**NORMALIZATION:**

**HAS**

UNF

Has(bank\_id,bank\_name,bank\_address,e\_id,hiredate,e\_type,e\_name)

1NF: There is no multivalued attribute

2NF: bank\_id, bank\_name,bank\_address

e\_id,hiredate,e\_type,e\_name

3NF: There is no transitive dependency

bank\_id, bank\_name,bank\_address

e\_id,hiredate,e\_type,e\_name

Table for Has:

1. bank\_id, bank\_name,bank\_address
2. e\_id,hiredate,e\_type,e\_name ,bank\_id

**MANAGE**:

UNF:

Manage(e-id,hiredate,e\_type,e\_name,app\_no,app\_name)

1NF: There is no multivalued attribute

2NF: e-id,hiredate,e\_type,e\_name

app\_no,app\_name

3NF: There is no transitive dependency.

e-id,hiredate,e\_type,e\_name

app\_no,app\_name

Table for Manage:

1. e-id,hiredate,e-type,e\_name,app\_no

2. app\_no,app\_name

**GIVES SERVICE**:

UNF:

Gives Service(app\_no,app\_name,c\_id,c\_name,phone number,c\_address)

1NF: Phone number is multivalued attribute

2NF: app\_no,app\_name

c\_id,c\_name,phone number,c\_address

3NF: There is no transitive dependency

app\_no,app\_name

c\_id,c\_name,phone number,c\_address

Table for Gives Service:

1. app\_no,app\_name
2. c\_id,c\_name,c\_address,app\_no
3. c\_id,phone number – Composite primary key

**GIVES**:

UNF:

Gives(app\_no,app\_name,loan\_no,loan\_amount,loan\_date & time)

1NF: There is no multivalued attribute

2NF: app\_no,app\_name

loan\_no,loan\_amount,loan\_date & time

3NF: There is no transitive dependency

app\_no,app\_name

loan\_no,loan\_amount,loan\_date & time

Table for Gives:

1. app\_no,app\_name
2. loan\_no,loan\_amount,loan\_date & time,app\_no

**TAKES**:

UNF:

Takes(loan\_no,loan\_amount,loan\_date & time, c\_id,c\_name,phone number,c\_address)

1NF: Phone number is multivalued attribute

2NF: loan\_no,loan\_amount,loan\_date & time

c\_id,c\_name,phone number,c\_address

3NF: There is no transitive dependency

loan\_no,loan\_amount,loan\_date & time

c\_id,c\_name,phone number,c\_address

Table for Takes:

1. loan\_no,loan\_amount,loan\_date & time,c\_id
2. c\_id,c\_name,c\_address
3. c\_id,phone number - Composite Primary Key

**OPENS**:

UNF:

Opens(c\_id,c\_name,phone number,c\_address,a\_no,a\_type,a\_bal)

1NF: Phone number is multivalued attribute

2NF: c\_id,c\_name,phone number,c\_address

a\_no,a\_type,a\_bal

3NF: There is no transitive dependency

c\_id,c\_name,phone number,c\_address

a\_no,a\_type,a\_bal

Table for Opens:

1. c\_id,c\_name,c\_address
2. a\_no,a\_type,a\_bal,c\_id
3. c\_id,phone number - Composite Primary Key

**HAS**:

UNF:

Has(a\_no,a\_type,a\_bal,t\_no,t\_date&time,t\_amont)

1NF: There is no multivalued attribute

2NF: a\_no,a\_type,a\_bal

t\_no,t\_date&time ,t\_amont

3NF: There is no transitive dependency

a\_no,a\_type,a\_bal

t\_no,t\_date&time ,t\_amont

Table for Has:

1. a\_no,a\_type,a\_bal
2. t\_no,t\_date&time ,t\_amont,a\_no

**STORES:**

UNF:

Stores(app\_no,app\_name,t\_no,t\_date&time ,t\_amont)

1NF: There is no Multivalued attribute

2NF: app\_no,app\_name

t\_no,t\_date&time ,t\_amont

3NF: There is no transitive dependency

app\_no,app\_name

t\_no,t\_date&time ,t\_amont

Table for Stores:

1. app\_no,app\_name
2. t\_no,t\_date&time ,t\_amont,app\_no

**FORM:**

UNF:

Form(app\_no,app\_name,s\_num,e\_sal,s\_Date&time)

1NF: There is no multivalued attribute

2NF: app\_no,app\_name

s\_num,e\_sal,s\_Date&time

3NF: There is no transitive dependency

app\_no,app\_name

s\_num,e\_sal,s\_Date&time

Table for Form:

1. app\_no,app\_name
2. s\_num,e\_sal,s\_Date&time,app\_no

**TAKES:**

UNF:

Takes(s\_num,e\_sal,s\_Date&time, e\_id,hiredate,e\_type,e\_name)

1NF: There is no multivalued attribute

2NF: s\_num,e\_sal,s\_Date&time

e\_id,hiredate,e\_type,e\_name

3NF: There is no transitive dependency

s\_num,e\_sal,s\_Date&time

e\_id,hiredate,e\_type,e\_name

Table for Takes:

1. s\_num,e\_sal,s\_Date&time
2. e\_id,hiredate,e\_type,e\_name,s\_num

**Final Table List:**

1. bank\_id, bank\_name,bank\_address (Bank)

///2. e\_id,hiredate,e\_type,e\_name ,bank\_id, app\_no, s\_num (Employee)

3. app\_no,app\_name (App)

/ 4. c\_id,c\_name,c\_address,app\_no (Customer)

5. c\_id,phone number – Composite primary key (Customer\_phone\_number)

// 6. loan\_no,loan\_amount,loan\_date & time,app\_no, c\_id (Loan)

/7. a\_no,a\_type,a\_bal,c\_id (Account)

// 8. t \_no,t\_date&time ,t\_amont,a\_no, ,app\_no (Transaction\_records)

/ 9. s\_num,e\_sal,s\_Date&time,app\_no (Salary)