

Given the attributes for STORE, EMPLOYEE, DEPARTMENT and SCHEDULE.

We can show the attributes for each of these stated in P & E #8-50 on page 378 to have the following schema:

STORE

| | | | |
|-----------------|--------|-----------|------------|
| <u>Store_ID</u> | Region | ManagerID | SquareFeet |
|-----------------|--------|-----------|------------|

EMPLOYEE

| | | | |
|-------------------|-----------|--------------|-----------------|
| <u>EmployeeID</u> | WhereWork | EmployeeName | EmployeeAddress |
|-------------------|-----------|--------------|-----------------|

DEPARTMENT

| | | |
|---------------------|------------------|-----------|
| <u>DepartmentID</u> | <u>ManagerID</u> | SalesGoal |
|---------------------|------------------|-----------|

SCHEDULE

| | | |
|---------------------|-------------------|------|
| <u>DepartmentID</u> | <u>EmployeeID</u> | Date |
|---------------------|-------------------|------|

3 Cases for Denormalization :

CASE 1: STORE_EMPLOYEE and DEPARTMENT_SCHEDULE

CASE 2: STORE_DEPARTMENT and EMPLOYEE_SCHEDULE

CASE 3: STORE_SCHEDULE and EMPLOYEE_DEPARTMENT

CASE 1:

STORE_EMPLOYEE

| | | | | | | | |
|----------------|--------|------------------|------------|-------------------|-----------|--------------|-----------------|
| <u>StoreID</u> | Region | <u>ManagerID</u> | SquareFeet | <u>EmployeeID</u> | WhereWork | EmployeeName | EmployeeAddress |
|----------------|--------|------------------|------------|-------------------|-----------|--------------|-----------------|

DEPARTMENT_SCHEDULE

| | | | | |
|---------------------|------------------|-----------|-------------------|------|
| <u>DepartmentID</u> | <u>ManagerID</u> | SalesGoal | <u>EmployeeID</u> | Date |
|---------------------|------------------|-----------|-------------------|------|

Case 1 does not make sense for a large retail chain that this problems states this decomposition is to be applied to. The DEPARTMENT_SCHEDULE does not indicate which store the DEPARTMENT_SCHEDULE is intended for

CASE 2:

STORE_DEPARTMENT

| | | | | | |
|----------------|--------|------------------|------------|---------------------|-----------|
| <u>StoreID</u> | Region | <u>ManagerID</u> | SquareFeet | <u>DepartmentID</u> | SalesGoal |
|----------------|--------|------------------|------------|---------------------|-----------|

EMPLOYEE_SCHEDULE

| | | | | | |
|-------------------|-----------|--------------|-----------------|---------------------|------|
| <u>EmployeeID</u> | WhereWork | EmployeeName | EmployeeAddress | <u>DepartmentID</u> | Date |
|-------------------|-----------|--------------|-----------------|---------------------|------|

Case 2 makes sense for denormalization because STORE and DEPARTMENT are matched. This would satisfy Rule 2 on page 345 for a "many-to-many" relationship (associative entity) with non-key attributes

CASE 3:

STORE_SCHEDULE

| | | | | | | |
|----------------|--------|------------------|------------|---------------------|-------------------|------|
| <u>StoreID</u> | Region | <u>ManagerID</u> | SquareFeet | <u>DepartmentID</u> | <u>EmployeeID</u> | Date |
|----------------|--------|------------------|------------|---------------------|-------------------|------|

EMPLOYEE_DEPARTMENT

| | | | | | | |
|-------------------|-----------|--------------|------------------|-----------------|---------------------|------|
| <u>EmployeeID</u> | WhereWork | EmployeeName | <u>ManagerID</u> | EmployeeAddress | <u>DepartmentID</u> | Date |
|-------------------|-----------|--------------|------------------|-----------------|---------------------|------|

Case 3 does not make sense as some large retail chains are open 24/7, and the EMPLOYEE_DEPARTMENT schema has no Date as an identifier.