#### Employees

EMPLOYEE
<u>EmployeeID</u>
EmployeeName
Address
Country
ContactPerson
WorkPhone

## TABLES AFTER 1NF

The Tables are already in 1NF. The table structures are shown here.

### Clients

CLIENT
<u>Client-code</u>
Address
Country
Phone
Company-phone
Company-name

### Projects

PROJECT
<u>ProjectID</u>
ClientCode
ProjectDesc
ProjectName
EstimatedBill
StartDate
EndDate

### Time Cards

TIME CARD
<u>TimeCardID</u>
EmployeeID
ProjectID
DateWorked
BilledHours
BillingRate
WorkCodeID
WorkDesc
ExpenseID
ExpenseDesc
ExpenseDate
ExpenseAmount

### Payments

Payment
<u>PaymentID</u>
ProjectID
Client-Code
PaymentModeName
PaymentDate
PaymentModeID
PaymentAmount
Creditcard Number
CardHoldersName
CardExpiryDate

### Employees

EMPLOYEE
<u>EmployeeID</u>
EmployeeName
Address
Country
ContactPerson
WorkPhone

## TABLES AFTER 2NF

The Tables are already in 2NF as the attributes in each table depend on the primary key. The Table structures are shown here.

### Clients

CLIENT
<u>Client-code</u>
Address
Country
Phone
Company-phone
Company-name

### Projects

PROJECT
<u>ProjectID</u>
ClientCode
ProjectDesc
ProjectName
EstimatedBill
StartDate
EndDate

### Time Cards

TIME CARD
<u>TimeCardID</u>
EmployeeID
ProjectID
DateWorked
BilledHours
BillingRate
WorkCodeID
WorkDesc
ExpenseID
ExpenseDesc
ExpenseDate
ExpenseAmount

### Payments

Payment
<u>PaymentID</u>
ProjectID
Client-Code
PaymentModeName
PaymentDate
PaymentModeID
PaymentAmount
Creditcard Number
CardHoldersName
CardExpiryDate

### Employees

EMPLOYEE
<u>EmployeeID</u>
EmployeeName
Address
Country
ContactPerson
WorkPhone

## TABLES AFTER 3NF

In the Time Cards table, the attribute Expense description depends on attribute Expense-ID and not on Time-Card-ID. Therefore, for the tables to be in 3NF, we need to create another table, **“Expense Details”**.

Also, in the Payments table, the attribute Payment-Method-Name depends on attribute Payment-Method-ID and not on Payment-ID. Therefore, for the tables to be in 3NF, we need to create another table **“Payment Methods”**.

In addition, the attributes Card-Holders-Name and Card-Expiry-Date depend on Credit-Card-No and not on Payment-ID. Therefore, the need to create another table **“Credit-Card-Details”**.

**Clients**

CLIENT
<u>Client-code</u>
Address
Country
Phone
Company-phone
Company-name

**Projects**

PROJECT
<u>ProjectID</u>
ClientCode
ProjectDesc
ProjectName
EstimatedBill
StartDate
EndDate

**Time Cards**

TIME CARD
<u>TimeCardID</u>
EmployeeID
ProjectID
DateWorked
BilledHours
BillingRate
WorkCodeID
WorkDesc
ExpenseID

### Employees

EMPLOYEE
<u>EmployeeID</u>
EmployeeName
Address
Country
ContactPerson
WorkPhone

### EXPENSE DETAILS

EXPENSE
<u>ExpenseID</u>
ExpenseDesc
ExpenseDate
ExpenseAmount

### Payments

Payment
<u>PaymentID</u>
ProjectID
Client-Code
PaymentModeName
PaymentDate
PaymentModeID
PaymentAmount Desc
CreditcardNumber

### CreditCard Details

CREDITCARD
<u>CreditcardNumber</u>
CardHoldersName
CardExpiryDate

