**Umeå University**
Department of Computing Science

# Introduction to Database Managment 7.5 p
# 5DV119

## Exercises, Chapter/Topic 4

# 1   Introduction

# 2   Mapping Step by Step

**Mapping of Regular Entity Types**

**BRANCH**

| B_number |
|----------|

**EMPLOYEE**

| E_id | E_name |
|------|--------|

**STATE**

| S_name | S_abbr |
|--------|--------|

**Step 2: Mapping of Weak Entity Types**

**CITY**

| C_name | S_abbr | Pop |
|--------|--------|-----|

**Step 3: Mapping of Binary 1:1 Relationship Types**

**BRANCH**

| B_number | MGR_id | MGR_start_date |
|----------|--------|----------------|

**EMPLOYEE**

| E_id | E_name |
|------|--------|

**STATE**

| S_name | S_abbr | Capital |
|--------|--------|---------|

**CITY**

| C_name | S_abbr | Pop |
|--------|--------|-----|

**Step 4: Mapping of Binary 1:N Relationship Types**

**BRANCH**

| B_number | MGR_id | MGR_start_date | C_name | S_abbr |
|----------|--------|----------------|--------|--------|

**CITY**

| C_name | S_abbr | Pop |
|--------|--------|-----|

**EMPLOYEE**

| E_id | E_name | C_name | S_abbr |
|------|--------|--------|--------|

**CITY**

| C_name | S_abbr | Pop |
|--------|--------|-----|

**CITY**

| C_name | S_abbr | Pop |
|--------|--------|-----|

**STATE**

| S_name | S_abbr | Capital |
|--------|--------|---------|
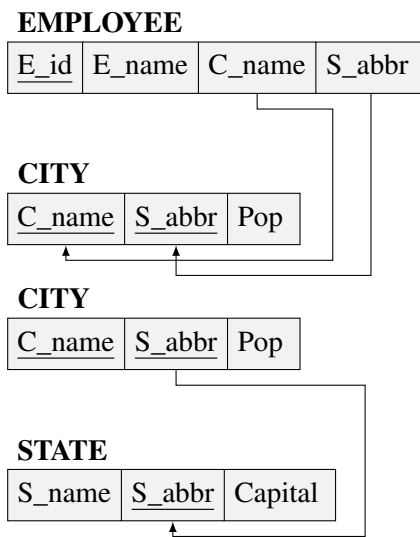
## Step 5: Mapping of Binary M:N Relationship Types

**WORKS_AT**

| B_number | E_id | Work_start_date |
|----------|------|-----------------|

**BRANCH**

| B_number | MGR_id | MGR_start_date | C_name | S_abbr |
|----------|--------|----------------|--------|--------|
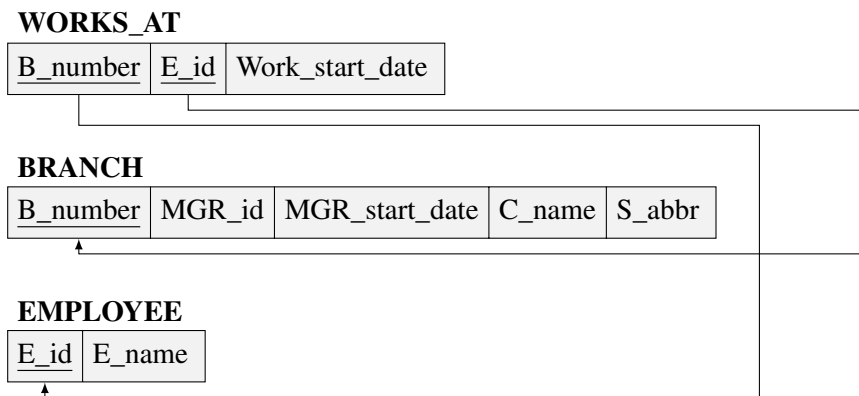
**EMPLOYEE**

| E_id | E_name |
|------|--------|

## Step 6: Mapping of Multivalued Attributes

**SERVICE**

| B_service | B_number |
|-----------|----------|

**BRANCH**

| B_number | MGR_id | MGR_start_date | C_name | S_abbr |
|----------|--------|----------------|--------|--------|
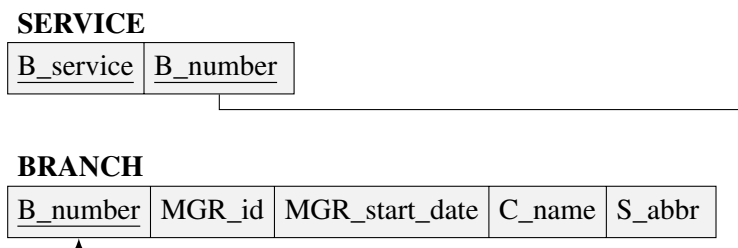
**Step 7: Mapping of N-ary Relationship Types**

# 3 Final Results

**BRANCH**

| B_number | MGR_id | MGR_start_date | C_name | S_abbr |
|----------|--------|----------------|--------|--------|

**SERVICE**

| B_service | B_number |
|-----------|----------|

**WORKS_AT**

| B_number | E_id | Work_start_date |
|----------|------|-----------------|

**EMPLOYEE**

| E_id | E_name | C_name | S_abbr |
|------|--------|--------|--------|

**STATE**

| S_name | S_abbr | Capital |
|--------|--------|---------|

**CITY**

| C_name | S_abbr | Pop |
|--------|--------|-----|